Alberta Advantage?: An examination of the long-term challenges of Alberta's non-renewable resource wealth governance

by

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A thesis submitted in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

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ABSTRACT

This dissertation applies an intergenerational lens to investigate the historical record of Alberta's resource wealth governance from Premier Lougheed to Premier Klein. It explores how Alberta has collected, saved, and distributed its resource wealth in order to examine the explicit and implicit intergenerational trade-offs that resulted from key policy decisions made during this forty-year period. To aid in the intergenerational analysis I differentiate between future *residents* and future *descendants* of Alberta as two distinct populations of future generations. Future residents are anyone living in Alberta at a future period regardless of their origin. Conversely, future descendants are the descendants of whomever happens to be living in Alberta at a given point in time, regardless of where they reside in the future.

The research for this dissertation finds that despite the dramatic differences in reputation between Premiers Lougheed and Klein there are remarkable commonalities. The starkest differences stem from the fact that Lougheed viewed the state as a shaper of the economy. Many of his legacies, such as the Heritage Fund and his province-building investments, benefited future residents precisely because of the role of the state in shaping the economy. In contrast, Klein sought to eliminate government involvement in the economy, preferring a more passive approach relying on deregulation and tax cuts to shape economic activity. Despite these differences, this research demonstrates that the single most consistent and troubling policy regarding Alberta's resource wealth governance is the low tax, high spending fiscal policy initiated by Lougheed and rebranded and entrenched in Alberta's political culture by Klein as the Alberta Advantage. This fiscal policy framework has become the single biggest handicap to Alberta's ability govern its resource wealth for the long-term.

This dissertation concludes with key policy recommendations. In particular, the Alberta government needs to get to a point where it can save 100% of its resource wealth. This will significantly reduce the fiscal policy challenges for the province that is overly reliant on a very volatile source of revenue and, as a result, lurches and stumbles from one oil price boom to the next. Options are then presented to allow for the use of those funds in ways that will benefit BOTH future residents – through investments in physical and human capital – and future descendants – by establishing a reliable and consistent dividend policy that will grow over time.

PREFACE

This thesis is an original work by Geoff Salomons. This thesis was funded, in part, by the Social Sciences and Humanities Research Council. Part of the research for this dissertation was featured in an article co-authored with Daniel Béland in 2020. “The Presence of an Absence: The Politics of Provincial Sales Tax in Alberta.” In *American Review of Canadian Studies* Vol. 50, No. 4: 418-435. A discussion of the key policy recommendations from this dissertation was published as on op-ed with CBC entitled “Enough of Alberta's roller-coaster. Let's save every cent of resource revenue” on April 24, 2023.

For Kiran and Ziva, my future generation.

ACKNOWLEDGEMENTS

I am nearing the completion of this chapter in my life thanks to a great many people.

My academic career was supported by four key individuals. To David Kahane, I thank you for your generous spirit and willingness to take a chance on an unorthodox applicant with an M.Div. and a M.A. Your friendship and guidance from our work on Alberta Climate Dialogue project, to introducing me to the wonderful world of fruit gleaning with Operation Fruit Rescue will remain with me. To Steve Patten, your ability to distill my rambling thoughts and ideas into clear topics of inquiry helped focus my research. To Jared Wesley, thank you for taking on this wayward student and helping push me over the line. Your friendship is greatly appreciated. I miss poker night! Finally, to Andrew Leach, your incisive mind and clarity of thought have helped me refine my own thinking, particularly as a political scientist dipping his toes in the field of economics. I look forward to our next bike ride.

Thank you to Leigh, Drew, and Kusi who I met on that initial orientation day almost 11 years ago and who shared in the collective struggle of classes, comps, and beyond. Thank you also to the many friends I made along the way: Dan, Justin, Kristjana, Mike, Emrah, Kathryn and Ron, Lisa, and Renee, your continued support and encouragement helped me keep going. Chad Cowie, you have an unbelievably big heart and a wonderfully snarky sense of humour to balance it out. I'm so grateful to have you and Dan as an honourary uncles to my girls. Megan Ciurysek, who latched on as a dear friend and never let go, your courage and zeal for life are infectious. Also, sorry again for the pig rectum incident.

Thanks to Mario Conseco from Research Co. for generously including some questions I had in polls he was running. Thanks to Max Fawcett for your friendship as well as your editing services. This dissertation is undoubtedly more coherent because of your support. Camilla Burgess, thank you for helping me discover my voice. Finally, thanks to Professor Daniel Béland who served as an intimidating discussant and chair for a some of CPSA papers I presented in 2016. You quickly became a good friend and co-author.

While completing this PhD I began a career with the federal public service in 2018. I must express thanks to the folks at Western Diversification Canada (now PrairiesCan) for taking a chance on me and quickly messing with my life plans by turning a part-time internship into a full-time career. During the past 5 years in the federal public service, I have had the fortune of working with and for many outstanding individuals – in particular, Anna Curtis at WD and Amin Asadollahi at NRCan – who have supported the completion of this dissertation in more ways than I can count, and who are now my dear friends.

I would also like to express my thanks to my Ride2Survive family. I joined this crazy group to give myself a reason to get into cycling, but what I got out of it was a whole lot more. You gave me the opportunity to participate in something bigger than myself, with the added bonus that the training helped balance my sedentary never-ending academic pursuit with

something that helped improve my mental and physical health, while striving to obliterate cancer by pedalling over mountains.

My two amazing girls have made this journey infinitely richer and entertaining. You amaze me everyday with your spirit and creativity and I can't wait to see what wonderful women you both grow up to be. To my dad and Leida, thanks for your continued prayers and encouragement. To my siblings, thanks for putting up with your annoying brat of a baby brother. I'd also like to thank my extended in-law family for welcoming this Nondette into the fold. While there are too many of you to name, know that you supported Michelle and I in more ways than you know. To Michael and Joanne in particular, my heartfelt thanks for your love, support, and ongoing encouragement. Not everyone is blessed with in-laws that they get along with so well. You have truly made me feel welcome and part of the family.

Oh, and thanks to Nina, our stubborn and obstinate COVID puppy, for distracting me from what I should have been working on at any given moment.

Finally, to Michelle, words cannot describe my gratitude for your unwavering love and support for me during this time and any attempt to do so will seem to me wholly inadequate. Nevertheless, what I can say is I would not be here today without you. You have read and edited countless pages of semi-coherent drafts, comforted me, listened with unlimited patience, and were an unrivalled advocate for me, even when I was unable to advocate for myself. It is a great privilege you have granted me allowing me to chase this dream. I can only hope the opportunity will arise so I can return the favour. You are my everything!

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LIST OF ACRONYMS

ACF – Advocacy Coalition Framework
ADM – Assistant Deputy Minister
AER – Alberta Energy Regulator
AHSTF – Alberta Heritage Savings Trust Fund
AID – Alberta Investment Division
AMPC – Alberta Petroleum Marketing Commission
AOSTRA – Alberta Oil Sands Technology and Research Authority
ARR – Alberta Resource Rebate aka Ralph Bucks
Bbl/bbls – Barrel/Barrels
CAPP – Canadian Association of Petroleum Producers
CID – Canadian Investment Division
CIT – Corporate Income Tax
CPA – Canadian Petroleum Association *(merged with IPAC to create CAPP in 1992)*
CPD – Capital Projects Division
CSS – Cyclic Steam Stimulation
EIA – Energy Information Agency
EOR – Enhanced Oil Recovery
FMS – Financial Management System
FOIP – Freedom of Information and Privacy
GCOS – Great Canadian Oil Sands
GDP – Gross Domestic Product
GRF – General Revenue Fund
IPAC – Independent Petroleum Association of Canada *(merged with CPA to create CAPP in 1992)*
MLA – Member of Legislative Assembly
NDP – New Democratic Party
NTFOSS – National Task Force on the Oil Sands Strategies
OECD – Organisation for Economic Co-operation and Development
OPEC – Organization of Petroleum Exporting Countries
PC – Progressive Conservative
PFD – Alaska Permanent Fund
PISA - Programme for International Student Assessment
PNGCB – Petroleum and Natural Gas Conservation Board
PST – Provincial Sales Tax
RESP – Registered Educational Savings Plan
ROI – Return on Investment
RRSP – Registered Retirement Savings Plan
RRT – Resource Rent Tax
SAGD – Steam-Assisted Gravity Drainage
WTI – West Texas Intermediate

CHAPTER 1: INTRODUCTION

1.1 Introduction – Setting the stage.

Alberta is the richest province in Canada, and this status is due to its vast non-renewable[1] fossil fuel resources. Yet despite this wealth (or, perhaps because of it), the government of Alberta's fiscal fortunes rise and fall with the price of oil. When the price of oil is high, government revenue rises accordingly alongside government spending. When the price of oil drops, the government runs deficits, slashes spending, and cries poverty. This phenomenon is so familiar within Alberta's political discourse that it has its own moniker: the resource revenue rollercoaster (Figure 1).

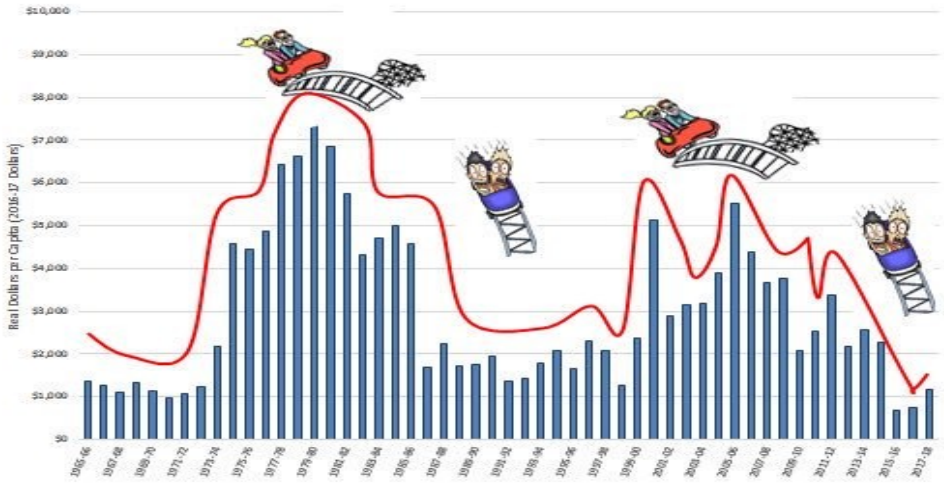

Figure 1: Alberta's resource revenue rollercoaster.[2]

[1] As will be discussed, this dissertation is interested in the consequences of resource wealth governance for both the present and, in particular, future generations. As a result, the choice to examine *non-renewable* resource wealth is an intentional one as the use of non-renewable resources by one generation precludes their use by another. However, for purely stylistic reasons I will often simply refer to resource wealth or resource revenue, even when I am referring solely to non-renewable fossil fuel resource wealth.

[2] Source: https://twitter.com/RonKneebone/status/1113953770084265984?s=20

If you mention resource wealth and future generations together to any Albertan, typically a common narrative emerges (e.g., Campbell 2013; MacDonald 2012). The first lauds Premier Lougheed as a visionary for establishing the Alberta Heritage Savings Trust Fund (hereafter the Heritage Fund), a sovereign wealth fund which saved a percentage of resource revenue between 1976 and 1986. This narrative simultaneously castigates Premier Klein as a short-sighted buffoon for buying votes with "Ralph-bucks" – a $400 cheque given to every adult Albertan – when he experienced a massive surplus driven by resource revenue in 2004.

The second part of this narrative compares Alberta's Heritage Fund with Norway's. Norway's sovereign wealth fund is currently worth approximately $1 trillion USD (Norges Bank Investment Management n.d.) despite being established approximately twenty years after Alberta's. This comparison had become so common place in Alberta and Canadian public discourse that it has been labelled "Norwailing" (Cosh 2015).[3]

Yet what is less well understood is that Alberta's fiscal policy woes are not just the result of external factors beyond Alberta's control, such as the commodity cycle of oil prices. They're also due to intentional and sustained decisions that have kept Alberta reliant on resource revenues. These decisions have consequences for both present and future generations of Albertans. This dissertation comprehensively examines the governance of resource wealth in Alberta. This includes all the ways Alberta has collected and used (saved, invested, and distributed) its resource wealth, including the shape of royalty regimes, forms of savings

[3] While the Norway/Alberta comparison is common, Fawcett (2020) outlines a number of reasons why this comparison is problematic. First, the size of reserves and relative depletion timeline are dramatically different in Alberta than they are for Norway (Norway has much shorter depletion timeline). Second, Norway is a unitary country with concentrated population while Alberta is a sub-national jurisdiction in a federation with a population more widely disbursed.

including the Heritage Fund and debt repayment, and various means of distributing that wealth through investments in human or physical capital, tax breaks, and/or direct transfers such as the Alberta Resource Rebate ("Ralph Bucks").

This dissertation asks how Alberta has governed its non-renewable resource revenue from 1971 to 2006, a timeframe that coincides with the administrations of Premiers Lougheed, Getty, and Klein. It digs into why specific decisions related to the collection and use of Alberta's resource wealth were made. It explores what are the consequences (intentional or not) of those decisions for both present and future generations. And it summarizes the lessons we can learn from Alberta's history in this policy area to better guide its fiscal policy going forward. In the end, it will provide us with a better understanding of the consequences of policy decisions pertaining to that regime for both the present and future generations.

This policy area was chosen precisely because these intergenerational consequences, implicit in many policy decisions, are inescapable. The use of non-renewable resources by one generation necessarily precludes their use by another, while incurring debt or saving revenue can place liabilities on or provide assets to future generations. But it is also a policy area that has significant consequences within generations as well. As inequality is a growing issue of concern (e.g., Piketty 2014; Stiglitz 2012; Yalnizyan 2013), the choices about the distribution of resource wealth can alleviate or aggravate existing levels of inequality.

Finally, because this dissertation examines this policy area with an intergenerational lens, it is concerned with the barriers to policy making for the long term. Alberta was chosen as a case study because it is both democratic and has an abundance of non-renewable resources. Increasing interest in long-term policy problems is primarily focused on the challenges facing

democratic institutions specifically (e.g., Garrì 2010; González-Ricoy and Gosseries 2016; Jacobs 2011, 2016; MacKenzie 2013, 2016, 2021; Shearman and Smith 2007; Tännsjö 2007; Tonn 2007; Ward 2008). As a resource abundant jurisdiction, Alberta's large concentration of wealth and capital presents additional collective action challenges for democratic governance. These issues, to be discussed shortly, fall largely under the label of petro-politics and have already been used to analyze the Alberta case (Adkin 2016; Shrivastava and Stefanick 2015).

1.1.1 Intergenerational Framework

This dissertation contributes to the broader discourse by offering both a political and intergenerational analysis of this policy area. As eminent political scientist Harold Lasswell argued, politics is a matter of who gets what, when, and how (Lasswell 1936) and that certainly applies in and to Alberta. But as Alan Jacobs has noted, more attention has gone into the what and the how and less into the when (Jacobs 2008b, 2011, 3). For that reason, an intergenerational lens is needed, one that more closely probes who benefits and who loses, both now and into the future, from the various decisions related to resource wealth governance in Alberta. By combining the question of "who" with the question of "when," this analytical framework snaps into view. Just as there are different populations within the present generation, so too there are different populations within future generations. For example, when thinking about the distribution of resource wealth intergenerationally one can conceptualize two distinct pathways that reveal different ways of thinking about who counts as a "true Albertan" or as Alberta's future generations. Lougheed himself stated in reference to need for the Heritage Fund that

Alberta's resources are "owned not just by you but by your children and grandchildren".[4] This is might seem obvious on the face of it, but digging into the question quickly reveals additional complexity, especially for a jurisdiction like Alberta that experiences a significant amount of population migration.[5] This argument was most succinctly put forward by Maclean's columnist Colby Cosh, who wrote:

> "Norway, you'll notice, is the indigenous home of a nationality. Norwegians, even those without children, perceive their oil fund as a sacrifice for their collective posterity. Alberta has awkwardly open borders and little national consciousness. As an Albertan, I cannot see the point of saving for some invader's dotage." (Cosh 2015)

He goes on to argue that future generations of Albertan's will be better off than the present generation, just as we are better off than Albertans from the 1970s. This reconceptualization of future generations is important, and it helps distinguish two ways of conceptualizing what's at stake and for whom.

The first involves thinking about future generations as *future residents*. This conceptualization views future generations as any future resident of a given jurisdiction regardless of their origin or path. Inter- or intranational migration is viewed in this frame as an acceptable inevitability, and the government's intergenerational responsibilities are to those future resident's regardless of where they were born.[6]

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[4] Provincial Archives - PR1985.0401/928 – AHSTF Election Policy 1979.

[5] See Turner (2017) for an in-depth discussion of the challenges facing those working in Alberta's oil sands, particularly those who might still maintain a home on the other side of the country (e.g., Newfoundland) and fly in to work for their weeks on.

[6] It should be noted that there is a difference between inevitable migration that will occur and the encouragement of additional migration due to the benefits of NRR wealth. For example, Alaska's dividend system only goes to residents who have been in Alaska for a year or more and includes demonstrating intent to remain an Alaskan

The second approach conceptualizes future generations as *future descendants*. This views future generations as the descendants of whomever happens to be living in a jurisdiction at a given point in time, regardless of where they reside in the future.[7] As such, if an Albertan's children moved to another province in Canada or another country, they should, or at the very least could, still benefit from Alberta's resource wealth on account of my being a resident of Alberta at this particular moment in time. While this is a legitimate way of conceptualizing future generations, it requires resource wealth to be distributed *through* the present generation to be passed on by individual households to their descendants. There is no realistic policy option which can transfer resource wealth to future descendants without it first going through the present generation. Consequently, policy options that are geared towards future descendants are often viewed to be present-oriented and not concerned with future generations at all. The corollary to this point is that for intergenerational equity to be achieved, it is up to the individuals of generation A to distribute the resource wealth to generation B and so on. To what extent this occurs is another question, and one that deserves to be asked in due course. But it is the responsibility of those individuals to ensure intergenerational equity is achieved, not the state's. Under this way of thinking about who qualifies as a future Alberta, once the money has been

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resident in the near future (Alaska Department of Revenue 2019). This reduces the incentive for people to move to Alaska in order to take advantage of the dividend system that is in place. Pro-rating the dividend amount for years of residency, would be another way. However, given the dividend ranges from $300 per year to $2000 (2015) it is unlikely that individuals are making the decision to move to Alaska solely on the basis of this dividend.

[7] A more extreme version of this conceptualization would be the descendants of people who have "always" lived in Alberta. However, reading it that way, as one can with Cosh's reference to 'invaders', risks digging into racist undercurrents and assumptions as Indigenous peoples in Alberta are undoubtedly not included in such a conceptualization despite living here much longer than European settlers. As we will see, this distinction between future residents and future descendants aligns with public, state-based saving mechanisms (Heritage Fund) vs private, individual savings mechanisms (inheritance) as a means of intergenerational transfer and so there is no need to dig into the politics of this more extreme version. For more on Alberta's political culture and how Albertans view themselves, see the work done by Jared Wesley and others at www.commongroundpolitics.ca.

transferred to members of generation A the government no longer has any responsibility in addressing intergenerational equity – at least, with respect to resource wealth distribution.

For Norwegians, there is a much greater overlap between these two competing conceptualizations of the future. But for a jurisdiction like Alberta, one with open borders, a significant amount of migration, and what Cosh described as "little national consciousness," the two conceptions are more distinct. The friction between them shows that some choices aren't merely a decision between future and present generations but rather between distinct populations of future generations. This is key for the intergenerational analysis in this dissertation.

It also serves as a useful framework to both design and evaluate policies related to this topic. From an economic perspective, both conceptions might be equally equitable intergenerationally speaking. But from a political perspective, there are distinct trade-offs concerning who benefits and who does not. Understanding the consequences of those trade-offs and explaining why some choices were made over others is a central component of this dissertation.

1.2 Literature Review

1.2.1 Alberta Resource Wealth Governance

The literature review for this dissertation covers two broad areas. The first is the substantive topic of this dissertation, Alberta's resource wealth governance. This section will review what has been written about the collection, saving, and investment of Alberta's resource wealth, as well as a quick review of the issue of revenue volatility which impacts all three areas simultaneously. It will then turn to the other theme of this dissertation, an understanding of the challenges that long-term policy making can pose for democratic governments.

1.2.1.1 Royalties

The first area of the Alberta resource wealth governance literature worth examining is the issue of royalties and rent[8] collection. This literature primarily examines whether Alberta is getting an adequate return from its resources, both by comparing Alberta to other jurisdictions (Boychuk 2010; Campbell 2013; Dobson 2015; Parkland Institute 1999) and examining Alberta individually over time (Amy Taylor et al. 2004; Amy Taylor and Raynolds 2006). These studies consistently argue that Alberta has collected an insufficient amount of rent. The reasons why will be examined in more detail in Chapter 3.

[8] Economic rent is defined as "those payments to a factor of production that are in excess of the minimum payment necessary to have it supplied" (Varian 2006, 412). In other words, it is the surplus revenue generated over and about the return required on capital investment which can be captured by governments as a revenue source without impacting company behaviour or activity (see MacFadyen and Watkins 2014, 25). In this way, rent capture is viewed as economically neutral.

This literature also includes a number of studies that examine the question of whether the Alberta government is receiving an adequate amount of rent, ones that were done in the context of the Royalty Reviews conducted by the Alberta Government in 2007 and 2016 (Alberta Royalty Review Panel 2007, 2016). Plourde (2009) provides an overview of the various changes to the royalty systems from the mid-1990s until the 2007 Royalty Review with specific attention paid to the establishment of the 'generic royalty regime' for the oil sands which will be discussed in further detail in Chapter 3. Until that time, royalty agreements were negotiated on a project-by-project basis which undermined investment in the oil sands given that companies did not have a lot of certainty regarding costs (Brett 2014). Roy (2015) provides a retrospective analysis of the consequences of the 2007 royalty changes with regard to government revenues and argues that the changes resulted in a loss of revenue rather than a gain for the province. Dobson (2015) provides a brief primer on oil sands royalties in anticipation of the 2016 Royalty Review, and Shaffer (2016) provides some insight into the technical changes that were made with the 2016 Royalty Review, one that left overall royalty rates largely the same. Finally, MacFadyen and Watkins (2014) provide a comprehensive historical overview of Alberta's oil policies and regulations, including rent collection policies.

Despite the analytical rigour in the above analyses, the question of "fair share" is inherently political, given that it must balance various trade-offs. This dissertation will go into more depth on these issues from a theoretical and empirical perspective later, but for now it's worth emphasizing that the primary trade-off facing the government is balancing the return for the owners of the resource (Albertans) against the need to encourage investment and development by private companies. Investment can be encouraged through a generous royalty

regime that leaves more profits in the hands of producers, but that can obviously result in an inadequate return for the owner of the resource, the province and people of Alberta.

The nature of that trade-off is also different for conventional oil producers and projects than it is for the oil sands developers, given different reserves available and cost factors that affect the profitability of each resource. Conventional oil in Alberta has had a few large fields such as Turner Valley in the 1930s and the discovery of the Leduc field in 1947, but much of Alberta's conventional oil is widely distributed requiring numerous wells (and supporting infrastructure) throughout the province. The oil sands, on the other hand, require a massive up-front investment of capital for both mined and *in situ*[9] (Latin for in its place) projects, along with much longer waits for a return on investment and higher levels of operational risk for the companies. That said, the significant quantity of reserves in the oil sands means they offer a near infinite amount of resources to extract in a finite amount of time, especially as the world looks to transition from fossil fuels. What constitutes a "fair" share in that context is different than if the resource was much scarcer.

Finally, the question of "fair" is always situated in the present. It is a question of fairness between the owners of the resource (Albertans) and the producers of the resource (oil companies) for the value extracted from the resource *today.* Little consideration is given on the question of fairness for the Albertans of tomorrow. This dissertation seeks to situate that discussion of fairness along a longer temporal axis.

[9] The primary *in situ* extraction method is called Steam Assisted Gravity Drainage. Two horizontal pipelines are drilled into the bitumen and perforated. The one pipeline is injected with steam which melts the bitumen in the ground and allows it to drain into the second pipeline below which then extracts the bitumen and allows the bitumen to be processed for commercial use. The development of this technology was in large part due to R&D investments by the Alberta government through the Alberta Oil Sands Technology and Research Authority (AOSTRA) (Hastings-Simon 2019).

1.2.1.2 Saving and Investment

The second area of the Alberta resource wealth governance literature we must examine is the issue resource wealth use. Once collected the resource wealth can be distributed immediately, invested on projects with a longer-term return, or its use can be deferred by saving it.[10] The literature on this topic covers several questions. The first is a more prescriptive one: how much of Alberta's non-renewable resource revenue *should* the government save? When the Heritage Fund was first created in 1976, a 30% savings rule was adopted based primarily on political considerations (Collins 1980), only to be reduced to 15% in 1983 and then cancelled altogether in 1987 as resource revenue dropped and provincial deficits grew. Some studies have gone so far as to recommend a specific savings amount of 50% of resource revenue (Gibbins and Roach 2006) to 100% (Poelzer 2015). The specific rate of savings is itself dependent upon a variety of factors. Some of these factors are more technical (such as the expected decay of resource revenue over time, the expected rate of return on investments or the expected overall growth of the economy), but many are moral or value judgements (such as the extent to which the future is discounted or the number of generations into the future for which one is accounting) (Scarfe and Powrie 1980). If one considers future generations in perpetuity, then a 100% savings rate is probably required. If one only considers a couple generations into the future, then some consumption of the resource revenue principal is more acceptable.

Other studies have offered counter-factual 'what if' analyses and asked how much Alberta could have saved if it had continued putting away 30% employed some other savings

[10] To be fair, these conceptual boundaries are not as clean as I've outlined as even funds that are saved are still invested in something.

rule (Baena, Sévi, and Warrack 2012; Hill, Emes, and Lafleur 2021; Murphy and Clemens 2013; Ryan 2013; Warrack and Keddie 2002). The consensus among these analyses is that Alberta has saved relatively poorly, and that the province would undoubtedly be better off had it saved more of its resource revenue.

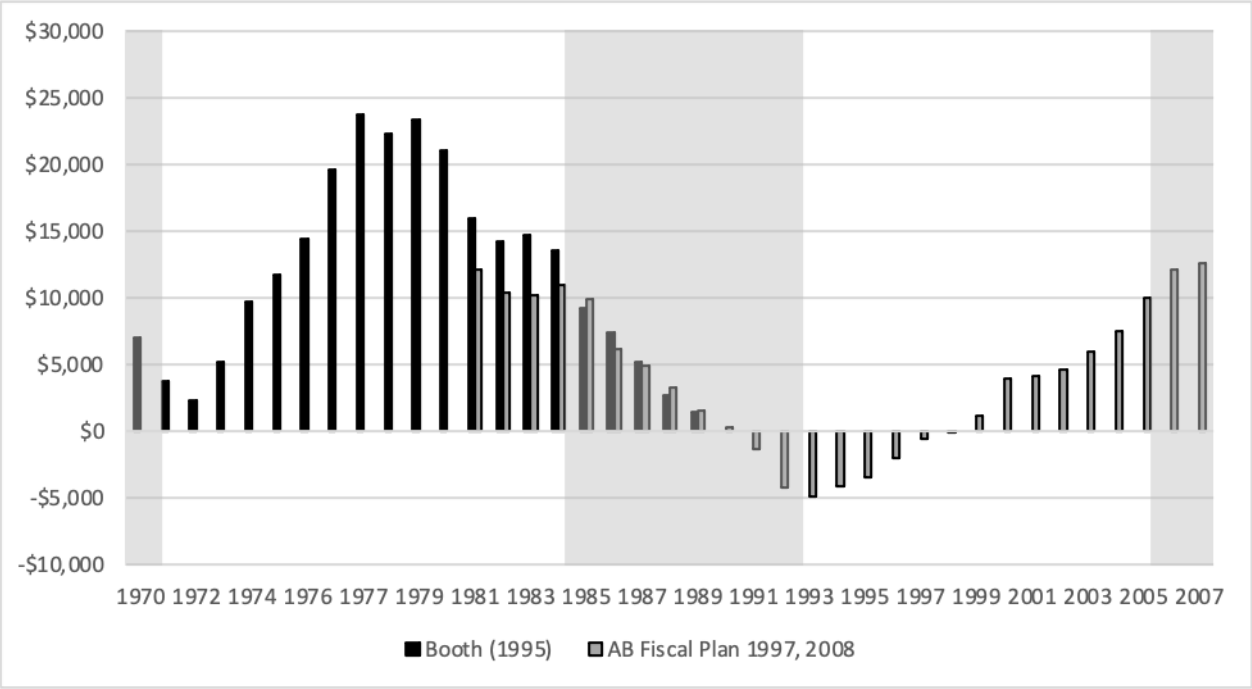

Figure 2: Alberta Net Financial Per Capita Assets

A quick look at Alberta's per capita financial assets supports this conclusion (Figure 2). According to Ascah (2013), net assets increased dramatically under Lougheed until 1981 at which point they declined for the remainder of Lougheed's administration as well as the duration of Don Getty's administration and the beginning of Klein's. At that point, the budget cuts implemented by the Klein government along with rising resource revenue began creating a surplus for the government and the net asset position grew steadily for the remainder of Klein's tenure. This issue will be explored in more depth in Chapter 4.

The other question this literature asks is what government ought to do with the money after it has been saved. This is a different question than what to do with the money while it's being saved, even though in reality these two positions are blurred. Viewed in this way, saving in the Heritage Fund defers spending *to* future generations in much the same way that incurring debt pulls forward spending *from* future generations. But the question remains as to what to do with the money while it is sitting in the Heritage Fund, as well as when it's pulled from the Heritage Fund (whether it be part of the principal or accrued interest). Broadly speaking the options are to make investments that are intended to seek a financial return or subsidize some activity and decide whether to invest within the province or Canada or globally. At the beginning, the Heritage Fund had financial investments in Alberta and Canada (mostly lending to other provinces) and other quality of life investments which will be discussed in more detail in Chapter 4. Today, the investments are directed more specifically to global equity markets. However, the question remains as to what to do with the funds in the future, whether that is spending part of the principal or just the interest accrued in the fund.

McMillan and Norrie (1980) outline three possible options for the Alberta government on how to invest its resource wealth whether: province-building through economic diversification investments, distribution through the tax system, and distribution through a dividend system. The history of Alberta resource wealth governance includes all three of these options at one time or another, and each option had specific consequences. Lougheed and Getty prioritized province-building initiatives (Pratt 1977; Richards and Pratt 1979) despite various political challenges (Stevenson 1980), while in 2005 Klein's government provided a one-off dividend in the form of a $400 "Alberta Resource Rebate". Despite this contrast, all three premiers transferred the lion's share of the revenue through the tax system. Indeed, Lougheed established the low tax, high

spending regime was fundamentally underpinned by resource wealth, one that Klein would later rebrand the "Alberta Advantage." But this "advantage" is also the primary source of Alberta's ongoing (and longstanding) fiscal challenges, as it keeps Alberta continually reliant on resource revenue to balance its budget.

McMillan and Norrie's work helps categorize the policy recommendations over this period. Whether they're described as 'province building' (Pratt 1977) or 'industrial diversification' (Drugge and Veeman 1980) or more recently 'economic diversification' (e.g., Gibbins and Roach 2006), the recommendations are remarkably similar. Indeed, present day calls for investments in 'value-added' industries, such as refineries, could also be included under this heading.

However, the creation of such industries, particularly those tied to petroleum, would not result in economic diversification. Instead, they would rather make the provincial economy, and thus the Alberta government's revenue, even *more* reliant on oil and gas wealth by tying more components of our provincial economy to a single commodity. Others, like Kneebone, McKenzie, and Taylor (2004), argue that economic diversification is not the province's job but rather the market's.

'Province building' can also take other forms, particularly investment in physical capital (infrastructure) or human/intellectual capital (education, R&D). As part of a series of studies on Alberta resource wealth governance (Gibbins and Vander Ploeg 2005; Gibbins and Roach 2006; Roach 2007), the Canada West Foundation asked what Alberta should do with its surpluses in a debt free environment. The responses are included in its 2007 report *Alberta's Energy Legacy* (Roach 2007). These include investments in various forms of education or R&D (Carlson 2007;

Piper 2007; Yedlin 2007), infrastructure such as high-speed rail links (Stenson 2007), investment in green technology and intellectual capital (Sharpe 2007), green infrastructure (Gillespie 2007; Miller 2007), investments in preventative health care (Hawe and Shiell 2007), and investments in culture and the arts (van Herk 2007). All of the chapters in this Canada West Foundation report save two – Warrack (2007) which discusses a potential dividend policy and Gartner (2007) which provides an overview of the various government funds – can legitimately fall under the label of 'province building'.

Others advocate for a dividend system like the one in Alaska (e.g., Murphy and Clemens 2013; Warrack 2007). These recommendations typically emerge from more right-wing proponents and make arguments that fit within an overarching ideological framework that suggests individuals are better suited to make spending decisions than government, or that government or bureaucratic management will result in waste or inefficiencies. They also tend to employ a conceptualization of resource ownership that is individualistic rather than collective. Despite the relevance, questions of who benefits are typically set aside. For example, in his overview of the Alaska Permanent Fund, Scott Goldsmith argues "one of the most challenging issues surrounding the PFD [Alaska Permanent Fund dividend] is the question of who should benefit from the petroleum wealth of the state, and the extent to which the PFD targets those beneficiaries. This involved considerations, among many, of intergenerational equity and of who is a "true Alaskan." I leave that discussion to another article" (Goldsmith 2002). This dissertation, by explicitly looking at future residents vs future descendants, explores these kinds of questions.

Few, however, have explicitly recommended distributing resource wealth through the tax system. Most recommendations along this line first demand substantial savings in the short term

in order to have a sizable fund from which to draw income in the long-term. For example, Jean-François Wen (2002) tried to calculate how much savings would be required to completely eliminate Alberta's personal income taxes. Following the most aggressive scenario, Wen argues that such a feat could be accomplished in just 15 years given the economic conditions and assumptions about the future that existed in the year 2000. Unfortunately, low oil prices and the 2008 financial recession significantly altered many of those assumptions.

The government of Alberta has also, at times, taken a more proactive approach to resource wealth governance. It established the Alberta Financial Investment and Planning Advisory Commission in 2007, chaired by noted economist Jack Mintz. The recommendations from that report (2007) include a number of issues already discussed thus far, such as substantial savings (the report recommends a savings goal of $100 billion in the Heritage Fund by 2030), consolidation of various funds, increased transparency and stability of Alberta revenue savings over time, and clear and transparent allocations of funds when necessary.

Finally, as part of the literature review on savings and investment, there's the Canadian Public Policy journal issue published in 1980 that was dedicated to the Heritage Fund. Some of the articles relevant to the discussion about Alberta resource wealth governance have been already mentioned. Other articles discuss issues less relevant to our immediate concerns in this dissertation, but are nevertheless related to aspects of the Heritage Fund such as federal-provincial political challenges (Courchene and Melvin 1980; Simeon 1980; Stevenson 1980), effects on capital markets (Kniewasse 1980), investment fund diversification (Mirus 1980), democratic accountability and executive discretion (Pratt and Tupper 1980), along with comments on each of those articles (Cloutier, Mansell, and Vanderkamp 1980; Engelmann,

Scott, and Wilkinson 1980; Goldsmith and Helliwell 1980; Grant and Jarislowsky 1980; Hartle, Smiley, and Thorsell 1980).

1.2.1.3 Revenue Volatility

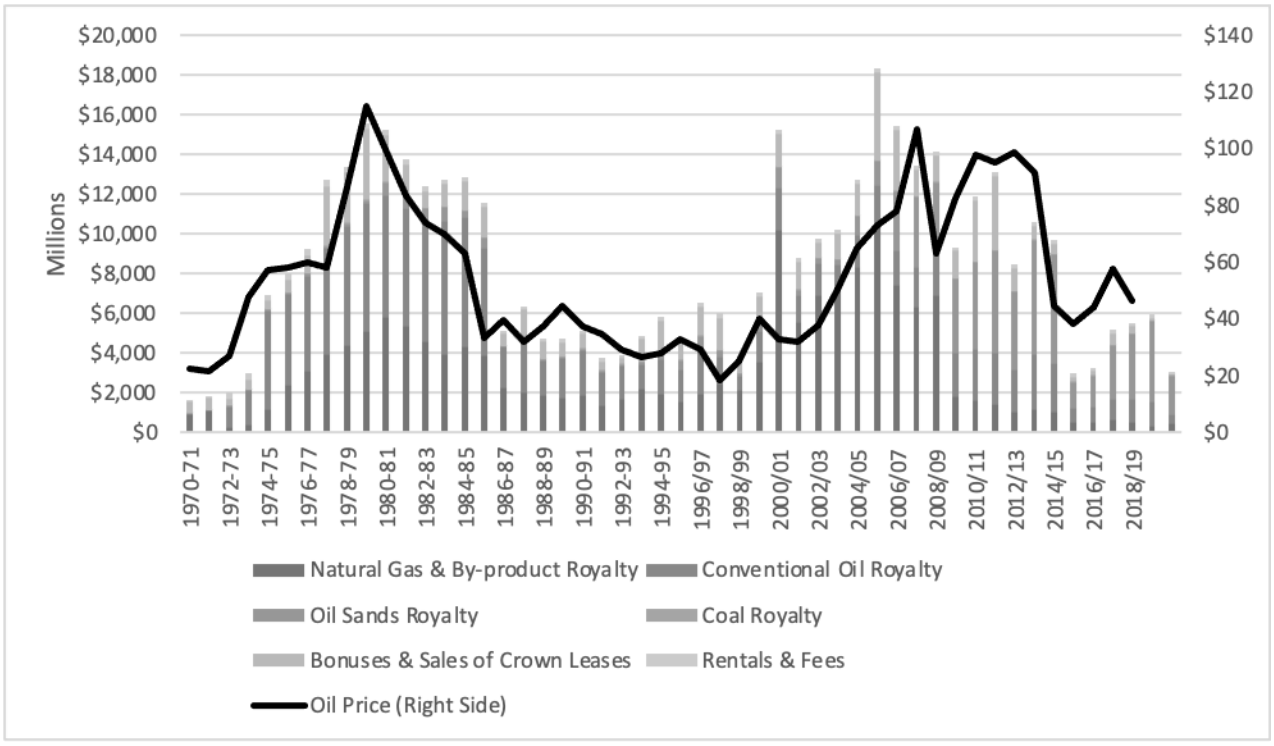

Figure 3: Alberta Historical Resource Revenue 2019$. Source: Alberta Revenue Workbook, BP Statistical Review 2019.

Revenue volatility is the policy problem that has most preoccupied the resource wealth governance literature, and the history of Alberta resource wealth governance demonstrates the challenges of not attending to this concern. A look at resource revenue over the past 40 years, minus the rollercoaster from Figure 1, illustrates the wildly volatile nature of non-renewable resource revenue (Figure 3).

Oil revenue increased dramatically during the two oil shocks in the 1970s only to collapse during the 1980s. This collapse in resource revenue resulted in a number of deficits, even as the Getty government worked to restrain spending (Lisac 2004). But that apparently

wasn't enough for the Alberta public, given that Klein's election in 1993 was based on a promise to cut spending by 20% across the board. It was implemented just as prices and resource revenue began to rise again resulting in the elimination of the deficit two years ahead of schedule and the debt a few years after that.

A number of the publications concerning revenue volatility were released in the period between 2002 and 2006, when the debt was nearly eliminated and the government was receiving record amounts of revenue (Gibbins and Roach 2006; L. S. Wilson 2002). The worry then was that the pattern would repeat itself and spending would increase at an unsustainable manner, only to have the revenues drop out once again. Others were published more recently as spending rose and little was done to address the growing fiscal gap between revenue and expenditures that non-renewable resource revenue was still filling (Bower, Harrison, and Flanagan 2013; Emery and Kneebone 2009, 2011; Kneebone 2015).

From a fiscal policy perspective, the central concern in the literature regarding revenue volatility is the effect it has on government spending and, consequently, on the economy as a whole. Businesses prefer to operate in a predictable environment. Unpredictable swings, even if in their favour, make long-term business planning difficult. If revenue drops result in corresponding cuts to government spending this has implications for the economy as a whole as it can exacerbate the boom-and-bust cycle.

A more prudent (but difficult) approach is to find ways to dampen the highs and the lows of government revenue, something that can be accomplished through saving. This requires meaningful changes to both the revenue and expenditure sides of the provincial budget ledger. On the revenue side, having more predictable sources of revenue would help better support

government spending initiatives. On the expenditure side, using spending to offset the 'bust' periods could help blunt the inevitable lows of the commodity cycle (Budnevich 2003; Hou 2006). For example, by spending more on infrastructure projects during downturns when labour is cheaper and more readily available, the government can create a win-win scenario for itself and the public. Such an approach would allow infrastructure to be built more cheaply over time while also maintaining construction work when private sector activity is reduced. As will be discussed throughout this dissertation, this is more easily said than done. Significant pressure is put on governments experiencing windfall revenues to lower other taxes and increase spending on areas that may have been viewed as neglected during leaner periods, particularly infrastructure. And, as Kneebone (2005) rightly points out, it is much easier for governments to increase spending than it is for them to cut spending.

With regards to alternative government revenue sources, it is surprising how little has actually been written over the years regarding a sales tax (Ascah 2022; Salomons and Béland 2020) given how often it's talked about. Alberta is the only province in the country without a sales tax and that fact has been entrenched and celebrated within the Alberta psyche as a core component of the "Alberta Advantage". Given that Alberta has gone through several boom-and-bust periods over the years, and given the general support by economists for consumption taxes over other forms of taxation such as income tax (McKenzie 2000), this is at least a little perplexing. Suggestions about the creation of one have usually been made tangentially and not ever taken too seriously.

For example, Bower, Harrison, and Flanagan (2013) focus on addressing Alberta's revenue gap in ways that explicitly avoid the sales tax option. They prefer instead to reinstitute a progressive income tax (Alberta had a flat income tax of 10% for all income brackets since 2001

until the NDP introduced progressive income tax brackets after their electoral win in 2015) and adopt marginal increases to corporate tax rates, or 'cut corporate tax breaks', as they frame it.

Other studies show, again and again, how overly reliant Alberta is upon non-renewable resource revenue. Plourde and Reid (2002), for example, show how the government surplus at the time was entirely dependent on record resource revenue, particularly from natural gas, which wen from generating $2.4 billion in the 1999/2000 fiscal year to $7.2 billion in the 2000/2001 fiscal year (Oduro 2018). Similarly, Ronald Kneebone has written a number of articles detailing Alberta's "fiscal gap," the distance between government revenues and expenditures that does not include non-renewable resource revenue (Emery and Kneebone 2011; Kneebone 2015). They show how consistently Alberta has been relying on overly volatile non-renewable resource revenue to fill this fiscal gap. This dissertation will help explain why.

1.2.2 Challenges of Long-Term Policy Making

At its core, this dissertation is concerned with the ability of a resource abundant and *democratic* jurisdiction to enact long-term policies. Let's unpack why each of those three terms are relevant beginning with the notion of the long-term. I've already described how I am using the term "intergenerational" to point to the simultaneous policy impacts on both present and future generations. But how one defines "long term," particularly the duration one ascribes to it, is also important. One fundamental distinction is between *intra*generational and *inter*generational policies. This distinction marks the difference between overlapping and non-overlapping generations, both of which are 'long term' (for a more in-depth discussion of this see Mackenzie (2013, 8ff) and Jacobs (2011, 71fn25)). This distinction is important because it highlights the extent to which self-interest may play a role in decision making. *Intra*generational policies are

those in which the decision-makers might reasonably expect to benefit, such as the creation of a pension fund that they will be able to use upon retirement. *Inter*generational policies are decisions for non-overlapping generations, and, consequently, their creation would stem from a more wholly altruistic or principled concern for future generations, particularly if the policy decision imposes costs on the present.

This dissertation's interest in long-term policy making is primarily focused on *democratic* institutions because the complexity of collective decision-making processes in democratic institutions, to say nothing of the circumscribed nature of their political horizons, does not often lend itself to considered long-term planning. Non-democratic jurisdictions, which may have simpler decision-making processes (e.g., the will of an authoritarian leader), often have more pressing concerns that typically trump any concern for future generations. In this sense, intergenerational concerns are often classified as a post-materialist value (M. Klein 2011).

The challenges of long-term policy making in democracies can be separated into two distinct categories: policy-making challenges and political challenges. Policy-making challenges stem from the inherent inadequacy of specific tools, techniques, or methods policy makers employ to cope with the uncertainty of the future. These challenges include difficulties in forecasting or modeling future conditions and the psychological heuristics we apply to cope with that, the potential for policy instruments to have unintended consequences, and the inevitable necessity of using policy mixes (with objectives and instruments overlapping with other policy problems) to deal with complex policy problems.

Political challenges arise from democratic decision-making institutions, systems, or processes, which may undermine, inhibit, or provide disincentives to long-term thinking. These

challenges can include myopic citizens with high future discount rates, short electoral cycles and resulting changes in government, the inability or unwillingness of democratic governments to act proactively, and the role of powerful economic actors in the policy-making process.

Finally, turning to the role powerful economic actors, resource abundant jurisdictions will have much more well-resourced economic actors as the lucrative nature of resource development concentrates significant amounts of wealth in the hands of a small number of easily organized actors in comparison to other jurisdictions where economic activity is less concentrated in both scale and scope. In policy areas where the interests of these well-resourced economic actors are at odds with the objectives of the government, sustained political pressure can be mounted by these actors to undermine impact of policy changes much more effectively than the dispersed interests within civil society.

1.2.3 Policy Challenges

1.2.3.1 Uncertainty

The first significant policy challenge any long-term solution faces is the *uncertainty* the future brings. While stating that the future is uncertain is not overly controversial, it is the combination of both uncertainty of the future combined with certain psychological tendencies to cope with that certainty that makes it doubly problematic. Tetlock's (2005) work has been critical in examining these tendencies and how psychologically we are under-equipped to deal with uncertainty. We rely on false patterns (we see/create constellations to make patterns of randomness), apply the availability heuristic (if I can think of an instance, it must be common), suffer from confirmation bias (rely on evidence to support pre-existing beliefs) and groupthink (if everyone believes it, it must be true), and have an aversion to uncertainty. Tetlock's research

also shows how people have a tendency to believe or trust simple bold predictions rather than more nuanced and qualified predictions, even if the accuracy of the latter far outperforms the former (Gardner 2010; Tetlock 2005). Typically, these bold predictions attempt to forecast the future by extrapolating current trends, and so if oil prices are climbing, they will continue to do so (e.g.,, Rubin (2011, 2012) predicting $200/barrel); if the global population is increasing, it will continue to do so (Ehrlich 1968).

These biases can negatively impact government decision-making if they go unquestioned by decision makers. There are numerous ways in which individuals and organizations can help check their future biases including risk assessments (Shapiro and Noe 2015), scenario building (Schwartz 1996), and strategic foresight (Hines and Bishop 2015). What they have in common is the development of strategies to challenge assumptions, question their thinking, and step back to try and look at the big picture (Tetlock and Gardner 2016).

1.2.3.2 Unintended Consequences

The second policy challenge is coping with *unintended consequences*. Unintended consequences can arise because the complexity of the world is such that even marginal changes can have significant impacts over time. This insight was foundational to what is now known as 'chaos theory' (Lorenz 1972, 1995). Similarly, political scientist Paul Pierson describes this issue as "slow moving, cumulative effects" which can easily go undetected until it is too late (Pierson 2004, 90ff).

Unintended consequences can also occur if one thinks linearly in or about a non-linear world. One example in economics is the differentiation between statutory and economic incidence of a policy (generally referring to a tax but not always). The statutory incidence is the

entity legally required to pay or benefit from a given policy, while the economic incidence of a policy is who *ultimately* pays (Rosen, Wen, and Snoddon 2012). If a tax is put on large corporations because they are deemed to be too profitable and 'not paying their fair share', that is the statutory incidence of the tax. But if the corporation just turns around and increases the prices for its goods, then the economic incidence of that tax is the consumers. Without understanding the connections policies have within the larger framework of internal governance or economic realities, unintended consequences are bound to occur.

In an increasingly complex world, policy problems are often addressed not by a single instrument to a single problem (the "Tinbergen Rule": "for each policy objective, at least one policy instrument is needed") but by a mix of policies working collectively to achieve some objective (Howlett 2019; del Rio and Howlett 2013). Moreover, those policy mixes for one policy problem or area undoubtedly overlap with mixes for other policy areas.

This is certainly the case for fiscal policy as governments use budgets as the primary policy tool for many, if not most, of their policy problems. Mixed policies are worsened by long time horizons as priorities of government inevitably change, and all the more so when fiscal policy is the focal point of government agendas (such as when deficit reduction became the top priority in Alberta under Klein). Over time policy mixes can morph as they are stretched or forced to attend to issues to which they were not designed (Rayner, Howlett, and Wellstead 2017).

1.2.4 Political Challenges

Alongside these policy challenges, there are also several political challenges that decision-makers must navigate. While inevitably linked to the policy challenges described above, these challenges specifically arise from the nature of democratic systems of governance.

1.2.4.1 Myopic Voters

The first political challenge for long-term policy making is that the preferences of voters may overly discount the future. Discounting rates determine how much an actor (collective or individual) values a unit of utility now over a unit of utility in the future.[11] A pure utilitarian might argue that both should be treated equally, and thus future utility should not be discounted. But actors discount at varying rates for a variety of reasons, and research on the topic is mixed (Jacobs and Matthews 2012). We do know that individuals have what Janna Thompson (2009a, 2009b) refers to as 'lifetime transcending interests' such as concern for grandchildren, individual legacies, and so on. Yet an individual may simply prefer one unit of utility now over one unit of utility in the future (pure time preference) or may be impatient to the extent that they prefer far

[11] This issue of discounting is itself a highly moral and political question. William Nordhaus (2008, 2013), a renowned scholar who models the costs of climate change mitigation, assumes a discount level of 4% based upon the assumption that the future will be better off materially than the present and so we discount in order to put generations on an equal level, much the same way we convert costs between years to a common dollar amount in order to account for inflation (Baum 2009). This discounting level is often defended by a "descriptive approach" which argues that we should calculate the discount rate based on how people actually discount the future. Proponents of this approach find it preferable to a "prescriptive approach" where analysts impose their own moral judgment of what the discount rate *should* be. However, the "descriptive approach" still imposes its own moral judgment arguing that the discount rate *should* be equal to what people typically use (Caney 2008). Other ethical theorists balk at discounting altogether, arguing from a human rights perspective that the life of a future individual should not count for less than the life of an individual in the present generation (Davidson 2014). In addition, discounting is predicated upon several assumptions. First, that growth will continue and that the future will be more well off, which is an assumption that is called into question if climate change becomes as disruptive to economic systems as is predicted. Second, that climate change adaptation and mitigation are financially commensurable (Neumayer 1999, 2007). This latter assumption is the most dubious, as mitigation costs are significantly cheaper than adaptation, although the former will get more expensive the longer we delay and the more we allow the global climate to be changed.

less utility now over far more tomorrow. Individuals also have cognitive biases which make them more averse to potential losses over potential gains (Appelt, Hardisty, and Weber 2011). These issues are particularly integral to discussions of climate change (Neumayer 1999, 2007)

Discounting the future is a legitimate part of understanding intergenerational equity. If we can confidently assume that economic growth will continue into future, then future generations will be financially better off than the present. In such a scenario, extra consumption now at the expense of future generations that will be financially better off is a means of achieving intergenerational equity. This is why a government incurring debt is not necessarily intergenerationally inequitable. If, however, we expect future generations will *not* be measurably better off then the discounting rate should be reduced or possibly even set at a negative (meaning the present generation should save for the benefit of future generations to compensate) in order to achieve intergenerational equity. Discounting, from a policy perspective, is thus integrally linked with the policy challenge of uncertainty. It remains a political challenge because voters apply a discounting rate in how they express their preferences and/or vote, regardless of whether they do so consciously or not.

Separately, voters can also be myopic in how they reward governments. Research by Healy and Malhotra (2009) shows how voters reward elected officials for disaster relief spending over disaster preparedness spending, despite that fact that proactive disaster preparedness spending saves $15 in future damage for every $1 spent.

1.2.4.2 Short Electoral Cycles

The second political challenge for long-term policy making is the fact that short electoral cycles incentivize short-term thinking (Hovi, Sprinz, and Underdal 2009; MacKenzie 2016). As

such, politicians have an incentive to introduce or prioritize policies or projects with short-term, tangible benefits (Garrì 2010; Kavka and Warren 1983). Infrastructure is a good example. A government announces funding for a new infrastructure project, such as a bridge, and chances are that bridge will be completed or at least near completion by the end of their term, allowing politicians to point to that project as a tangible outcome of their governance. Policies with a long-term benefit are more difficult for politicians to implement, on the other hand, because they will have little to show for their efforts when election time comes around. Moreover, this disconnect also concerns the distinct temporal profiles of the problems governments face. Paul Pierson's book *Politics in Time* notes how policy problems have distinct temporal profiles combining the short- and long-term time horizons of both causes and effects (Table 1).

		Time Horizon of Outcome	
		Short	Long
Time Horizon of Cause	Short	I (tornado)	II (meteorite/extinction)
	Long	III (earthquake)	IV (global warming)

Table 1: The Time Horizon of Different Causal Accounts (Pierson 2006, 81).

1.2.4.3 Collective Action Problems and Concentrated Interests

A third political challenge is the collective action problems that arise from the uneven distribution of policy impacts and the resulting uneven distribution of political interests. Policies can have costs and benefits that are either concentrated or dispersed, and policies with dispersed or intangible benefits but concentrated costs are the most difficult to implement owing to the logic of collective action (Olson 1965). A small group of actors who will potentially bear the burden of those concentrated costs have a strong interest and greater ability to organize opposition to such policies, when compared to the dispersed benefits accruing to the public (overall global emission reductions). This issue is only exacerbated when we include longer

horizons into the mix, and the benefits and costs are unevenly distributed over time as well. Climate policies with concentrated costs on oil and gas industry in the present with benefits dispersed over time to future generations is the quintessential example (e.g., Underdal 2010).

Connected to these collective action problems is the differing levels of resources actors have, and the resulting power that large economic interests wield over the policy-making process in democratic systems. Originally, scholars understood the state as the neutral arbiter between a multitude of conflicting and contradictory interests within society (e.g., Dahl 1973). This pluralistic account of the state made certain assumptions about the relative strength of those interests. But those assumptions have proved incorrect. A few short years after Dahl's *Polyarchy* book was released, fellow pluralist scholar Charles Lindblom (1977) argued that business interests in particular held a "privileged position".

According to Mackenzie (2013), this "privileged position" is a potential impediment to long-term governance. His succinctly captures the powerful economic actors argument with the following syllogism: "*if* economic actors are motivated by short-term profit gains, *and* democratic processes are dominated by the interests of this group, *then* democratic outcomes will reflect the short-term interests of powerful economic actors and not interests of the public as a whole" (MacKenzie 2013, 44). This influence can operate *directly* through donations to specific parties and candidates that would implement favourable policies and by lobbying government or it can operate *indirectly* by these interests having some control over economic conditions. If the government implements policies that make the economic environment less profitable it can result in capital flight and fewer jobs. John Dryzek states the indirect influence held by economic actors:

> Any state operating in the context of such a system is greatly constrained in terms of the kinds of policies it can pursue. Policies that damage business profitability — or are even perceived as likely to damage that profitability — are automatically punished by the recoil of the market. Disinvestment here means economic downturn. And such downturn is bad for governments because it both reduces the tax revenue for the schemes those governments want to pursue (such as environmental restoration), and reduces the popularity of the government in the eyes of the voters. This effect is not a matter of conspiracy or direct corporate influence on government: it happens automatically, irrespective of anyone's intentions (Dryzek 1995, 15).

Looking specifically at the case of Alberta, concerns about this influence are particularly acute for a resource abundant economy. A growing number of studies have specifically looked at the negative impact the oil and gas industry has had on Alberta's democratic institutions (Adkin 2016; Carter 2011; Shrivastava and Stefanick 2015; Taft 2017).

Governments of resource abundant political economies can inadvertently exacerbate this problem by becoming fiscally reliant on resource revenue. As they do so, these governments potentially risk becoming a petro-state – a state that tends to become a rentier state that replaces statecraft [e.g., effectively conducting government affairs] with oil rent collection, thereby weakening state capacity (Carter 2011; Karl 1997). Instead of governing in the public interest, governments instead feel the need to cater to the oil industry or risk the cancellation of significant projects and foregoing their potential oil revenues. Angela Carter, commenting on petro-state issues in Alberta and Newfoundland, writes:

> One important shift at work here is how the state's dependence on various sources of taxes, particularly personal income taxes, changes to a dependence on resource rents. This can lead to an erosion of a strong, broad-based tax system and thereby alter governments' lines of accountability. For Shaxson, oil money creates "misplaced lines of accountability" (Shaxson 2007, 1129): rather than being focused on accountability to citizens, the state is focused on the oil industry. (Carter 2011, 12).

1.2.4.4 Non-presence of Future Generations

The final political challenge for long-term policy making is the absence, or non-presence, of future generations in the democratic process. If "decisions are made by those who show up"

(Nash 2012) then future generations are perpetually disadvantaged by the inability to do so. As Mackenzie notes, this is a particularly acute problem for democracies in part because they operate on the principle that those affected by decisions should have a hand in their making, also known as the "all affected principle" (see also Goodin 2007; MacKenzie 2016; Tännsjö 2007). Consequently, *intergenerational* policies are extremely difficult to implement because they deal with non-overlapping generations. In contrast, *intragenerational* policies are easier to adopt precisely because the actors adopting such policies could stand to benefit from them.

1.2.4.5 Time inconsistency: A policy and political challenge

Finally, there is the problem of time inconsistency. First identified by Nobel Prize winning economists Kydland and Prescott (1977), this problem arises when "optimal choices at one point in time may be at odds with optimal choices at future points in time" (Hovi, Sprinz, and Underdal 2009, 21). While Kydland and Prescott's article was written as a critique of optimal control theory in economics, it highlights two parallel but distinct issues for long-term governance.

As a policy problem, time inconsistency deals with the uncertainty of future conditions where future conditions will undoubtedly be different (better or worse) than expected at the point of decision (Kydland and Prescott 1977). As a political challenge, it refers to the possibility that an eventual change in government in democratic systems may renege on the commitments of the previous government (Hovi, Sprinz, and Underdal 2009, 22). To achieve long-term policy objectives governments must remain flexible enough to respond to inevitably changing conditions, but they must also remain consistent enough such that future decision makers remain committed to the logic of the original policy choice.

Taken together, these policy and political challenges present some very significant obstacles for elected officials and policymakers to overcome, lest they succumb to short-termism. Yet it is also important to note that these challenges are not definitive. The bureaucracy is an institution designed to bring consistency and stability to public administration and counterbalance the instability that comes with an elected government. Voters are not universally myopic and can have 'lifetime transcending interests' (J. Thompson 2009b), through concerns for personal future generations such as grandchildren or more general concerns about legacies. Campaign finance laws and strict regulations around lobbying can lessen the influence of powerful special interests. And numerous proposals exist to try and better incorporate the interests of future generations in the democratic process despite their non-presence (Ekeli 2005, 2009; Hiskes 2008; Johnson 2008; Mank 1996; D. F. Thompson 2010).

That's the good. The bad is that there are significant institutional, psychological, and systemic biases which can provide powerful incentives for short-term thinking, ones that come at the expense of the long-term. Overcoming these biases and barriers takes significant leadership and political will. More comprehensive institutional changes, the primary recommendations emerging from the literature on long-term governing (e.g., González-Ricoy and Gosseries 2016; MacKenzie 2021), can also be an option.

1.3 Theoretical Framework, Methodology & Methods

Given the exploratory nature of this dissertation, it is necessary to outline a theoretical framework that can guide the analysis of the various policy areas at both a macro and micro level while still connecting with the more specific challenges to long-term thinking identified above. I also require a theoretical framework that examines policy change at a systemic level, rather than being overly focused on individual instances or examples of policy change. Finally, my theoretical framework needs to help identify the ontological and epistemological assumptions that are contained within this dissertation. The theoretical framework I employ is a combination of the policy cycles framework with a policy regime framework outlining the interests, ideas, and institutions that impact policy change (Hoberg 2001; Howlett, Ramesh, and Perl 2009; May and Jochim 2013).

1.3.1 Policy Cycles

The policy cycles framework *conceptually* differentiates between the various steps of the policy-making process in order to simplify and structure the analysis. While criticized for its simplicity (Sabatier 1991, 2007), it is that simplicity which provides its utility as an analytical framework. It allows the researcher to walk through the complicated morass of the policy process and impose some semblance of order upon it, while still knowing full well that the broader reality is much more complex than the picture they've taken. As Hoberg notes (2001, 4), this framework emerged at a time when policy studies were more focused on describing and analysing policy change, whereas more emphasis is now placed on causal mechanisms and explaining policy outcomes. For this dissertation, a descriptive analysis is an appropriate component because my research is not explaining a single policy outcome but a whole complex

system related to Alberta's resource wealth governance to understand the consequences of those policy changes over time.

The policy cycles framework generally consists of five stages:

1. Agenda setting - how problems come to the attention of government
2. Policy formulation - the development of policy alternatives
3. Decision making - the adoption of a particular course of action or inaction
4. Implementation - putting the policy into effect
5. Evaluation - assessing the consequences of the policy through monitoring and analysis (Hoberg 2001, 4; Howlett, Ramesh, and Perl 2009, 11).

This framework is helpful for the ensuing analysis, not because I intend to systematically walk through these steps for every single policy change under investigation but because it will provide me with a frame of reference to guide the discussion of the policy-making process. In some cases, I am investigating a specific decision point, while in others the issue might be a question of implementation, or the narrowing of options at the policy formulation stage. In any case, each stage brings with it a specific set of circumstances and considerations that are important to highlight. For an exploratory project such as this, the policy cycles framework helps provide a way of clearly identifying the objectives of actors operating at a given stage.

This framework is also helpful because it helps us better understand the cyclical nature of the policy making process. The policy feedback literature highlights the temporal dynamics that can emerge from various policy changes resulting in negative feedback or positive 'feed-forward' loops (Jordan and Matt 2014, 231; Schneider and Sidney 2009, 103). The resulting effects of policy changes can ultimately shape the politics surrounding them. In other words, "new policies create a new politics" (Pierson 1993, 595; Schattschneider 1935, 238). This is something we witness in the Alberta case, as the tax regime established by Premier Lougheed

and branded as the "Alberta Advantage" by Premier Klein has made the idea of deploying fiscal policy tools such as a sales tax as politically radioactive (Salomons and Béland 2020).

1.3.2 Actors, Ideas, Interests

The second component of this theoretical framework is an actor-centered framework that identifies the interests, ideas, and institutional arrangements within which various actors operate. It begins with the assumption that actors are the primary agents of policy change. Actors can be both individuals or groups, and so unlike other frameworks such as the advocacy coalition framework (ACF) it does not operate according to methodological individualism (Jenkins-Smith et al. 2018, 140; Sabatier 1987, 685; on methodological individualism see List and Spiekermann 2013). Moreover, these actors have interests, and strategically apply resources to achieve those interests. Unlike the ACF, government actors or decision makers are given central priority in this framework owing to the institutional authority granted to them.

Regarding ideas within this theoretical framework, they can be normative and causal. Normative ideas range from values and belief systems to policy preferences and other ideational factors that shape the overarching goals of the actors. Causal ideas are ideas about how policy change occurs, and thus shape the strategies and tactics of the actors themselves. Ideas can help frame specific policy proposals to fit with exogenous background conditions such as political culture, public opinion, or relevant economic conditions. Jacobs (2008a) argues that mental models can be a way of framing policy proposals in ways that both help simplify and communicate complex policy issues, but also shape how decision makers think about certain policy issues.

For example, household budgeting is a typical mental model applied to government fiscal policy. The notion that a given jurisdiction must 'live within its means' appeals to the public in a way that they can relate to, and it can help achieve the desired outcome of the actor. This mental model is often applied strategically to help communicate the need for budget cuts. Yet this mental model ignores the fact that the collective body of citizenry making up this 'household' has members that come and go, whether through birth and death or migration. This model tends to focus solely on the debt we are leaving to future generations rather than the quality and quantity of the assets. We may saddle future generations with a mortgage on the house, they have an interest in the condition of the house as well.

Institutions represent the various rules, formal and informal, that guide the behaviour of various actors. Institutions also allocate power between respective groups and organizations. They provide the overall context in which the actors operate, but also shape the realm of possibilities for the actors of interest. Any account of the systems in which policy change is made must attend to the institutions which shape those systems. Moreover, any solution to long-term policy challenges undoubtedly involves some alteration to the institutional arrangements if they are intended to withstand over time (González-Ricoy and Gosseries 2016).

In the Canadian context with a Westminster Parliamentary system, the Premier or Prime Minister is the leader of the party that can control the confidence of the legislative body. If that party holds a majority of the seats in the legislative body, then the leader of that party, with an appropriate amount of party discipline, has a significant amount of power and freedom to enact the platform or agenda upon which they campaigned. The opposition party(ies) can oppose all they want, but, barring a rare defection from the governing party, their ability to obstruct the government's agenda is limited.

1.3.3 Intention

A word should also be said about a key analytical challenge of this dissertation: intentionality. Public policy is typically defined as the conscious action or inaction on an issue that makes it onto the government's agenda (Cairney 2012). Intent is critical for understanding long-term policy making because without it, the long-term policy outcomes (Table 2 below) can be the result of random or exogenous factors. The categorization scheme differentiates between intergenerationally equitable or inequitable outcomes and future or present oriented intentions.

		Outcomes	
		Intergenerationally equitable	*Intergenerationally inequitable*
Intent	*Future oriented*	Intentional	Unsuccessful
	Present oriented	Accidental	Intentionally Short-sighted

Table 2: Intention and Outcomes

Intentional intergenerationally equitable policy making occurs when the policy makers intend to address intergenerational equity and are successful. Unsuccessful intergenerational policy making is when the outcomes do not realize the intent. The lack of success could be the result of policy design failure or external factors well beyond the control of the policy makers, such as war or a pandemic.

Accidental intergenerationally equitable policy making occurs when outcomes are intergenerationally equitable, but the intentions were primarily present-oriented. Take wildly fluctuating government revenues from resources, which can have an inflationary impact on an economy if spent immediately. As such, concerns around inflation or economic absorption might be useful rationales for saving those revenues in order to constrain the flow of money into the economy. Those intentions would be primarily present-oriented but still result in intergenerationally equitable outcomes. Finally, intentionally short-sighted intergenerational

policy making is when future generations are ignored, and the resulting policy outcomes are intergenerationally inequitable. This is often believed to be the default position in democratic systems of governance.

Trying to account for intention from a methodological perspective is challenging. Politicians often say one thing and do another or say one thing to sell or frame a policy to the public in a particular way even if that rationale is not the actual impetus for the policy. For example, in the creation of the Heritage Fund, concern for future generations was front and centre in how the policy was framed and defended. Yet there is also evidence that the government literally could not spend the money fast enough without encouraging negative consequences (e.g., increasing already high inflation) and so had money left over which it chose to save. Each of these accounts identifies a different intent behind the creation of the Heritage Fund that must be gathered in order of a judgement, however imperfect, to be made on whether a policy decision was or was not future oriented. Private evidence (archival notes, government documents acquired by the Freedom of Information Act, etc.) can be contrasted against public statements (Hansard, media releases, etc.) to help the researcher make such qualitative judgements. The availability of that evidence, particularly for historical projects such as this, may not be sufficient to definitively conclude one way or another, and it's most likely that a combination of both rationales contributed to the outcome, even if one rationale became the primary frame for the policy. While I will make arguments about particular premier's and their future-oriented intentions, I want to highlight at the outset that there is no easy methodological tool available to truly uncover the intentions of decision-makers.

1.3.4 Data sources and methods

For the policy analysis contained within this dissertation concerning Alberta's resource wealth governance, I rely primarily on public finance sources and analysis spanning the collection, savings, and distribution of Alberta's resource wealth. Some of these data are readily available and easily accessible. Alberta Energy conveniently produces a resource revenue workbook, which is a publicly available account of all the resource revenue the province has collected from 1970 to the present (Government of Alberta 2018). Heritage Fund annual reports provide an historical account of the value of the fund during its history.

Until recently, public finance data, particularly comparable data over this entire timeframe, was less readily available.[12] Fortunately, Ron Kneebone, an economist from the University of Calgary, had been working to develop a consistent dataset for those interested in provincial fiscal policy. He published this data in the journal *Canadian Public Policy* covering the period of 1980/81 – 2015/16 (Kneebone and Wilkins 2016). He then extended his data for Alberta back to 1965 (Kneebone and Wilkins 2018).[13]

To analyze the politics of Alberta's resource wealth governance, I examine some specific instances of policy change or reform of the overall wealth governance regime to understand the factors that resulted in change, or a lack of change (or lack thereof). They are detailed in the table below:

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[12] The provincial public finance data at the beginning of this dissertation was separated in two datasets. The Historical Financial Management System data ran from 1965/66 – 1991/92. Statistics Canada had a separate dataset that ran from 1989 – 2009, but with a slightly different accounting methodology. Finally, Paul Boothe (1995) published a book which consolidated public finance data for Alberta from its establishment in 1905 to 1995.

[13] I am extremely grateful to Ron Kneebone for giving me early access to this dataset which allowed me to more easily conduct my research rather than having to splice together separate data from StatsCan and the FMS datasets.

Category	Year(s)	Policy Change
Collection (Ch. 3)	1972 – 1974	Royalty Review
Collection (Ch. 3)	1995 – 1997	Generic Oil Sands Royalty Regime
Savings (Ch. 4)	1976	Heritage Fund establishment
Savings (Ch. 4)	1996	Heritage Fund Reform
Savings (Ch. 4)	1993 – 1995	Deficit elimination and debt reduction
Distribution (Ch.5)	1972 – 1983	Investment in human and physical capital
Distribution (Ch.5)	2004	Alberta Resource Rebate
Distribution (Ch.5)	1973 – 2006	Tax system distribution; "Alberta Advantage"

This dissertation primarily relies on Hansard transcripts and media releases to get at the public facing justifications of policy decisions and uses government documents to reveal some of their less public justifications. For the Lougheed and Getty eras, the Provincial Archives of Alberta are the primary source of government documents. This allowed me some access to more private information, such as uncovering private notations of Premier Lougheed scribbled in the margins of reports or memos. The Provincial Archives did not have any records for Premier Klein, and so Freedom of Information and Privacy Act (FOIP) requests were made for documentation related to three key Klein era policy changes: the creation of the generic oil sands royalty regime, the reform of the Heritage Fund, and the Alberta Resource Rebate. The details of those FOIP requests are included in Appendix 1-A. Unfortunately, the FOIP materials were limited and did not afford me the same opportunity to pursue certain threads in the way I was able to with the archival documents. Nevertheless, government documents did provided context for and, in many cases, the rationale for key policy decisions.

I also opted not to conduct interviews for two reasons. First, no one would have been available for interview from the Lougheed government. Given this I did not want to bias the comparative work by having one source of evidence available for one Premier and not the other. The second (and more critical) reason is that inevitably people will recall their legacy with

favour, particularly when asked about something as normatively laden as intergenerational equity. The resulting answers would undoubtedly be "of course we were concerned about future generations. That's why we did X". I felt that this would be of limited value for this dissertation.

This dissertation proceeds as follows. Chapter 2 provides an overview of all the various theoretical policy options concerning the collection, savings, and distribution of resource wealth. Only by understanding which options were theoretically available can we understand the decisions that were made – and those that were not. Chapter 3 delves into the various ways government can collect rent from non-renewable resources. Chapter 4 covers the various forms of saving available, from the Heritage Fund to debt repayment under Premier Klein. Chapter 5 examines the various ways resource wealth can be distributed to the public through spending decisions, investment in human and physical capital, and direct distribution as was done with the Alberta Resource Rebate. Chapter 6 concludes by summarizing the major findings of the study and highlighting some lessons that can be learned when it comes to Alberta fiscal policy, both looking back and going forward.

CHAPTER 2: POLICY OPTIONS FOR RESOURCE WEALTH GOVERNANCE: A CONCEPTUAL OVERVIEW

2.1 Introduction

This dissertation examines the various ways the government of Alberta has collected and used wealth generated by non-renewable resources. To understand the trade-offs of the policy choices made by Alberta governments, it is necessary to first provide an overview of the various policy options on the table. This chapter sets out to do that by examining the four key mechanisms that allow government to identify, collect, save, and distribute/invest resource wealth.

The question of who gets what and when is informed by a host of prior choices, all with different trade-offs related to numerous questions regarding each component of the resource wealth governance regime. How do we identify which resources are out there and who should develop them? How do we best capture the rent that is available, or even define what we mean by best? Do we save that rent or distribute it immediately and to whom? If we save, what do we do with it now and in the future? All these questions feed into our understanding of who gets what and when, and, as we will see, the political factors affecting each of those decisions shapes the overall regime in predictable and measurable ways. This chapter lays out the options available in these questions and helps explain why some paths were chosen over others along with the trade-offs that resulted from them.

Many of the theoretical distinctions discussed here are socially constructed and contestable. Clear theoretical categorizations provide conceptual clarity, but rarely align with the complex and changing realities of the real world. Disconnects between the intentions of policy

decisions and the challenges of policy implementation are inevitable, and post-hoc rationalizations are, more often than not, the default *modus operandi* of policy makers.

The chapter begins with a history of oil and gas exploration and identification of resources in Alberta. This overview is necessary for three reasons. First, unlike a resource such as timber, the quantity, quality, and economic viability of oil and gas resources are not easily known. Significant expenditure is required to understand what potential resources are even available.

Second, resource wealth governance is fundamentally dependant on the quantity of resource in place and the resulting time frame over which that resource is expected to be depleted or made obsolete. A short depletion time frame will push governments to extract every last dollar, while a longer potential depletion time frame will make the extraction of every last dollar a less pressing concern. As we will see, Lougheed and Klein were operating within fundamentally different contexts on this issue.

Third, and most crucially, resource identification and the pace of development are inextricably connected to rent collection regimes. Rent collection regimes can help or hinder additional exploration, which in turn impacts the pace of resource development. The timing of resource development significantly impacts present and future generations. In short, this history unpacks how much, how long, and how fast Alberta sought to develop its resources – and how that impacts future generations.

This section also outlines the various challenges facing the policy makers tasked with rent collection regime design. Some of these challenges are specific to rent collection regime

design, while others are common to the challenges inherent to long-term policy making. This section also identifies some of the competing elements that policy makers need to balance to develop an effective rent collection regime. Finally, this section provides an overview of the specific mechanisms through which rent can be collected. Each of these mechanisms have specific trade-offs which must be considered with an eye to the objectives the policy makers want to achieve with the rent collection regime.

Governments can save resource wealth via two broad approaches: paying down government debt (if debt exists) or saving resource wealth in specific funds. Both approaches can improve the overall fiscal position of a jurisdiction, although they each have distinct trade-offs. From an intergenerational perspective, saving resource revenue is a means of deferring the distributing of resource wealth to benefit future residents.

Finally, the chapter reviews a number of approaches to distributing resource wealth. The first is to distribute the wealth directly to citizens either with dividend payments or through the tax system. Distribution can be accomplished through the tax system by lowering taxes and increasing or maintaining spending while using resource wealth to fill the revenue gap created. This approach provides a *de facto* transfer of wealth through foregone taxation.

Resource wealth can also be distributed indirectly by making investments that provide benefits well into the future. This approach distributes wealth, or the benefits of that wealth, through investments in physical or human capital that benefit both present and future generations. Investments in infrastructure or education are approaches that benefit the present generation but also provide lasting benefits well into the future. They increase the overall

productivity of the economy, make the exchange of goods and services more efficient, and allow for innovation to create products or solve pressing problems facing society.

2.2 Identifying and Determining Resource Wealth: Exploration and Reserves

While it is Albertans that ultimately own the resource, the government or the Crown operating on their behalf must first develop some understanding of the quantity and quality of the resource in place before it can even consider rent collection. Governments generally lack the expertise to identify and develop resources and so must partner with companies to conduct this work on their behalf. The first step of this process – exploration – allows for the development of non-renewable resources by identifying *proved reserves*. Proved reserves are "the estimated quantities of all liquids defined as crude oil, which geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions" (U.S. EIA n.d.). There are several components to this definition which require some discussion.

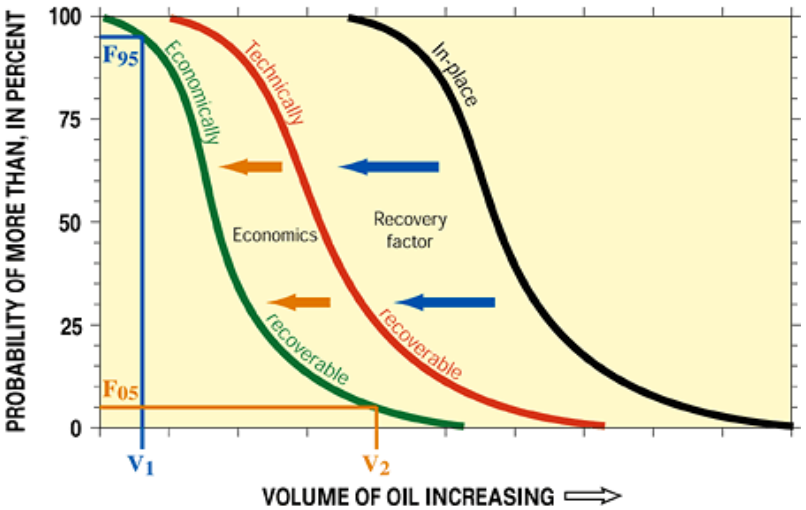

Figure 4:Schematic graph illustrating petroleum volumes and probabilities (U.S. Geological Service 1998).

First, there are different categories of reserves of which proved reserves are but one subset (see Figure 4). Of the others, the broadest is *reserves in place*. These reserves include the total quantity of a given resource which can legitimately be claimed to exist in a reservoir based on the best available data and estimates. The second category is *technically recoverable reserves*. This category defines how much, of the reserves in place, are recoverable given extant technology available at that time and without regard to cost. The third category is *economically recoverable reserves* or *proved reserves*. These reserves are those that can be genuinely expected to be developed given the technology available and the economic conditions, such as the cost of production and the price of oil.

There are six factors which determine the recovery factor of a given reservoir.[14] It determines what component of the oil in place can be legitimately labelled as *proved reserves*. These factors include geological (1 & 2), technological (3 & 4), and economic [and policy] factors (5 & 6):

1. Reservoir rock properties, e.g., porosity, permeability, structural position, and thickness;
2. Reservoir fluid properties, e.g., viscosity, pressure, gas saturation;
3. Drive mechanism, e.g., solution, gravity drainage, water drive;
4. Method of production, e.g., well completion techniques (including EOR[15]), spacing of wells, rate of withdrawal, utilization of EOR;
5. Economics, e.g., drilling and completion costs, production costs, prices of oil and gas, and by-products;
6. Government regulations including those relating to well-spacing and assorted 'conservation' practices, royalties, taxes (MacFadyen and Watkins 2014, 7).

[14] This approach is focused primarily on how a particular jurisdiction assesses reserves within its borders. For more details on the challenges of how companies incorporate reserves into their corporate accounting systems see Fox and Lefsrud (2021).

[15] Enhanced Oil Recovery (EOR) includes a variety of techniques aimed at increasing the amount of oil that is extractable from a given reservoir. For example, one technique is to insert water into the well to maintain the pressure of the reservoir and push more oil to the top of the reservoir.

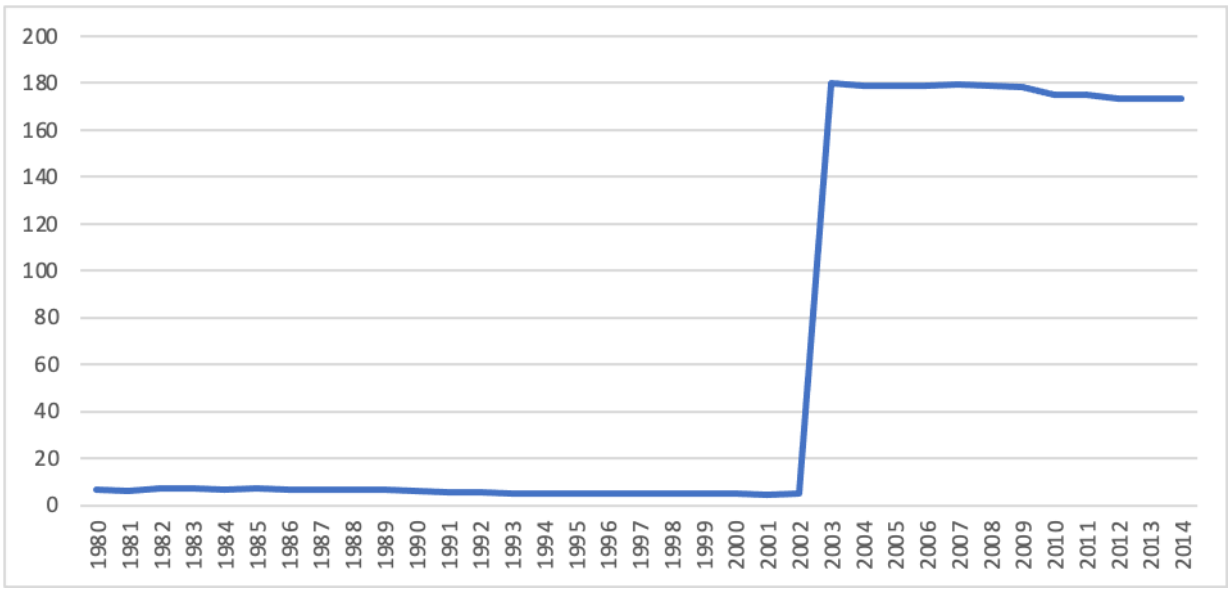

Figure 5: Oil Sands Reserves (billions bbls). (Source: US EIA)

Geological factors are unchanging, but changes to technological or economic factors can affect the overall recovery rate and thus the quantity of proved reserves. For example, according to the U.S. Energy Information Agency, between 2002 and 2003 Canadian proven oil reserves jumped from approximately 5 billion barrels to 180 billion barrels (Figure 5).

This jump in reserves was due to the maturation of *in situ* extraction techniques, particularly Steam Assisted Gravity Drainage (SAGD), which made a significant portion of the oil sands reserves in place technically and economically recoverable.

Changing economic conditions can also have a significant impact on proved reserves. A study by the Canadian Energy Research Institute estimated oil sands supply costs at approximately $43/bbl for a SAGD project, and $70/bbl for a stand-alone mine (Millington 2017). In comparison, much of the oil in the Middle East under OPEC control costs between $4-$6US/bbl to produce (Knoema n.d.). Thus, when oil prices drop, it will be the sources with much

higher production costs that are priced out of the market first, thereby reducing the reserves that are economically recoverable.

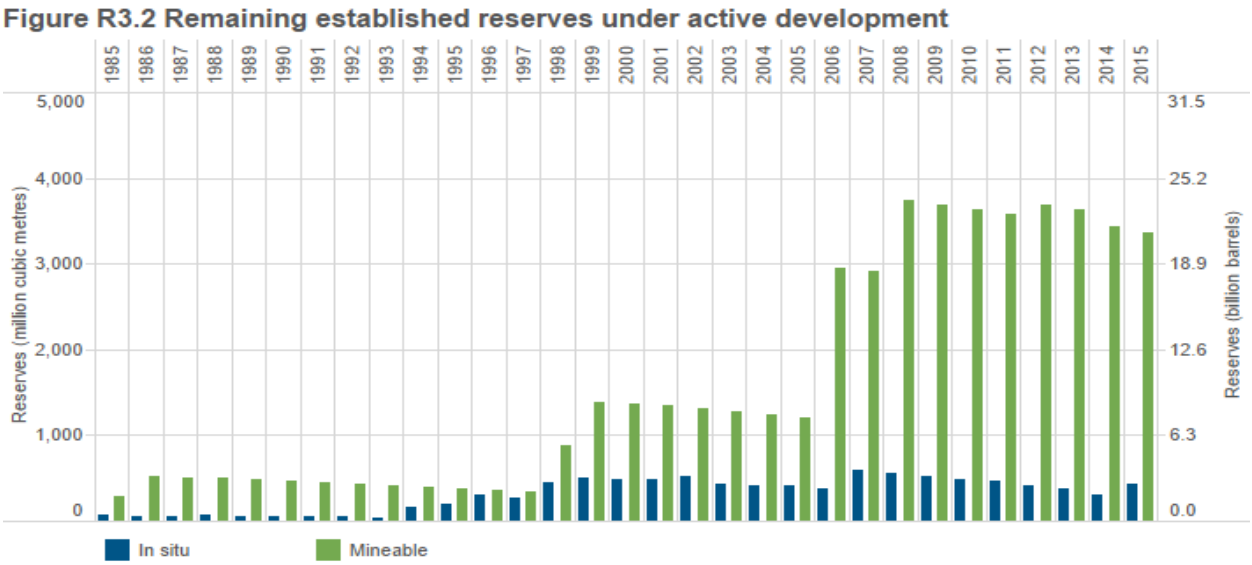

Figure 6: Alberta Energy Regulator ST98: Alberta Energy Outlook Report (Alberta Energy Regulator 2022)

Similarly, the reserve estimates of the Alberta Energy Regulator (AER) are based on active developments only (Figure 6), which requires not just economic viability, but actual investment by companies. From there we see significant jumps in 1998 and in 2006.

In both cases, it was the economic conditions which fundamentally changed. In 1997, the Alberta government implemented the generic royalty regime (to be discussed in Chapter 3), and between 2002 and 2008 oil prices quadrupled from $25/bbl to $100/bbl. Not surprisingly, the proved reserves in Alberta are much different under $100/bbl scenarios than under $30/bbl scenarios.

There are a few governance challenges concerning reserve identification and extraction processes with which governments must contend. The first is the way resource exploration should be governed (Collier, 2010, Chapter 4), and there are two extreme outcomes to be

avoided here. The first extreme is sustained neglect and lack of exploration/development of potential resources. If oil reserves exist, you want someone to find them and make use of them, if possible. The second extreme is the 'gold rush' scenario where access is unfettered, and a free-for-all ensues to extract the resources as quickly as possible.

The challenge policy makers face about reserve information runs on two separate axes. First, there is information asymmetry about reserves when one party has more information over a given resource's value than another. This is a company-to-government axis. The second is that information about potential resource reserves is a public good. As a public good it is prone to free-rider problems where actors (oil companies) can strategically seek to take advantage of the efforts of other companies. This is a company-to-company axis.

Before oil is discovered, land values are comparatively low because expectations regarding resource discovery are minimal. Oil companies may approach governments to lease land for resource exploration but governments (as agents tasked with responsibly managing resources on behalf of its citizens) have reason to be circumspect. If the playing field is equal, then one of two scenarios is possible. Either A) an oil company is correct in its assessment that oil and gas resources exist in a given tract of land and is able to gain disproportionately large profits from the cheap price it was able to pay the government for access to the land, or B) the government gains by receiving revenue for exploratory leases which do not result in any resource production, which leads to fruitless expenditures on the part of oil companies. Oil companies are unlikely to move unless they have information that makes Scenario A more likely than Scenario B. This information asymmetry means that Scenario A is more common as a result.

One way to counteract this asymmetry is for governments to gain an understanding of the quality and quantity of the resources within their jurisdiction. This can be accomplished by either establishing a state-owned company or government organization to develop the capacity and expertise to assess resources for itself. This approach can result in great payoff for the government due to higher levels of knowledge of its resources, but it comes at greater risk. It is possible that the government could risk tax dollars or be much more inefficient than a private company in exploring for resources.

The other way a government can account for this asymmetry of information is by creating exploratory leases that are less costly for oil companies initially but allow for greater revenue sharing should resources be discovered. This allows more of the risk to be shared between the oil companies and the government.

One way for companies to gain information about possible reserves is to rely on the work of neighbouring companies. A company might buy the mineral rights to large tracts of land when there is little knowledge about potential resources and so the cost of the mineral rights is minimal. The company then sits on that asset in the hope that some other company will discover oil or other nearby resources that would give the company more reason with (less risk) to then explore for resources in its own area. This kind of scenario can potentially lead to long-term neglect of resources. Policies regarding land leases for resource exploration purposes must be designed in such a way to avoid this kind of problem. A "use it or lose it" clause on a land lease is one way of dealing with this problem.

Conversely, the 'gold rush' scenario occurs when after one company discovers oil, many others rush to the area to try and find other reservoirs or even drill wells to extract from the same

reservoir that has been recently discovered. This latter scenario is the result of the so called "rule of capture" (Daintith 2010), a law which dictates that oil in the ground is the common property of all but becomes the private property of an individual or company when it is extracted from the ground. This rule results in a significant collective action problem, as many actors rush to extract as much of the resource as quickly as possible which then a) floods the market, negatively impacting the price of the resource, and b) results in suboptimal treatment of the reservoir, as over extraction end up damaging the reservoir (MacFadyen and Watkins 2014, 26). This kind of behaviour occurred in Alberta's Turner Valley in the 1930s and led to the creation of the Petroleum and Natural Gas Conservation Board (PNGCB) in 1938 and the adoption of pro-rationing policies – production quotas that restrict and stabilize supply – in an effort to address this collective action problem (Breen 1993).

Alberta's history of resource exploration is made up of different stories for different resources. Conventional oil is largely found in widespread but thin geological layers, requiring numerous wells dispersed throughout the province, as opposed to large, centralized reservoirs (Figure 7).

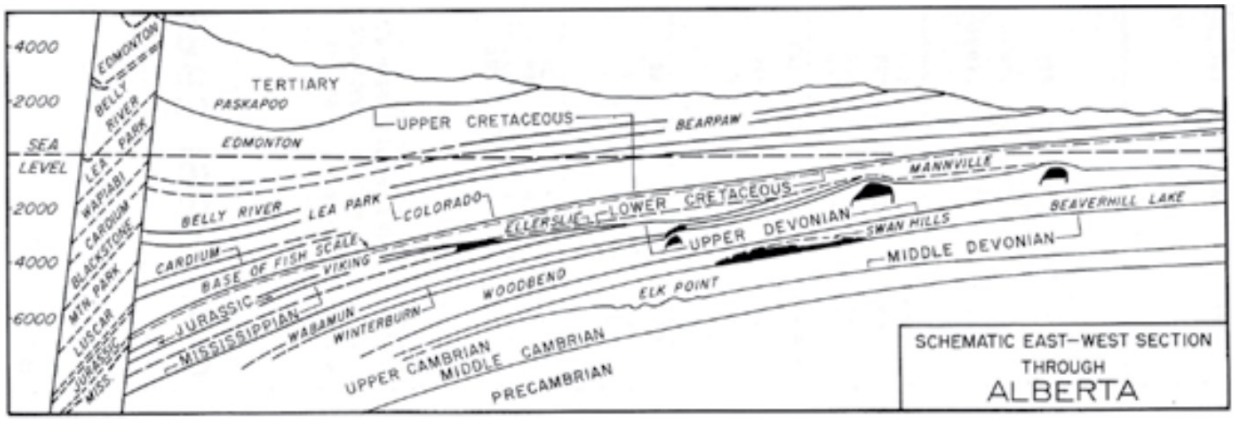

Figure 7: Alberta oil and gas map c. 1965 (Provincial Archives of Alberta 2006, 161).

The oil sands, on the other hand, were known about long before the establishment of the province of Alberta in 1905. Indigenous Cree and Dene peoples used bitumen as a water proofing agent for their canoes, while explorer Alexander Mackenzie commented on the nature of the bitumen resource during his explorations in 1788. The first recorded reference of the oil sands is by a Cree chief named Captain Swan in 1715 (Government of Alberta n.d.). After joining confederation, bitumen was used as road tar in Alberta (Chastko 2004). It wasn't until Karl Clark, a Government of Alberta scientist, developed a hot water separation process in the 1950s that the oil sands became commercially viable. In 1967, the Great Canadian Oil Sands (GCOS) project (now the Suncor base mine) began producing oil from the oil sands (Chastko 2004; Suncor n.d.).

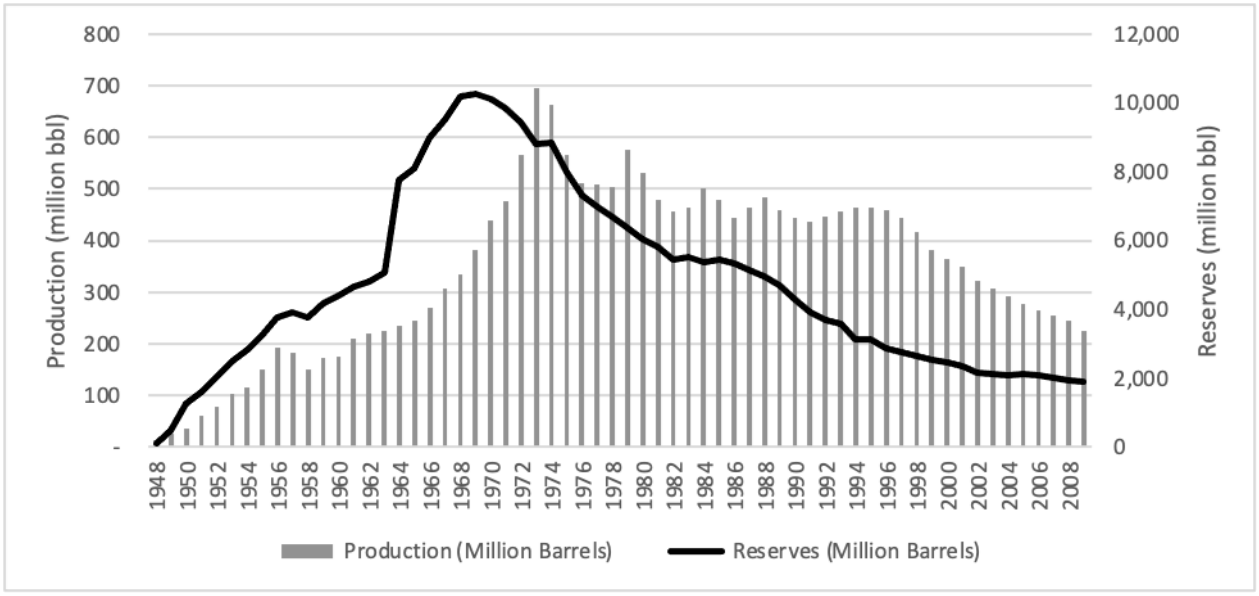

Figure 8: Alberta Conventional Oil Production and Reserves (Source: CAPP Statistical Handbook and Alberta Energy Regulator ST18 and ST98 Reports).

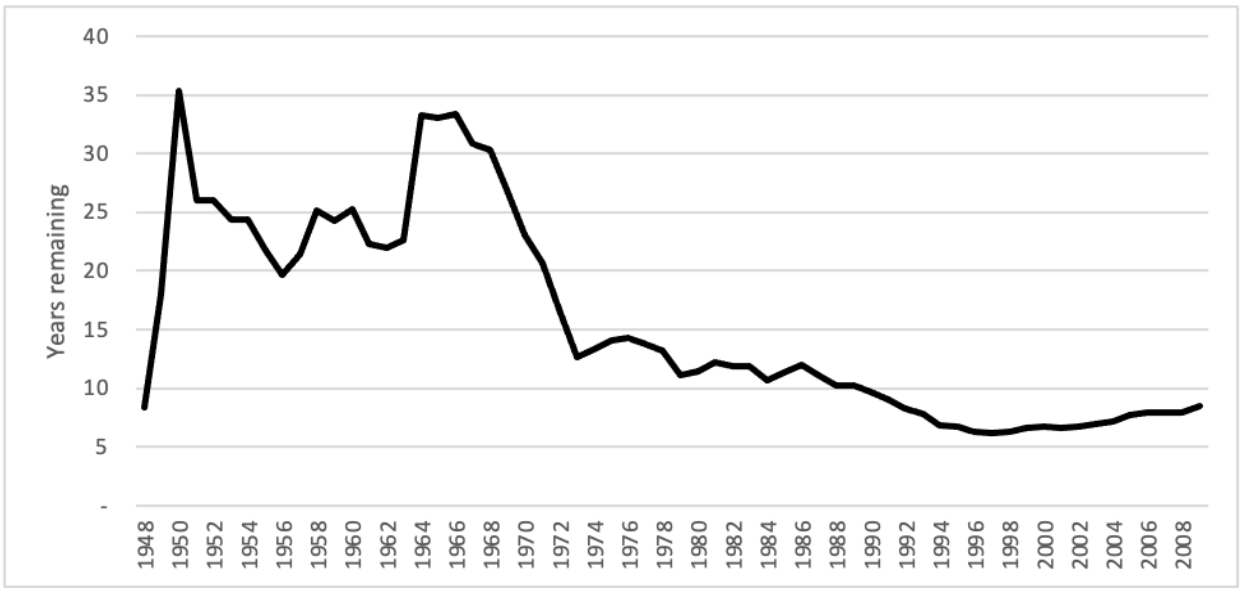

Figure 9: Conventional Oil Reserve Depletion Timeline. Source: Author's Calculations.

This changed everything. At the beginning of Lougheed's second term, proved reserves and production were estimated to decline and last "perhaps a decade at the most".[16] Alberta's reserves at the time were approximately 8 billion barrels, while producing approximately 560 million barrels per year. Alberta's conventional oil production had peaked in 1973 at 696 million barrels per year and had dropped to 510 million barrels per year in 1976 (Figure 8). However, reserve additions had already peaked in 1969 and so the depletion timeline for conventional oil had accelerated dramatically (Figure 9). In addition, Lougheed was also concerned about the potential obsolescence of the oil sands due to the advent of nuclear power (Pratt 1976, 72). This provided Lougheed a stronger impetus to save in the short and medium terms. In contrast, during Premier Klein's tenure oil sands reserves ballooned to over 180 billion barrels, giving his government little reason to save in the short to medium terms. From an intergenerational perspective, achieving a balance of risk and reward in the overall governance of reserves

[16] Speech by Peter Lougheed in the Alberta Legislature, October 13, 1976. Quoted by Pratt (1977, 133) and by Richards and Pratt (1979, 215).

involves several considerations with which policy makers must contend – especially if they're going to maximize the revenue earned from that resource. The first is the pace of resource development. For this, a utilitarian perspective that seeks to maximize overall utility or wealth from a resource is helpful. One can assume that over time a given number of the "reserves in place" will be technically and economically recoverable. One can also assume that the value of the resources on a per unit level (the price) will fluctuate over time. The goal then is to maximize the extraction of that resource when the price is high and minimize extraction when the price is low.

This is, of course, what market conditions typically encourage. However, this becomes an important consideration for governments in the long run. If Canadian reserves currently sit at 172 billion barrels of oil, and production levels are approximately 3.7 million barrels per day (Canadian Association of Petroleum Producers 2015), then Canada has enough reserves to last 127 years at current production levels. The question is whether it is valid to assume that we will be using oil as an energy source until approximately 2140, much less at current levels of demand? If you believe that in the long run the resource will be scarcer and thus increase in value, then from a utilitarian perspective, the best policy is to minimize approvals for resource development so that more of the resource will be available in the future when the prices have increased significantly.

Alternatively, you might believe that the resource will be worth less in the future, in which case you want to extract as much of that resource as quickly as possible before its value drops or it becomes obsolete. Current concerns about the potential for demand for oil to peak – resulting in stranded resource assets – make the end of profitable oil extraction an increasingly

realistic possibility (Carbon Tracker Institute 2017; Clark 2015). The pace of development and resulting depletion timeline fundamentally alter the context within which policy makers are operating. This will be key when evaluating choices concerning rent collection.

While it is doubtful that oil will remain a staple energy source for the planet into the mid-22nd century – ongoing energy transitions away from fossil fuels and the rapid development of low-cost renewable resources make this a pretty safe assumption – the assumptions about *when* this obsolescence may occur in the short to medium term will dictate the kind of resource policies government administrations adopt. These assumptions can emerge as revealed preferences through the stringency of the rent collection regime. If a government's objective is to maximize revenue collected over the course of the resource's life, a more stringent rent collection regime, which will slow the pace of development, is what a government could institute if it thinks the resource will be more valuable in the future. Conversely, a less stringent rent collection regime, which increases the pace of development, will sacrifice on the per barrel take and encourage additional production (and thus more revenue) while the resource still has value. These kinds of considerations significantly shaped how the Lougheed and Klein administrations differed in their approach to resource and resource revenue governance precisely because the reserve depletion time frames within which they operated differed significantly.

2.3 Collecting Resource Wealth: Rent Collection

Resource rent is the surplus value over and above expenses and a reasonable return on investment (ROI) (MacFadyen and Watkins 2014, 25) that occurs due to scarcity, comparative advantage, or other factors (Daniel, Keen, and McPherson 2010; Nakhle 2008b). The capture of rent is therefore, theoretically, economically neutral. In other words, government should be able

to collect resource rent without altering the investment decisions or behaviour of companies involved in the production of non-renewable resources. So long as the companies receive a reasonable ROI, their profit-making objectives are met.

The question of what constitutes ‘reasonable’ is, of course, contestable. One way to answer this question would be to look at historical investment returns and whether an investment is within or above a certain level of the average historical investment return. The reasonableness of an investment also reflects the level of risk and capital required for the investment. A higher ROI might be deemed reasonable for higher risk investment. All of this is further complicated when large companies, such as those with capital available to invest in large oil and gas projects, enjoy a “privileged position” due to the high salience of the economy within democratic politics and their role as a large employer as discussed in the introduction (Lindblom 1977; MacKenzie 2013).

Moreover, there is no one perfect rent collection instrument. Each instrument has its strengths and weaknesses. Combined, a royalty regime can be developed to address a number of issues that will be discussed shortly. However, the collection of these rents remains a daunting challenge. Baunsgaard (2001, 30), writing for the International Monetary Fund, states:

> "It is unlikely to be possible to design one optimal fiscal regime suitable for all mineral projects in all countries. Countries differ, most importantly in regard to exploration, development and production costs; the size and quality of mineral resources; and investor perception of risk. Likewise, projects may differ sufficiently that some flexibility is necessary in deriving an appropriate fiscal regime."

Add in a temporal dimension alongside changing market conditions, technological innovations, and oscillating geopolitics and the task becomes even more difficult.

The revenue government receives from a rent collection regime is a function the per unit take of the resource, the quantity of the resource produced, and the price of the resource. Government's can try to manipulate any of these functions but doing so comes with its own set of trade-offs.

Per unit (barrel of oil) take is often a measure that is used as a point of comparison for overall rent collection between different jurisdictions (e.g., Lund 2009; Van Meurs 2007; Amy Taylor and Raynolds 2006). Government's may try to set a higher per unit take to ensure capture of additional rent or set a lower per unit take to make production more profitable and encourage more development of the resource.

Governments can also directly (through state owned oil companies) or indirectly (through royalties, tax levels, or other incentives) influence the levels of production of a resource in their jurisdiction. Greater production can increase revenue for the government even if the per-unit take is reduced. More production could also be encouraged for other government priorities beyond revenue such as jobs or broader economic development goals.

Governments may also attempt to manipulate the price to their benefit. With enough market share, this can be accomplished with direct control over production levels. Limit supply and prices increase; increase supply and the prices drop. This strategy is the raison d'être of the Organization of Petroleum Exporting Countries (OPEC). This organization has successfully leveraged supply constraints, thanks largely to Saudi Arabia's share of the global market and its ability to ramp its production up or down, in order to manage global oil prices to its advantage.

In Alberta, efforts to control per-barrel price was both a policy goal in the early days of its oil industry and the rationale behind pro-rationing policies that constrained Alberta's domestic oil production (Breen 1993; MacFadyen and Watkins 2014). By limiting production, prices stabilized for the companies operating in the province. Despite its large reserves in the oil sands, Canada only accounts for approximately 6% of global oil production today (U.S. EIA 2022) which is too small to have any effect on global oil prices. As a result, global price manipulation isn't a viable option for Alberta.

Any rent collection regime will undoubtedly be more complex than anything a conceptual model can capture, and it will include policies which could potentially fall under each of the approaches that have been described. However, as we will see, these distinctions are helpful in both framing and understanding the broader trends of a rent collection regime over time. Unearthing those longer-term trends allows us to better understand the consequences for both present and future generations.

2.3.1 Challenges for Rent Collection

There are several issues policy makers must consider when designing a non-renewable resource rent collection regime, from high sunk costs and long payout periods (which are both particularly important for oil sands projects), "time inconsistency" and uncertainty, risk sharing, differing discount rates between governments and companies, and international tax competition. Due to the inherent long-term time frame of resource extraction projects, some of these issues, such as time inconsistency and uncertainty, parallel those discussed around long-term policy making in general.

First, sunk costs. Resource extraction projects require a significant amount of capital to be invested before a single barrel of oil can be extracted, refined, and sold on the market. Despite the substantial amount of money that can be made, there can be a longer delay between initial investment and the final dollar made than many other investment opportunities. This is especially the case for oil sands projects, given the large capital costs required to build them.

These high capital costs also create a dynamic between government and the companies that is known as obsolescence bargaining (Jenkins 1986; Vernon 1971). Obsolescence bargaining theory states that the power dynamics between oil companies and host governments will change over time to the advantage of the government. At the outset, there is more risk and technical expertise required to search for and to begin to extract natural resources, and so the host government must offer generous concessions to oil companies to undertake the initial risk of investment (as discussed above) with regard to exploration if they want the resource developed (see also Collier 2010). But as the industry develops, the investment risk diminishes, and the host government can seek to extract more rent from those resources. By doing so, the host government can revise the initial bargain that has become "obsolete".

This argument typically describes the project-by-project increase in royalties over time. If governments were to consider adjusting the rates on existing projects as they get established this would have two negative effects. First, the short-term gain governments might receive in additional rents could undermine longer-term government revenue, as companies would then consider future projects a riskier investment. Second, this would undoubtedly encourage a more rapid development path, as oil companies would assume that over time the royalties will increase and so they should maximize the amount of oil extracted under the most favourable terms

possible. This can then result in forgone value for both the companies and the government if extraction proceeds at a pace more rapid than what the Hotelling Rule would dictate (Buchholz, Dasgupta, and Mitra 2005; Hotelling 1931; Slade and Thille 2009).[17]

The next issue that policy makers must consider is time inconsistency, one that is both a political and policy challenge. As a political challenge, it refers to the possibility that an election (in democratic systems) may yield a new government that reneges on the commitments of the previous government (Hovi, Sprinz, and Underdal 2009, 22). As a policy problem, time inconsistency speaks to the uncertainty of future conditions where "optimal choices at one point in time may be at odds with optimal choices at future points in time" (Hovi, Sprinz, and Underdal 2009, 21). Oil price volatility, long-term supply and demand curves, and technological innovation can all dramatically impact the economic viability of resource development. Moreover, the long duration of most oil and gas extraction projects (particularly oil sands projects) exacerbates the level of uncertainty. Proper design of a rent collection regime requires the flexibility to account for different conditions, particularly different price scenarios for projects that may have a 40-year lifecycle.

While low taxes are always welcome, companies also have a strong preference for stability. With stability in a royalty regime, companies can calculate their anticipated costs much more accurately and determine whether a project is a viable investment opportunity. If royalties fluctuate, the project becomes an increasingly risky investment as it compounds other risks (such

[17] The Hotelling Rule, developed by Harold Hotelling (1931) is a staple in the resource economics literature, argues that the optimal extraction path will largely track with the rate of inflation (Gaudet 2007; Hart and Spiro 2011; Lund 2009; Slade and Thille 2009). This rule treats undeveloped resources as assets with their own potential value and the optimal extraction path (developing the resource today or waiting for some future date) becomes a critical component in understanding intergenerational equity (Buchholz, Dasgupta, and Mitra 2005).

as price volatility) which cannot be controlled. Companies may still invest, but they'll do so more tentatively given the greater risks involved.

To deal with the time inconsistency problem a royalty regime needs to be both flexible and stable. Perhaps counterintuitively, a more flexible rent collection regime is more stable in the long run. Without flexibility built in, changing conditions can lead to increased political pressure to overhaul the entire system, which results in less certainty for companies in the long run. The 2007 Royalty Review in Alberta (Alberta Royalty Review Panel 2007) was prompted in part by the inability to account for higher price scenarios, such as oil skyrocketing past the $100/bbl threshold. A more flexible and responsive rent collection regime would provide companies with long-term certainty, while still allowing governments to maximize their rent collection under various conditions. In the end, there is no one best royalty regime, only a mix of different trade-offs.

The next issue governments must consider in rent collection regime design is risk (Garnaut and Clunies Ross 1975; Lund 2009) and how it ought to be shared. An oil and gas project necessarily comes with some risk, and capitalist economic logic dictates that whoever takes the greater risk should receive a greater reward. Governments can opt to take little to no risk at all, but they must then be willing to forgo significant rents in return. By allowing risk-sharing within a royalty regime design, companies have more downside protection, which allows for a greater portion of the rent to go to the government. State-owned oil companies, for example, allow governments to take on a much larger share of the risk – and share in a much larger portion of the rewards – than a regime where government depends entirely on private companies to take on the risk and taxes whatever profits they might make.

Another key issue in the design of a rent collection regime is the role of discount rates. Recall from Chapter 1 that discount rates are an appropriate mechanism for addressing intergenerational equity when future generations are assumed to be better off materially than the present.[18] The implied discount rate affects the design of any rent collection regime and embeds assumptions about the value of the resource and resulting extraction timeline. If a government discounts the future more heavily, either because more revenue is required in the short term or expectations suggest the resource will be less valuable in the future, then the regime can be designed in ways that lead to a more rapid extraction pathway – and vice-versa.

One example of how this looks in practice is the difference between industrialized and less industrialized resource abundant jurisdictions. Less industrialized countries have a much greater need for an immediate injection of capital and revenue into government coffers to invest in infrastructure, education, policing, and other pressing needs. But what they gain in immediate revenue, they lose in potential future revenue. This would be an example of a rent collection regime that discounted the future more. Industrialized countries do not have as pressing a need for those near-term revenues, and so they can, at least in theory, take their time and apply a lower discounting rate that better maximizes revenue over time.

Finally, rent extraction regimes must also compete against other jurisdictions for relatively scarce capital. More generous rent collection regimes in other jurisdictions can shape investment decisions, particularly when it comes to large multinational oil companies. Even if the company can get a reasonable ROI (say 10%) in jurisdiction A, they will invest in

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[18] See Chapter 1 footnote 11.

jurisdiction B first if they can get a 20% ROI. Limited resources force companies to make strategic choices about how best to use their assets for the benefit of the company and its shareholders.

Like other aspects, this is as much about the timing of resource development as anything. If jurisdiction A maintains its rent collection regime that provides a 10% ROI, despite jurisdiction B allowing a 20% ROI, a company will come to develop the resource in jurisdiction A, but only after B is depleted. As such, and once again, assumptions about the future value of a resource play a role here. If jurisdiction A believes that the resource will be less valuable in the future, they might alter their rent collection regime to match or exceed the ROI available in other jurisdictions (including B) rather than risk the resource becoming obsolete by the time a company would come for their resource at 10% ROI.

Taken as a whole, a rent collection regime should try to be as efficient and economically neutral as possible. An efficient tax is one which "neither impedes nor reduces the productive capacity of an economy, not does it create distortions in the allocation of resources by favouring one industry or type of investment at the expense of others" (Nakhle 2008b, 11). For example, a carbon tax is often referred to as an efficient tax with regard to greenhouse gas emission reductions because it demands all actors within an economy calculate their cost of polluting. Thus, those with the easiest and cheapest opportunity to reduce emissions will do so in order to save on the carbon tax whereas others for which this may be more costly will decide that it is cheaper to pay the carbon tax than alter their behaviour.

Neutrality, however, "determines whether the tax system interferes with investment and operational decisions in such a way as to cause them to deviate from what is the social optimum"

(Nakhle 2008b, 11). For oil and gas projects, a neutral tax does not distort the decisions to develop projects on the margins or distort the overall development path. If a project is deemed economically viable before a neutral tax, it will continue to be economically viable after a neutral tax has been implemented.

Decisions incorporating these factors will necessarily involve numerous trade-offs. For example, concerns about jurisdictional competition might undermine efforts to maximize the per barrel take while assumptions about various risks may push or pull other decisions in a range of directions. This section has described the multitude of considerations governments face so that the impacts on both present and future generations may be considered in a more thoughtful manner. It is to the rent collection instruments that we must now turn.

2.4 Rent Collection Instruments

There are several instruments which can be used to collect rent, each with their own strengths and weaknesses. The instruments that will be discussed here are those primarily used by Alberta: royalties, Resource Rent Tax (Garnaut and Clunies Ross 1975, 1979) (with a brief discussion of a Brown tax for comparison), and land use lease and rental auctions. Some consider corporate income tax (CIT) as another form of rent collection (Lund 2009; Nakhle 2008a), or at least include it in calculations of "total government take" (e.g., Van Meurs 2007). However, CIT is not unique to resource sectors. It is simply a tax levied on companies based on the profit they make with their operations. While CIT may capture some of the rent available, is it not actually targeting it like other rent collection instruments such as royalties. I will return to the question of CIT in chapter 3 to discuss issues that arise when CIT is included in rent

collection considerations. Other instruments include a variety of sector specific charges or taxes which are marginal in relation to those identified above.

One significant option that will not be discussed further is equity participation through state ownership. This is the approach that other jurisdictions have taken, particularly Norway. In his book detailing the Syncrude negotiations, Larry Pratt argues that by renouncing the option of public ownership the Alberta government gave up "its strongest and ultimate bargaining card because it was politically impossible and ideologically unthinkable" (Pratt 1976, 138) but this option should have been viewed as a matter of "bargaining power, not of ideology" (Pratt 1976, 184). However, ideology was difficult to overcome in a jurisdiction like Alberta, where its overarching conservative political culture prioritizes individuality, autonomy, and populism (Wesley 2011).

2.4.1 Royalties

The first rent collection instrument is a royalty. A royalty is a charge, either a set dollar amount or a percentage, on a unit of production of a given resource. There are three main benefits to using royalties as a means of rent collection (Broadway and Keen 2010). First, a royalty is a simple and straightforward instrument for governments to employ. Production data is readily available and easily monitored by government departments. Second, royalties provide revenue to governments from day one of a project. Depending on a government's discount rate, this can be a significant consideration. Third, royalties provide a stable and predictable revenue base for governments. Other mechanisms (particularly the Brown Tax to be discussed shortly) may yield a greater overall return over the lifetime of a project, but they necessarily come with greater volatility.

On their own, royalties also have several drawbacks. First, if they don't account for costs, a fixed rate royalty can potentially capture more than the rent that is available and distort investment decisions for higher cost marginal projects. For example, if oil is $50/barrel and a royalty in jurisdiction X is set at $25/barrel, then any project with costs greater than $25/barrel will not proceed. Concern with marginal projects is not an issue if one is trying to capture more money on a per unit basis, but it is if you want to design a rent collection regime that will increase production.

A royalty rate that does not account for costs can also have the unintended effect of prematurely closing wells. As a well gets drained it becomes more difficult and more costly to extract the remaining oil. If those costs exceed the price of oil (or, more technically, when the price no longer covers the marginal extraction costs) then the well will be closed. If the royalty does not account for those increased costs, then the price needs to cover the marginal extraction cost *plus royalty.* Failure to do so will result in the premature closure of wells. Alberta originally dealt with this issue by connecting the royalty rate to the productivity of conventional oil wells. Prior to 1973, Alberta charged a 5% royalty rate for wells that produced up to 600 bbls/month sliding up to a maximum of 16.67% for wells that produced over 4,500 bbls/month. Premier Lougheed maintained that overall structure but increased the maximum rate to 25% in 1973 (MacFadyen and Watkins 2014, 341 Appendix 11.1).

Second, royalties, like any flat tax, are inherently regressive, taking a greater portion of a project's income at lower levels than higher ones. This can be addressed by introducing a sliding scale (much like progressive income tax brackets) linked to the resource price (Nakhle 2008a). However, introducing this sort of progressivity can have other distortionary affects.

Royalties are a relatively flexible rent collection instrument. This flexibility allows governments to adjust the royalty rate to respond to changing conditions (such as oil price spikes). However, as tempting as it may be to ramp up royalty rates as oil prices increase, caution should be exercised. Rents accruing from changing market conditions (such as oil price spikes) are quasi-rents in that they are not inherently connected with the structural features of the industry. Anticipation of such changes to royalty rates could inadvertently impact extraction decisions. If the expectation is that prices will drop, then extraction may be deferred, and vice versa. Moreover, the "obsolescence bargaining theory" (Jenkins 1986) discussed earlier suggests that governments gain significant negotiating power vis-a-vis resource extraction companies both because of sunk costs on the part of industry and the reduced risk profile as the industry gets more established. As a result, governments gaining additional leverage can increase royalties on companies and projects more easily than companies can walk away. If industry actors assume this to be the case, then the assumption that royalties will inevitably increase provides an incentive for companies to extract as much of the resource as quickly as possible while royalty rates remain at their lowest levels. This can be detrimental to the government's overall return.

Put another way, an ideal rent collection regime design should prioritize the lifetime of a project and not a single phase. To do so requires providing companies with stability and cost certainty above all else. Fluctuations in royalty rates, while seemingly beneficial in the short-term, can have negative consequences for government and government revenue in the long-term if it results in sub-optimal extraction pathways.

2.4.2 Resource Rent Tax

As noted above, one of the challenges with royalties is that they do not account for production costs. The sliding scale connected to well productivity for conventional oil is an imperfect means of accounting for costs. There are two broad approaches to account for the costs of resource extraction projects within the economics literature. The first is the Resource Rent Tax (RRT) as proposed by Garnaut and Clunies Ross (1975, 1983). The Resource Rent Tax allows companies to deduct extraction costs (and/or losses) from what it owes the government. Rather than a set per unit charge ($/bbl or %/bbl) the government would extract a percentage of *net* profits, thus allowing the company to deduct capital and operating costs. This is how the oil sands royalty agreements have been structured, from Syncrude (50% net profits) to the generic royalty regime which charges separate rates before and after the immense capital costs have been recovered.

The second way to account for costs is through a Brown Tax, so named after the work of Edgar Brown (1948). The Brown tax is a risk-sharing equity agreement where the government subsidizes production costs and/or losses by paying companies during times of negative cash flow and receiving payments during times of positive cash flow. For example, a 50% Brown Tax would be the equivalent of a 50% equity agreement between the government and a company. By accounting for costs, both are more neutral than a basic royalty regime. The Brown Tax requires governments to provide capital, typically in the early stages of a project when negative cashflow is most likely to occur. This mechanism, therefore, has a higher level of risk for governments as de facto equity partners. In addition, because of the subsidization of losses, the Brown tax provides fewer incentives for companies to reduce costs or increase efficiency.

The Alberta government never employed the Brown tax, but it did share in the risk of the Syncrude mine by taking an equity stake in the project. Alberta's equity stake was originally 5%, but it was increased to 10% (along with 15% from the federal government and 5% from Ontario) when one of the private investment partners (Atlantic Richfield) pulled out (see Chapter 3). The Resource Rent Tax has less risk involved but requires a higher level of information in order to be implemented effectively (Lund 2009). Both mechanisms delay payouts until later in a project's lifetime.

2.4.3 Land Auctions

Land auctions are used for allocating exploratory and production rights on the land itself. The primary advantage of auctions as a means of rent collection is that they allow competition between companies to offset concerns about information asymmetry between the private sector and the government. A well-designed and highly competitive land auction will extract, in theory, the most amount of rent a company can expect a project to produce that still allows the company to recover its costs and make a reasonable return on investment.

There are a number of issues with this mechanism, most notably the timing of the auctions as "competitive bidding can deal [only] with foreseeable rent and not with unexpected rent" (Nakhle 2008b, n2). First, without enough knowledge about the reserves, companies will have an incentive to underbid on a given parcel of land to account for the risk of no resource being found within it. For the government, this may be less of a concern, as the revenue generated on unproductive sites will offset the underbidding of productive sites. But the possibility also exists that some sites may be very lucrative and thus a large amount of the rent accrues to the company rather than to the government.

Second, there's the problem of an exploration/valuation paradox. Companies cannot know with absolute certainty what the value of the land is without exploring, but they must pay for the right to explore in the first place. It is often the practice that exploration and production rights are auctioned separately, but the company doing the initial exploring will have the information about the proper valuation of the resource and be unwilling to share that information with other competitors. Alternatively, explorations rights could be issued simultaneously to various companies, with the main auction focused on production rights to foster more competition. However, this would result in fewer auctions on unproductive sites, while companies would still have an incentive to underbid. Auctions tend to account for a small part of overall rent collection primarily because they are not used in isolation. As a result, companies' valuation of exploration and production rights consider not only costs of production but also anticipated rent extraction by other means.

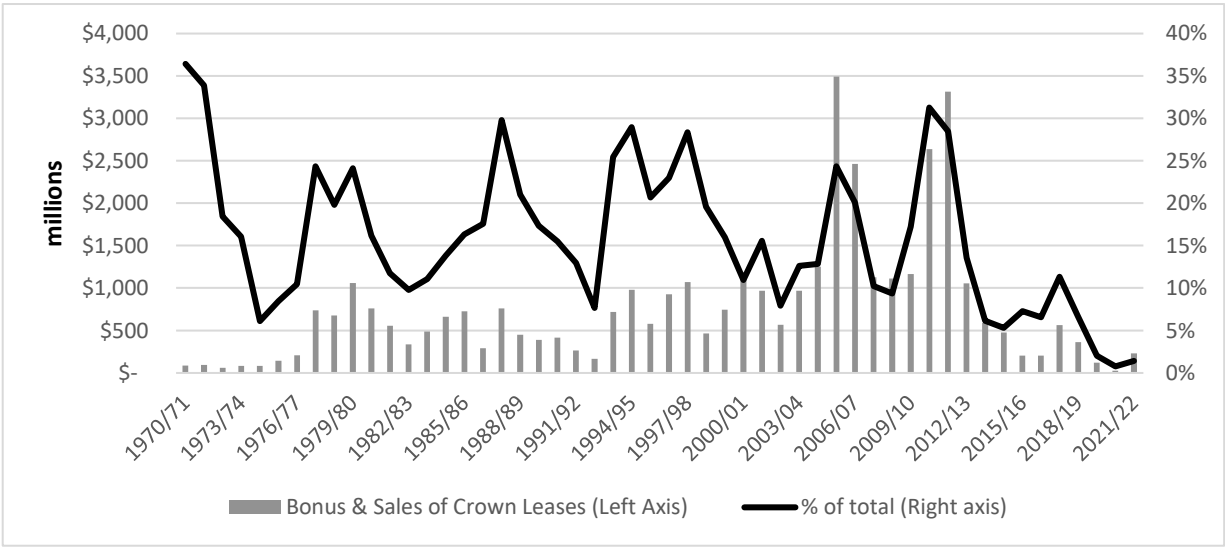

Figure 10: Bonus and Crown Lease amounts and as % of total resource revenue. Source: (Government of Alberta 2018).

Since 1972 Alberta has received a significant amount of revenue from crown leases, although it has fluctuated wildly (Figure 10). A 2011 C.D. Howe institute report recommended expanding crown leases for resource revenue generation and reducing government reliance on royalties (Busby, Dachis, and Dahlby 2011). However, this approach only works when anticipating future gains. Given the potential for oil demand peaking within the next decade, the revenue source will likely decline rapidly soon. Switching now to a system based primarily on crown leases would therefore be a mistake.

2.4.4 Equity Stake

Finally, it is worth mentioning the possibility of equity participation through state ownership, either as a whole or in part. This approach requires government to put up the capital to build a project that can extract the resource. By taking on additional risk, rather than leaving it to the private sector, the government can reap more of the profit. In the end, Alberta took this approach with the Syncrude project, where it had a 15% equity stake. This is also the approach that other jurisdictions have taken, most notably Norway. In his book detailing the Syncrude negotiations, Larry Pratt argues that by renouncing the option of full public ownership the Alberta government gave up "its strongest and ultimate bargaining card because it was politically impossible and ideologically unthinkable" (Pratt 1976, 138) but this option should have been viewed as a matter of "bargaining power, not of ideology" (Pratt 1976, 184). However, ideology was difficult to overcome in a jurisdiction like Alberta, where its conservative political culture prioritizes values like individuality, autonomy, and populism (Wesley 2011).

This section has laid out the various tools available to governments along with their associated trade-offs. It provides a basis to begin to think about the choices any government

faces when establishing a rent collection regime and how they will impact both the present and future generations. In Chapter 3, we will dig more deeply into the exact choices made in the last century by the Alberta government, focusing specifically on the distinct approaches taken with conventional oil and the oil sands. This analysis will allow us to see more clearly the implicit intergenerational distributional consequences embedded within those choices. But for now, we turn to an overview of the choices governments can make with regard to saving their resource wealth.

2.5 Saving Resource Wealth

The saving of non-renewable resource revenue is conceptually simple: set aside surplus revenue for a future day. This is generally viewed as a positive thing. In our own lives, saving is typically focused on retirement, although it can also help us weather unexpected financial events and costs. Given that governments do not need to save for some future event (such as retirement), the generally accepted (yet rarely followed) logic is that they should save or reduce debt when the economy is going well so that they can spend more (even if it means increasing debt) when recessions occur. As an unending corporate entity, the state does not ever need to eliminate all debt. This is why the overall level of debt relative to income (debt-to-GDP ratio) is a more appropriate measure than aggregate or gross debt.

When viewed through an intergenerational lens, government saving results in a different outcome: it defers the distribution of wealth from one population of future generations (future descendants through the present generation) to another (future residents of Alberta). Regardless of how much a jurisdiction saves, it still must decide how, when, and to whom the money will be distributed. And it will (and must) be distributed: saving revenue indefinitely is irrational when

dealing with an unending corporate entity. Viewed in this way, how much is saved reveals which population of future generations the government implicitly, or even explicitly, prioritizes, just as spending decisions (tax cuts vs spending on low-income supports) reveal where a government's priorities lie.

Savings can occur through general fiscal prudence that allows governments to run surpluses and pay off debt or it can occur through the deliberate allocation of money to designated funds. There are three distinct theoretical categories of designated funds: savings, stabilization, and financing (Baena, Sévi, and Warrack 2012; Davis et al. 2003; Ossowski and Halland 2016). Each type of fund has different operational guidelines that can be used in conjunction with the government's overarching fiscal "rules" in order to achieve its objectives. These guidelines inform the overall operation of the fund, and determine how much revenue it should save, at what point it should be saving, and so on.

Two extreme fiscal "rules" help establish the boundaries of this discussion (Segura 2006). The first is a "balanced budget rule," which requires spending all annual oil revenue while keeping the government's overall financial position in balance. The other extreme is the "bird-in-hand"[19] policy in which 100 per cent of resource revenue is saved, with only the interest accruing from accumulated oil revenues being spent. These two extremes highlight a distinct intergenerational trade-off, with the former prioritizing the present generation (and, by default, its future descendants) and the latter prioritizing future residents. Most savings frameworks fall

[19] So called because you save what you get, when you get it as opposed anticipating revenues from natural resources that may or may not be realized. For example, postponing saving till the future only to discover oil loses its value.

within these two extremes (Ossowski and Halland 2016, chap. 7; Wakeman-Linn et al. 2004). The following section will provide an overview of the three types of funds identified above.

2.5.1 Savings, Stabilization, and Financing Funds

The first type of fund is a savings fund. The primary objective of a savings fund is to set aside wealth for future generations (Baena, Sévi, and Warrack 2012; Davis et al. 2003). "They typically have rigid noncontingent operational rules. The rules require the deposit of a specified share of resource revenue, or of total revenues, into the fund" (Ossowski and Halland 2016, 71). For example, between 1976 and 1983 the Heritage Fund required 30 per cent of resource revenue be deposited into the coffers. While the primary aim of a savings fund is to translate natural capital into financial capital and then store it for future use, it also has the ancillary benefit of reducing the dependence of the government and its operating budget on an inherently volatile source of revenue.

For a stabilization fund, or what might be referred to colloquially as a "rainy day fund," the primary objective is to stabilize government revenues and, as a result, government spending. In contrast to a savings fund, these funds are designed with operational rules that dictate under which conditions resource revenue should be either saved in the fund or drawn out of it. For example, such a rule could require all resource revenue that exceeds 10 per cent of the government's operating budget be placed in the fund and drawn out of it whenever resource revenue dropped below the 10 per cent mark. Provided enough is in such a stabilization fund, resource revenue could be thus stabilized at 10 per cent of the government's overall budget each year.

The aim of a stabilization fund is to provide more short-term fiscal stability. When a government has to contend with a steep drop in resource revenue, it must either dramatically cut services, or run deficits to make up the gap in revenue. The long-term consequences of such dramatic swings in government spending have negative impacts over the long-term. For example, University of Alberta economists Stuart Landon and Constance Smith note that "rapid declines in energy revenues can lead to pressure for cuts in expenditures that are difficult to accomplish quickly and efficiently. Revenue volatility that drives government expenditures can also cause fiscal policy to be pro-cyclical, thus magnifying movements in economic activity" (Landon and Smith 2010a, 1).[20] Meanwhile, the work of economist Stella Tsani indicates that resource funds (whether savings or stabilization) may improve governance and institutional quality and "provide a useful insulation tool against the 'resource curse'" (Tsani 2013, 191), a phenomenon whereby resource abundant jurisdictions experience lower GDP growth rates when compared to non-resource abundant ones.

It should also be noted that stabilization funds are most appropriate when governments rely on large amounts of resource revenue in their operating budget. When a government is overly reliant on resource revenue to cover its expenditures, the volatile fluctuations of commodity prices will inevitably wreak havoc on its budgeting process. In such a case, this kind of fund provides some medium-term stability to counter those inevitable fluctuations. But if a government does not rely on resource revenue in its budget, either because it's already saving the

[20] It is worth noting that the pro-cyclical factors Landon and Smith point to are deliberate policy choices. There also exists certain systemic anti-cyclical factors embedded within social support programs. With these programs, spending automatically increases during economic downturns as more people become eligible for the social supports. This systemic factor tempers the pro-cyclical policy choices flagged by Landon and Smith, albeit to a lesser extent.

money or distributing all of it through dividends, then fluctuations in revenue are simply due to broader economic conditions and must be dealt with as any government does. It is an intentional fiscal policy choice to be reliant on resource revenues, one that creates the need for a stabilization fund.

Finally, there's a so-called "financing fund," which is designed to meet the overall budgeting objectives of a jurisdiction. It collects surpluses and finances deficits. Unlike the other funds, it "does not try to 'discipline' expenditure through the removal of resources from the budget" (Ossowski and Halland 2016, 71). For example, Norway's sovereign wealth fund is classified as a financing fund. As Ossowski and Halland write: "The fund receives net oil revenues and makes a transfer to the budget to finance the non-oil deficit. The accumulation of assets in the fund reflects surpluses. This design forestalls transfers to the fund financed by borrowing" (Ossowski and Halland 2016, 72). In other words, the fact that Norway has accumulated so much in its fund is due primarily to the fact that it maintained its tax base and so has not been running resource revenue funded deficits the way Alberta has rather than some operational rule that prevents them from using the money.

Despite efforts to systemically classify savings funds, the applications of those categories can vary. Baena, Sévi, and Warrack (2012, 572) classify Alberta's Heritage Fund as both a stabilization fund and, once the government began drawing from it, a financing fund. Ossowski and Halland (2016, 71), and Davis et al. (2003, 282), on the other hand, classify the Heritage Fund as a savings fund. This isn't just a problem in Alberta. Ossowski and Halland (2016, 72) classify Norway's sovereign wealth fund as a financing fund. Whereas Baena, Sévi, and Warrack (2012, 572) use it as an example of a stabilization fund and Davis et al. (2003, 283) classify it as

a stabilization *and* savings fund. This discrepancy highlights the difficultly encountered by many social scientists when attempting to impose clear categorizations on an inherently complex world.

This difficulty is compounded by the reality that a fund's overall policy objective may shift over time. For example, I would classify the Heritage Fund as a stabilization fund, despite it having non-contingent deposit rules from 1976-1983 because the rationale for the fund was to address the anticipated decline in resource revenues "within a decade or so". When that decline occurred, the operational rules were altered as though the fund had been set up as a stabilization fund in order to meet a revenue stabilization policy objective.

2.5.2 Debt Repayment or Net savings

Among other things, debt is a mechanism through which wealth can be transferred intergenerationally. When governments take on debt, it, and the ensuing interest payments, must theoretically, be paid at some point by someone in the future.[21] As such, debt functions as a de facto transfer of money from future generations to the present, with debt repayment correspondingly functioning as a de facto transfer of money from the present to future generations.

This is an admittedly simplistic portrayal of debt accounting, and one that is often exploited by politicians advocating fiscal restraint. There are a couple of considerations which should shape how we should think about debt and its impact on future generations. First, just as a

[21] For a discussion on debt and intergenerational concerns in the United States see Yarrow (2008).

business might take on debt to expand operations and increase its future revenue, debt can serve a similar function for government by funding investments that could make the overall economy more productive. From an intergenerational perspective, such investments — and the debt needed to fund them — is worthwhile. The concern isn't so much about the existence of debt, per se, but the overall level of debt compared to income (debt to GDP ratio).

Even if debt isn't being paid off, if the economy is growing then the debt-to-GDP ratio will fall. And if additional debt is taken on but the economy is growing at a faster rate, then the ratio still also falls. It is when the debt-to-GDP ratio gets too high that it becomes overly burdensome on governments, as a significant (and, worse, rising) portion of revenue must go towards debt-servicing costs. One estimate puts the optimal debt-to-GDP ratio at approximately 60 per cent for industrialized countries, albeit with many contingent variables (Chowdhury and Islam 2010).[22] In the mid-1990s Canada's debt-to-GDP ratio peaked at just over 80 per cent before deep spending cuts by Finance Minister and future Prime Minister Paul Martin were introduced. In contrast, when the Klein cuts were introduced, Alberta's debt-to-GDP ratio was approximately 10 per cent.

The second issue that shapes how we think about debt in an intergenerational context is future discount rates that were mentioned in Chapter 1. If we can make plausible assumptions about future generations being better off than we are today, then we can justify taking on debt up to a level or at a rate that offsets that assumed future benefit. Doing so will allow the present generation to enjoy a little extra material wealth, without sacrificing the well-being of future

[22] For an analysis of Canada's debt-to-GDP ratio from an intergenerational equity perspective see Ruggeri, Zou, and Garrett (2005).

generations. If, however, it's less likely that future generations will be better off, then the discount rate should drop – and with it, the logic of taking on additional debt in the present. Whether we recognize it or not, many disagreements about climate change mitigation policies (how many costs to impose on the present for future and uncertain benefits) are fundamentally a disagreement around implicit discounting rates in the policies and their potential impacts on future generations.

Setting aside non-renewable resource revenue, whether through savings funds or debt repayment, has numerous intergenerational trade-offs. Funds can save directly for future residents or disperse their wealth to the present generation in the hope that individual savings will benefit future descendants. What is critical is to distinguish between saving the resource revenue, which is a form of converted capital, and saving of other sources of revenue. To use Premier Lougheed's analogy, spending non-renewable resource revenue is akin to selling the house to pay the groceries.

2.6 Distribution of Resource Wealth

Having established reserves, collected rent, and saved some or all of that money, governments must now decide how to distribute those rents to the actual owners of the resource – the citizens. There are four general approaches by which resource wealth can be distributed: direct payments to citizens, distribution through the tax system (pay for tax cuts with resource revenue), investments in physical capital, and investments in human capital. Some, like dividends and surplus saving, have received more explicit attention, whereas others, like distribution through the tax system, are approaches that have implicit intergenerational trade-offs but are rarely identified as such.

2.6.1 Dividends

The first approach by which rents can be distributed is through direct payments to citizens (or paid dividends). This mechanism can involve either an ad hoc payment of surplus resource revenue to current citizens of a resource producing jurisdiction, as Alberta did in 2005 (Gibbins and Roach 2006; Korajczk 2009; Segal 2012) or a more permanent system of regular dividends paid out to citizens, as Alaska has established (J. Anderson 2002; Baena, Sévi, and Warrack 2012; Goldsmith 2002; Murphy and Clemens 2013; Warrack and Keddie 2002).

One concern often raised with this form of distribution is the effect it will have on labour migration patterns (Collins 1980), although this isn't limited to dividend systems. If every citizen receives an annual dividend, then there is an incentive for citizens of other jurisdictions to move to the jurisdiction that provides the annual dividend, or conversely to not leave the dividend-paying jurisdiction in search of other employment opportunities. The greater the dividend, the greater the incentive. Policy design can reduce this impact (e.g., McMillan and Norrie 1980). For example, rather than full dividends for any citizen at any time, you distribute shares of dividends based on years of residency. For example, a full resident dividend share could require 10+ years of residency. When the program begins in year X, any resident receives who has lived in jurisdiction X for 10 years or more receives a full dividend. Any citizen that moves to the jurisdiction after year X receives 1/10th of a share for the first year, 2/10th of a share the second year, and so on. This would dampen, but not eliminate, the overall migration incentive.

A direct payment approach has several advantages and disadvantages. First, it has the benefit of being relatively easy to implement, since residency requirements are fairly easy to verify, and the tax system is set up to allow the distribution of dividend cheques to the

appropriate individuals. If the full amount of resource revenue collected is distributed to citizens that year, then this means of distribution also has the added bonus of keeping it away from the government's general revenue, which limits over-reliance on resource dollars to meet program spending needs. As has been noted, relying too heavily on resource revenue is problematic because its inherent volatility makes fiscal planning all the more difficult.

As a stand-alone resource revenue transfer mechanism, a dividend system benefits future descendants over future residents. The dividends are given to the individuals in the current generation, and it is incumbent upon those individual households to ensure that wealth is transferred to their descendants for future generations to receive the benefit. Responsibility lies with the individual and not the government, and for some political parties this "populist" logic (McMillan and Norrie 1980) is ideologically preferable.

For future descendants of current residents to benefit, a dividend policy needs to have stable and predictable payment schedule so that individual citizens can make investment decisions necessary to facilitate the intergenerational transfer of this wealth. If distributed on an ad hoc basis, the resource wealth will most likely be treated as an ad hoc source of income.

To distribute the funds to future residents, the distribution of dividends must be deferred via a savings fund. Viewed in this way, a savings fund isn't the primary means of achieving intergenerational equity but instead a means of distributing funds to one future generation population at the expense of another. This is especially the case for a jurisdiction like Alberta where open provincial borders mean that there is less overlap between future descendants and future residents.

The dividend approach also has consequences on equality within the present generation. On the one hand, a dividend system can be distributed equally to all citizens. Other distribution systems, as we will see, can have unequal distribution impacts both in terms of population base (who receives the benefit) and in terms of degree (how much they benefit). On the other hand, the distribution of this wealth into individual hands means that over time wealth inequality can get worse, assuming no other policies are in place to mitigate the effects. The dividends would continue to flow to households and, assuming proper investment strategies (which are themselves biased towards the affluent who have the means to access sound financial advice), the wealth continues to build and grow in the most prosperous households. Even with an equal distribution at the outset, certain systemic biases within economic systems can result in unequal outcomes over time.

2.6.2 Tax system distribution

The second approach through which resource revenue can be distributed to citizens is through the tax system. This is accomplished by lowering taxes and maintaining or increasing program spending on public services, using resource revenue to fill the gap. This allows citizens to continue to receive the same basket of public services while enjoying much lower levels of taxation than would be the case without the resource revenue. This allows individual citizens to retain a larger portion of their income without facing any cuts to services. The result is a de facto dividend given to all citizens, administered through the tax system.

Like the dividend system, it primarily benefits future descendants and is often seen as short-sighted or present-oriented because the wealth is distributed to the present generation. However, just like the dividend system, tax system wealth distribution can be designed to

distribute benefits to future residents by deferring payments through savings funds. Instead of a dividend to every citizen through the present tax system, the savings fund money would feed into future budgets and be distributed through the future tax system.

There are, however, a number of drawbacks with this approach. First, distributing money through the tax system exacerbates rather than ameliorates concerns about reliance on volatile resource revenue. Over-reliance on volatile resource revenue is an issue for future generations because it makes government budgeting similarly volatile. Under such conditions, it becomes increasingly difficult to enact long-term fiscal plans. Imagine trying to set and stick to a household budget and retirement savings plan when one year your income is $200,000, the next year it's $40,000, and the year after that it's $90,000. Moreover, there is a tendency to cut taxes and/or increase spending during times of plenty, which encourages problematic pro-cyclical fiscal choices (Landon and Smith 2010a). In contrast, if oil prices crash under a system of dividends, the cheques are much smaller but otherwise should not negatively impact the government's budget.

One way to deal with revenue volatility is with a financing fund, as discussed above. All the resource revenue can be placed into the fund so that a steady stream of money can be used to fund fiscal choices. The volatility is dampened because the volatile resource revenue will simply be placed in the fund, regardless how much or how little it is, while a more predictable amount of its revenue will be extracted each year.

Another drawback to distributions through the tax system is that they reach a much smaller population base, as taxpayers, not citizens, are the ones who benefit. If the resources are collectively owned by Albertans, then the distribution of resource wealth should be done as

equitably as possible. If one does not earn enough to pay taxes in a given jurisdiction or year, there is little benefit one receives from the tax break made possible by resource revenue filling the budgetary gap.

This mechanism also distributes resource wealth unequally. Because the resource revenue fills a generic revenue gap in the budget, high income earners enjoy a greater tax break than low-income earners who pay little or no tax. Low-income earners might receive the lion's share of the social services funded by government spending, but the actual benefit is generally an order of magnitude different.

Finally, this approach exacerbates the long-term politics of non-renewable resource wealth governance, as it fundamentally alters the expectations citizens have about the level of services they receive and the level of taxes they are expected to pay. The expectation for low taxes and high spending becomes politically entrenched within the minds of citizens and, over time, these policy choices, such as being the only province in the country to not have a sales tax, can then become a deep-rooted component of Albertan identity and political culture (Salomons and Béland 2020). The purpose of resource revenue is then believed to be to maintain this assumed benefit or 'advantage'. When resource revenue inevitably drops, these expectations make it that much more difficult for governments to fill the ensuing fiscal gap.

2.6.3 Investment in Physical Capital

The next two approaches, investing in physical and human capital, distribute resource wealth much more indirectly than the previous two. Like distribution through the tax system,

these approaches focus on public spending and fiscal policy. But instead of foregone taxation, here the emphasis is placed on the spending side of the ledger and how benefits are distributed.

The first such approach is through investment in physical capital, or infrastructure. It's here that we encounter something called the Hartwick Rule (Asheim, Buchholz, and Withagen 2003; Hartwick 1977, 1978), which highlights the value of investing resource wealth into 'reproductive capital'. The argument is that investment in various forms of infrastructure, such as roads, the electrical grid, or high-speed internet, can have positive impacts on economic activity both now and in the future. Conversely, failing to invest in physical capital can also have negative impacts by creating an 'infrastructure deficit' as highways, schools, or hospitals deteriorate, and the economy runs less efficiently than it should (Connelly, Markey, and Roseland 2009; Mirza 2007).

It is also important to note that the costs of infrastructure deficits should not be viewed in purely in financial or economic terms. In a report evaluating government infrastructure investment, Dachis incorporated social welfare costs into his analysis and highlighted the variety of impacts that can be seen over time (Dachis 2013). In the case of Alberta, during the mid-2000s when oil was rapidly rising and the Alberta economy was red hot, there were significant infrastructure deficits, particularly in Fort McMurray. The absence of needed hospitals, schools, and roads not only had an economic toll but a social one as well. For example, Highway 63, the single 2-lane highway connecting Fort McMurray with Edmonton, became known as the "highway of death" due to the dangers it posed to the oil workers traveling up and down it (Nikiforuk 2009).

2.6.4 Investment in Human Capital

Finally, as with investments in physical capital, investments in human capital – people's skills and knowledge – can also have economic benefits (Becker 1994; Schultz 1961) for both individuals and the economy (Barro 1998, 2001). Individually, people that invest in their own education increase their lifetime earning power, while collectively a more highly educated citizenry will result in greater productivity gains for the population. And as with investments in physical capital, these investments in people benefit both present and future generations (e.g., Kaushal 2014a). A Conference Board of Canada study found that for every $1 spent on education, the province of Ontario would generate $1.30 in economic benefits (measured by GDP) (Conference Board of Canada 2019).

Investments in human capital should not be viewed solely through the lens of 'economically productive' skills and the knowledge acquired through post-secondary education. They can also include investments throughout an individual's educational life and include improvements to pre-school, elementary, secondary, and post-secondary environments along with professional development opportunities. This also encompasses investments in factors that support the ability to develop human capital, such as quality childcare, paid leave, and other programs and services that can improve the quality and quantity of one's opportunities to increase their store of human capital.

Failure to invest in human capital can have longer term consequences, such as a workforce that is less able to innovate compared to other countries and competitors or adapt to challenges when market conditions fundamentally shift. It is important to note that investment in human capital is as much an individual choice (how much education should I get and in what?)

as it is a policy choice (what is the quality and accessibility of education to the population?). In Alberta in the 2000s, Alberta had some of the lowest high school completion rates in part because high school dropouts could easily secure lucrative jobs in the oil sands. With fewer jobs in the sector today, and likely fewer still going forward, today's dropouts find themselves with fewer options for alternative employment. That is a consequence not only of their decisions but the policy choices that resulted in an overheated economy that produced significant labour shortages – and pulled them away from educational opportunities they might otherwise have pursued.

2.7 Conclusion

This chapter has examined the various policy approaches and tools available to decision makers when it comes to the collection, saving, and distribution of non-renewable resource wealth. This overview provides the foundation for the rest of the dissertation, which will detail the range of options available to decision makers and shed light on the choices that were and were not made. Understanding the options available helps illuminate the intergenerational math of specific policy decisions, along with the attendant outcomes in terms of who benefits and who does not. In turn, that provides the basis for understanding the politics surrounding those decisions.

Because concern for future generations is almost always secondary, clearly differentiating between future descendants and future residents helps reveal some of the implicit assumptions and hidden intergenerational consequences of those policy decisions. This again sheds additional light on the implicit consequences and the politics concerning specific policy

decisions. This chapter has hinted at what some of those consequences are, and the remainder of the dissertation will unpack them in more detail.

CHAPTER 3: RENT COLLECTION

3.1 Introduction

This chapter begins with Premier Lougheed and two separate instances (separated by the first oil shock of 1973) of policy change to the rent collection regime for conventional oil. The first instance is a cautious and tentative approach to policy change, while following the oil shock we see a much more aggressive and unilateral action on the part of the Lougheed government. This latter approach could potentially be viewed as more far-sighted action benefiting future generations, given that his government moved to increase rent collection at a time when Lougheed was worried about the medium-term depletion of conventional oil, a worry he would use as a justification for establishing the Heritage Fund (to be discussed in Chapter 4). However, rather than concern for future generations, it was the quadrupling of oil prices in less than a year and the windfall profits that resulted which motivated the unilateral action on his part. The oil shock upended the balance that had existed between the oil industry and the Alberta government and provided Lougheed with the political capital he needed to increase the capture of rent in the province.

As no major changes occurred to the rent collection regime during Premier Getty's tenure (1985-1992), the conversation then turns to Premier Klein. During his tenure (1992-2006) the most important change to the rent regime was the establishment of the generic royalty regime for the oil sands. Up to that point, oil sands royalties were negotiated on a project-by-project basis, one that created additional cost uncertainty for oil sands companies. Klein, with support from the National Task Force on the Oil Sands (1995), developed a generic royalty regime for the oil sands that was implemented in 1995. At the time, this regime achieved the government's goal of

a one-third each split of available rent between the provincial government, the federal governments, and oil sands companies. The regime marginally reduced some of the royalty rates compared to other crown agreements such as Syncrude but allowed for a minimum oil royalty during the pre-payout period (a period prior to the payout of significant capital costs of oil sands projects) and did not require the equity position that the Alberta government had to take to get Syncrude up and running. This royalty regime provided more cost certainty for oil companies and, most significantly, reduced the cost of capital for oil sands companies.

The primary objective of the generic royalty regime was not to increase government take of a depleting resource, but rather to encourage increased production of a resource that had to date remained marginal in the Alberta oil and gas industry. In this case, having a more than a century's worth of resources is the opposite concern that Lougheed faced. The goal here was to extract more revenue by increasing the number of barrels produced, rather than worrying about marginal increases in per barrel take for a fledgling industry.

From a present-day vantage point, both Lougheed's changes to the conventional oil rent regime and Klein's generic royalty regime – which allowed for the dramatic increase in oil sands production – could be seen as positive for the welfare of future generations. For Lougheed, it was a move to capture more rent at a time when production and reserves were declining. For Klein, the decision to rapidly increase production of a century's worth of reserves just prior to concerns about peak oil demand (e.g., BP 2020) becoming more pronounced seems almost prescient. This was not what was going on in the minds of decision makers when they revamped the royalty regime in the mid 90s, of course, as peak *supply* concerns were of greater concern

well into the 2000s (e.g., Rubin 2012). Instead, the concern was getting a fledgling industry on its feet and trying to and make something of value from its vast but mostly untapped resources.

In the end, the overall difference between what was collected here and what could have been collected is marginal. That's because both premiers worked to increase the amount of revenue collected – and, for the most part, succeeded. For Lougheed, this included adding royalty rates that better accounted for the high oil prices after the first oil shock. Klein, as his critics rightly point out, did leave some money on the table with the generic royalty regime, when viewed from the vantage point of per-barrel take. However, given that his government's overall objective was to encourage additional production they largely accomplished that goal. Overall, this likely increased revenue by increasing the number of barrels produced, even if a smaller amount per barrel went to the government.

Intergenerational considerations did not play a significant role for either Premier Lougheed or Premier Klein when it came to their rent collection policies, despite some actions that could generously be viewed as positive from the perspective of future generations. This is not surprising, given that the intergenerational impacts aren't nearly as obvious with rent collection policies as they are with decisions around whether or not to save non-renewable resource revenue.

3.2 Evaluating Rent Collection Regimes

A rent collection regime includes the total sum of the policies and programs which extract economic rent, the surplus "above the required expenditures [including return on capital investment] to find, develop and produce the resource" (MacFadyen and Watkins 2014, 25). Typically, the focus in the literature is on royalty regimes (Boychuk 2010; Parkland Institute

1999; Roy 2015; Amy Taylor et al. 2004) but rent can also be extracted through bonus bids/land leases (Busby, Dachis, and Dahlby 2011) or even through taxation.

To properly assess the intergenerational consequences of rent regime policy changes, a few things must be considered. First, it is necessary to contextualize actual rent capture with actual rent available wherever and whenever possible. It is easy to point to other jurisdictions that have a higher rate of rent capture as a percentage of the per barrel price and argue that there is room for Alberta to increase its rates, and simplistic comparisons between Alberta and jurisdictions like Norway or Venezuela often make this error (e.g., M. Anderson 2012a; Parkland Institute 1999). But these jurisdictions have differing production cost profiles due to unique economic and geological (conventional oil vs oil sands) factors, which can impact the amount of rent available. Similarly, comparing Lougheed to Klein based on a revenue collection target (Bower, Harrison, and Flanagan 2013; Campanella 2012; Amy Taylor et al. 2004) glosses over differences in cost between conventional oil and oil sands projects. A more accurate approach tries to incorporate those cost differentials. Rent captured as a percentage of rent available, even if estimates of rent available are rife with uncertainty, more accurately evaluates a rent collection regime.

Unfortunately, the data doesn't exist for the oil sands as such. The generic royalty regime now in place is designed for rent collection over the lifecycle of the project. As such, any data available would be based on annual royalties and the costs of production, and analyzing such data to assess the rent over a project's lifetime is inherently flawed. A more accurate approach would be to model the royalties collected over the entire lifespan of a project, which has been done before (e.g., Amy Taylor 2007a). However, even the most sophisticated models can quickly

become outdated. Taylor's analysis, even though it was published during the dramatic rise in oil prices that led up to the 2008 recession, assumes a $51 WTI price. But based on data from the US EIA, that price averaged approximately $71 between May 2007 (when that study was published) and January 2021. Meanwhile, the costs of production have fallen dramatically, especially in the wake of low oil prices that persisted from 2014 until 2022 (Alberta Treasury Board and Finance 2019). In other words, getting accurate data and analysis on rent collection in the oil sands sector is challenging. This dissertation speaks to those challenges from a governance perspective, while leaving the actual modelling to those with the necessary skills.

Second, it is also important to identify which mechanisms count as 'rent capture' – and which don't. Some of the reports (e.g., Van Meurs 2007; Parkland Institute 1999; Price Waterhouse Coopers 2009; Amy Taylor et al. 2004) on the subject include CIT as a means of rent capture and a component of 'total government take'. I do not. I treat corporate taxes as a cost imposed on all businesses regardless of whether they are involved in resource rent collection or not and thus part of the "required expenditures" associated with the development of those resources. That said, 'total government take', including taxes and royalties, plays a significant role in the overall rent collection story. A reduction in tax rates increases the amount of rent available, just as a reduction in royalty rates can increase profit available for taxation, and so both are inextricably linked. For example, the 2007 royalty review panel in Alberta (Alberta Royalty Review Panel 2007) included an analysis by Pedro Van Meurs (2007) highlighting the fact that Alberta was on the low end of total government take comparted to other jurisdictions, while industry representatives continually cited Van Meurs' own outdated 1997 report when the Government of Alberta had a much higher take (Alberta Royalty Review Panel 2007, 23). The

primary change between 1997 and 2007 was a reduction in corporate income tax rates from 15.5% in 2000 to 10% in 2006 which reduced total government take.

It is also important to maintain a conceptual distinction between royalties and taxes when thinking about the rent capture policy mix. An analysis by Price Waterhouse Coopers summarizes why these should be treated differently:

> "Taxes are collected from individuals and business to cover the cost of public spending, such as infrastructure, healthcare and education. Royalties, on the other hand, are the cost of obtaining the benefits associated with a property right - in Alberta's case, the right to develop a resource that is owned by the government representing all Albertans" (Price Waterhouse Coopers 2009, 6).

Third, it is important to evaluate the rent collection on each resource with a time frame appropriate to the regime in place. For example, in the above-mentioned Pembina Institute (2004) report, they evaluate the amount of royalties received from the oil sands over the period 1995-2002. They show, correctly, that the Alberta government experienced a drop in both total royalties, as well as oil sands royalties, following the adoption of the generic royalty regime in 1997. However, this reduction in royalties was expected by the Alberta government because of significant project expansions at Syncrude, Suncor, and Imperial Cold Lake (Alberta Energy 1995a). Existing Crown agreements allowed them to write-off these expansion costs and which reduced the amount of royalties payable.

3.3 Historical Rent Collection

For my historical analysis of rent collection, I differentiate between rent collected by conventional oil and the oil sands. This aids the analysis of historical rent collection in two ways.

First, it allows us to understand how the political and economic factors have shaped the various royalty regimes, and how they are fundamentally different for each resource to this day. The questions in this dissertation concern the *governance* of non-renewable resource wealth. As such, I focus on the decisions of elected officials and policy makers and not on the exogenous factors (such as volatile global markets) which may prove beneficial or detrimental to resource wealth capture regardless of policy decisions. The intention behind policy changes (or choice to remain with status quo), whether explicit or inferred, is thus significant.

Second, the different resources were subject to different pressures which shaped the policy choices made about them. Extending the analysis to a much longer time frame allows me to identify whether certain developments are anomalous, short-term phenomena or part of longer or larger overall trends.

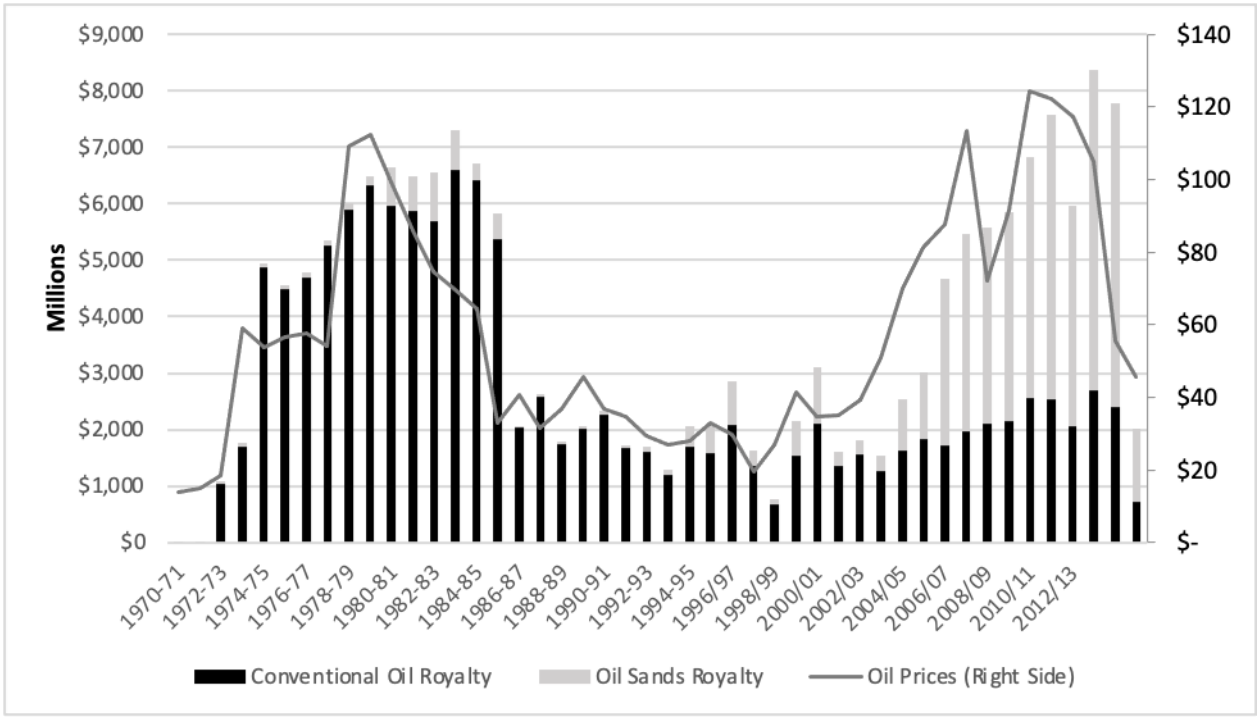

Figure 11: Conventional Oil and Oil Sands Royalties. Source: Alberta Resource Revenue Workbook, BP Statistical Review.

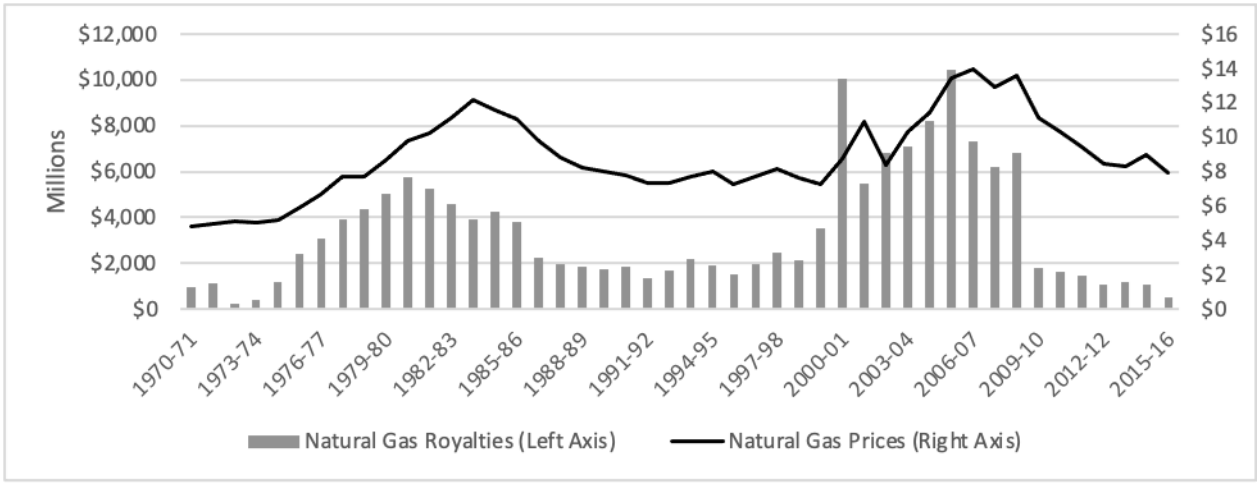

Figure 12: Natural Gas Prices 2015$. Source: US Energy Information Administration

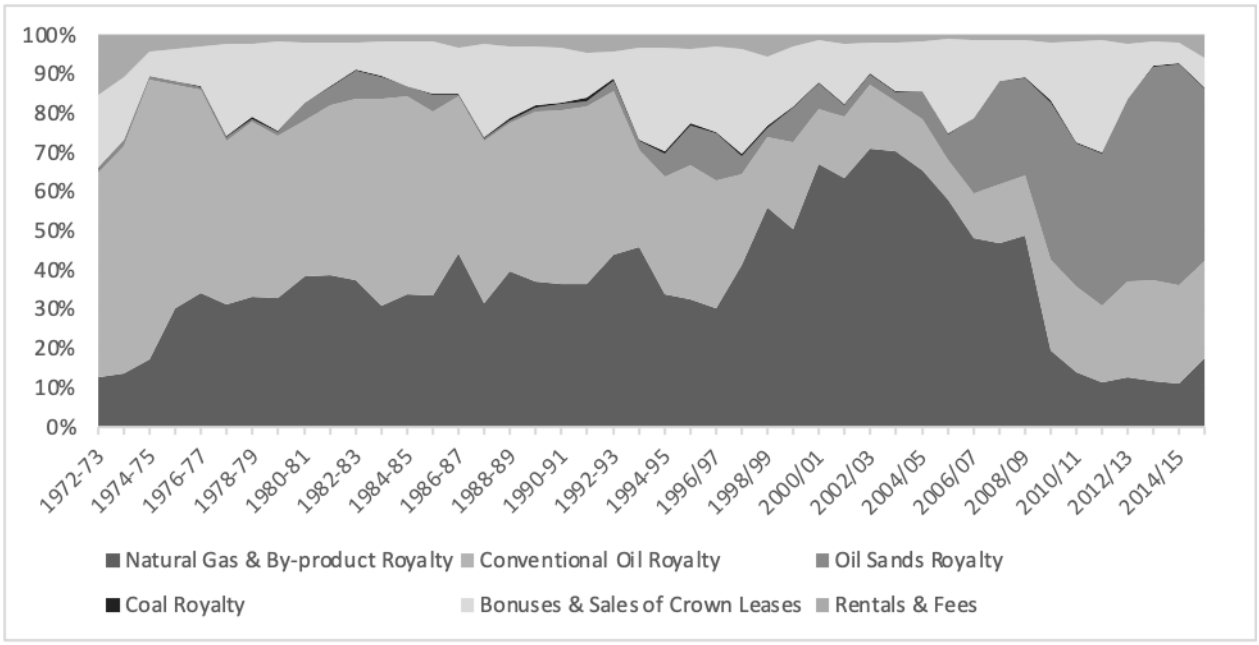

Figure 13: Alberta Historical Resource Revenue as % of total. Source: Alberta Resource Revenue Workbook

Returning to overall revenue we see the highs and lows of Alberta's resource revenue over the past 40 years and how it tracks with oil and natural gas price volatility (see Figure 11 and 12). We also see just how fortunate Alberta was. Looking at both overall numbers (Figure 11) and when viewed as a percentage of the total (Figure 13) we see Alberta received significant royalties from conventional oil beginning in the early 1970s, owing to the first and second oil shocks in the 1970s. Natural gas royalties also increased through the 1970s as natural gas prices

doubled throughout the decade (Figure 12). The 1980s proved to be a challenging era for Alberta as resource prices and revenue remained depressed (Figure 11 and 12) but revenue from natural gas and conventional oil remained roughly equal (Figure 12). In the late 1990s (and 2001 in particular), resource revenue spiked thanks to the unforeseen joint blessing of a natural gas price spike just as natural gas production peaked. This brought in a record $10 billion in resource revenue for a province with budget expenses of approximately $20 billion for that fiscal year. Then, as natural gas prices and revenue collapsed in 2008, the oil sands revenue had increased enough to fill the government revenue gap, albeit not to the same overall level that was seen in the mid 2000s. Over the course of this period (1970 – 2015), Alberta has benefited, and depended on, different resources at different times – first conventional oil, then natural gas, and now the oil sands.[23]

3.3.1 Premier Lougheed and Conventional Oil

The period from 1948-1973 marked the development and maturation of the oil and gas industry in Alberta following the Leduc discovery of 1947. The primary concern during this period was to encourage as much exploration as possible, given that the Leduc discovery had altered what had previously been considered possible. To that end, Alberta relied on bids and auctions to allocate exploratory rights to companies and had a sliding-scale royalty rate from 5 per cent to 16 ⅔ per cent (or 1/6th) of the price of a barrel, based on well productivity (MacFadyen and Watkins 2014, 309). Allocated exploration rights required drilling to occur to establish production rights in a timely manner or the lease was returned to the control of the

[23] While discussion of natural gas as a source of revenue is helpful, the remainder of the chapter will focus on conventional oil and the oil sands. This is because natural gas is largely a by-product of conventional oil production and is consequently never given the same focus or attention as the other two resources from a governance perspective.

province. In addition, pro-rationing policies were maintained to address the 'rule of capture' (as discussed in Chapter 2) challenges that had plagued Turner Valley (Breen 1993; Daintith 2010). Together, these policies achieved two central objectives: "(1) ensuring that exploration proceeded at a level high enough to generate continuing geological knowledge about promising areas of the province that were relatively lightly explored; and (2) ensuring that a significant portion of economic rents were captured by the province" (MacFadyen and Watkins 2014, 313).

The rent collection regime established by the Social Credit government went largely unquestioned for some time. Throughout the 1971 provincial election campaign, the question of resource development and resource wealth governance remained a peripheral issue. While resource governance was one of the "Guideposts" then Opposition Leader Peter Lougheed had penned (#10 of 10) for the 1971 election campaign, this particular one simply reiterated the Progressive Conservative's commitment to develop Alberta's natural resources by private enterprise while seeking to get "adequate" returns (Lougheed 1969). There was little criticism of the way in which the Social Credit government had approached the development of Alberta's resources. The PCs under Lougheed were so supportive of the Social Credit legacy on this file, in fact, that they even commended them for their work, and vowed to maintain the overall structure:

> "We give credit to the Manning Administration of the early 1950's for developing a system which provides a fair balance between incentives for large investment by private industry and a reasonable return to the owner of the oil and gas properties – the people of Alberta through royalties – Crown lease sales and other factors of Provincial Government natural resource revenues…we publicly commit ourselves to maintaining the basic

> system…We are not unmindful of the story of killing the goose that laid the golden egg." (PC Election Platform 1971 Part 4, Section C-1.).[24]

Despite the approval of the status quo, Lougheed's agenda during its first session in the legislature included some adjustments to the royalty framework. They proceeded carefully, establishing a process to allow ample opportunity for public input in line with Lougheed's first guidepost concerning the virtues of public lawmaking:

> "We believe that public laws should be made in public. This principle must be protected against the comfortable drift to government by cabinet or through Order in Council. It must be applied to open the doors of federal, provincial, or any other conferences whose private decisions today profoundly affect our future. The public has a right to know" (Lougheed 1969).

In April 1972 the government published a position paper titled "Tentative 'Natural Resource Revenue Plan' for the Government of the Province of Alberta" (hereafter the "Revenue Plan") (Government of Alberta 1972). The Revenue Plan's objective was to increase the government's annual resource revenue by approximately $50-$90 million dollars, a 21-38% increase over the $233 million received in 1970/71 fiscal year. As noted in the plan, this was equivalent to increasing the royalty rate from an average of 15% to 19-23%.

The Revenue Plan paper outlined four other ways to achieve the same $50-$90 million increase in revenue. They were:

1. Increasing existing royalty rates notwithstanding the existing contractual maximum of 16 2/3%;
2. Increasing royalty rates above 16 2/3% on producing leases, lease by lease, as their respective primary lease terms expire;

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[24] Thanks to Jared Wesley for his generously granting me access to his entire collection of Alberta election platform material gathered for his book *Code Politics* (Wesley 2011).

3. A net profit tax; and,
4. Stipulating an increased wellhead price on the Crown share of crude oil production upon which royalty revenues would be calculated (Government of Alberta 1972, 35).

However, all four options were disregarded for the following reasons:

1. It would damage investor confidence in Alberta oil and gas sector;
2. It would discriminate against companies that took more risk to invest in Alberta oil and gas sector first (as they would be the ones to have their leases expire first);
3. It was administratively burdensome;
4. It would create investment uncertainty and require significant increase in wellhead price to achieve same revenue result (Government of Alberta 1972, 36–38).

Instead, three components of the Revenue Plan were geared towards increasing exploration and production:

1. The continuation of existing royalty arrangements and schedules with the removal of the royalty ceiling on all future leases;
2. The assessment and taxation of the rights to the remaining recoverable crude oil reserves pursuant to the Mineral Taxation Act as amended during the 1972 Session;
3. An Exploratory Drilling Incentive System to stimulate exploratory drilling in Alberta. (Government of Alberta 1972, 39–40).

As part of the effort to increase government revenues, the government held public hearings for the Revenue Plan with interested stakeholders. These public hearings ran from March 23-25, 1972. In total, the Standing Committee on Public Affairs listened to 37 presentations from a variety of groups, including oil companies of various sizes, oil lobby groups (Independent Petroleum Association of Canada (IPAC) & Canadian Petroleum Association (CPA)[25], municipalities, labour interest groups such as the Alberta Federation of Labour and the Alberta

[25] These two associations would later amalgamate and become the Canadian Association of Petroleum Producers (CAPP) in 1992.

Teacher's Association, and a group of high school students from Fairview who expressed concern for future generations.[26]

As one would expect, the 22 groups representing various aspects of the oil industry (oil companies, oil lobby groups, and drilling companies) were opposed to any increase in revenue paid by oil and gas companies that might reduce overall economic activity for the industry. The remaining 15 groups were either supportive (City of Edmonton, Alberta Liberal Party and the Alberta Teacher's Association), felt the government didn't go far enough (the Calgary Metro Council of the NDP, two groups from NDP MLA Grant Notley's riding of Fairview, the Communist Party of Canada and farmer's Unions), or had mixed reviews of the government's plan (the Alberta Federation of Labour and the Calgary Chamber of Commerce).[27]

Throughout these hearings, Lougheed and his caucus members expressed skepticism and frustration with the oil industry's presentations. For example, a memo from MLA David King to Minerals and Mines Minister Bill Dickie (the Minister with overall responsibility for the Revenue Plan) stated that the "oil industry is not providing sufficient alternatives, just critiques of inadequacies."[28]

Lougheed himself expressed suspicion of the claims coming from the oil industry. In response to one presentation, he noted the parallel to the 1960s when oil companies said that changes to the royalty framework would have devastating consequences when the royalty rate

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[26] This group of high school students hailed from Grant Notley's riding. Former Alberta Premier Rachel Notley was not part of this group. She would have been 8 years old at the time. Sadly, a full transcript of their interchanges with Premier Lougheed was not located in the Provincial Archives.
[27] See Appendix 3-A for a summary of positions and overall arguments made by the presentations.
[28] PR1985.0401 – Item 552 "Minutes of Resource Revenue Hearings" – Memo from David King MLA to Minerals and Mines Minister Bill Dickie.

was first increased to a maximum of 16 ⅔%, yet they continued to operate with little difficulty in the following decade.[29] In the margins on his copy of the presentation by H.G. Pearce on behalf of CPA and IPAC, Lougheed (it is assumed) wrote statements such as: "I don't agree with this analysis," "but that was history not future" and "that was the past" at various points in the report.[30] In other words, he felt that an analysis based on 1960s operations wouldn't necessarily be indicative of the profitability of companies in the 1970s and beyond. Lougheed could not know just how correct he would be when the first oil shock would hit a year later.

While the government wanted to realize an additional $50-$90 million in resource revenue, the problem was that approximately 75% of current leases were already contractually covered by the Social Credit government's royalty cap of 16 ⅔%. The Lougheed government was hesitant to unilaterally change those contracts, and it argued that "the implications of unilaterally repudiating such contracts by a Provincial Government would have repercussions on its financial standing far beyond the issue of natural resource revenue" (Government of Alberta 1972). Such a move would damage investor confidence, it believed, and ultimately make Alberta a riskier place for oil companies to invest.

Following this consultation process, the government tabled Bill 54 in June 1972 to amend the Mines and Minerals Act. One of the problems highlighted in the Revenue Plan was that the reserves to production ratio dropped from 33.2 in 1966 to 20.3 in 1971 as annual crude oil production exceeded annual net additions to crude oil reserves (Government of Alberta 1972

[29] PR1985.0401 – Item 552 "Minutes of Resource Revenue Hearings" – Transcript for presentation from Mr. Meeker (Amoco Canada Ltd).
[30] PR1985.0401 – Item 553 "Resource Revenue Plan – Reports"

Table 2 Appendix A). This was due, in part, to lower exploration activity as oil companies began looking in other regions around the globe.[31]

The bill made in three significant changes. The first change involved putting timelines in place for oil companies to drill on their existing leases or face additional costs. The bill allowed oil companies to defer drilling for up to four years for a ten-year lease but required them to pay an additional fee to keep it. The fee schedule charged $1 per acre for the first year, $3 per acre for the second year, $5 per acre for the third year, and $9 per acre for the fourth year. Oil companies were thus charged an increasing amount for the reserves or potential reserves they were sitting on. This created a strong incentive for them to develop those leases. The second change was to create an Exploratory Drilling Incentive which would provide the oil companies a subsidy for exploratory activities in a bid to increase the province's known reserves and hopefully extend production levels for some time. For the government, this was an investment that provided a long-term benefit (by encouraging the identification of more reserves), even though it bore a short-term cost through the subsidy.

The final change was an adjustment in the royalty structure that extended the maximum rate from ⅙ (16 ⅔%) to ¼ (25%) of the value of the oil produced. This new royalty rate was applied to all future leases, which were estimated to include only 25% of production in the foreseeable future. The royalty schedule at this time remained a function of a well's productivity, under the assumption that more productive wells had lower costs and hence a greater amount of rent available for capture.

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[31] See also Figure 14 which shows the peak in reserves in 1969 and Figure 15 which shows the dramatic decline in depletion timeline, as production continued to increase while additions to known reserve dropped off.

Combined, the objective of these changes was clear. While it would bring in additional revenue, it did so in a way that honoured existing contracts oil companies had with the provincial government by maintaining the cap on royalty rates at 1/6th gross value, an issue that was flagged as important in the Revenue Plan. More importantly, it encouraged both the development and the production of existing reserves as well as the exploration for additional reserves. The declining reserve-to-production ratio, and the apparent peak in reserves in 1969, represented a significant shift for Alberta.

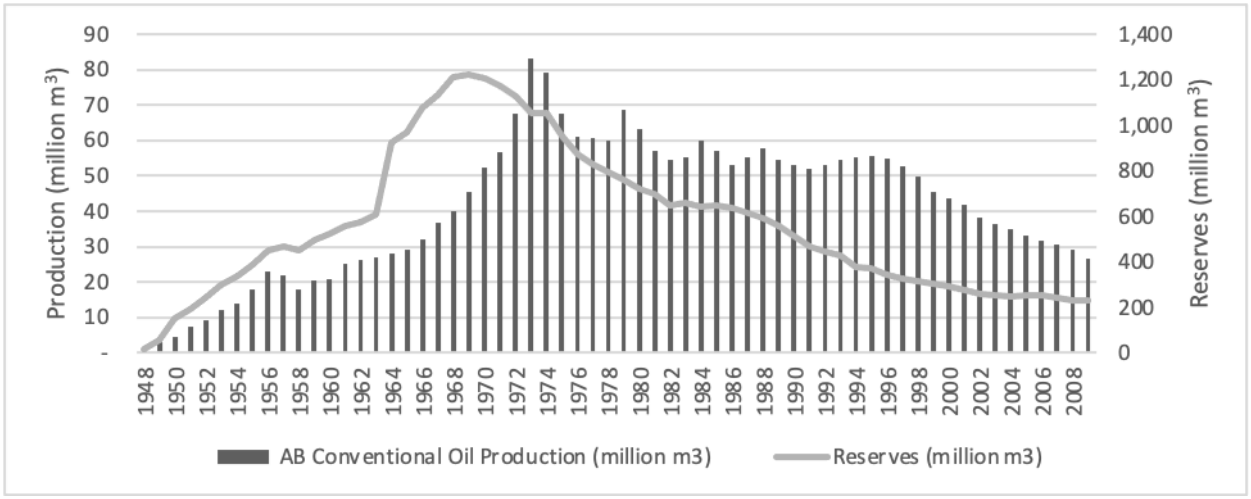

Figure 14: Alberta Conventional Oil Production and Reserves. Source: CAPP Statistical Handbook and Alberta Energy Regulator ST18 and ST98 Reports.

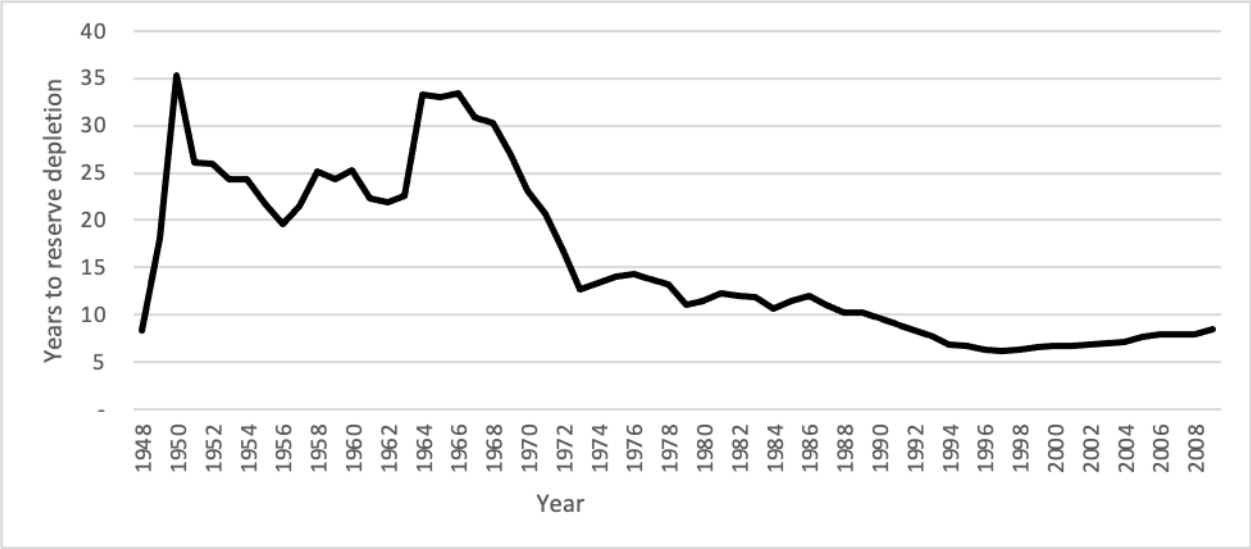

Figure 15: Conventional Oil Reserve Depletion Timeframe. Calculations by author.

It is worth pausing for a moment to reflect on this point. Exploration had and continues to add reserves all the time to maintain and/or increase production levels as existing wells naturally decline in their productivity. However, the peak in reserves (Figure 14) and the dramatic decline in the conventional oil depletion timeline (Figure 15), I argue, represents a considerable shift in thinking – one that served as a wake -up call for the Alberta government in general and Premier Lougheed in particular. While this transition occurred early in Lougheed's tenure, thus providing little time to compare Lougheed's behaviour before and after it, both his actions and his words showed a concerted effort to prepare Alberta for a possible post-oil reality. For example, Lougheed would make the repeated argument that Alberta's conventional oil reserves would be depleted within a decade or so,[32] claims that would be used to justify key components of his own

[32] PR1985.0401 – Item 1646 – Box 147 – Calgary Chamber of Commerce: Speech re: Industrial Strategy, Sept 6, 1974. See also December 4, 1973, Hansard when Minister Dickie stated, "There was information tabled in this House earlier this year, both the National Energy Board statistics and our own energy board statistics, which show quite conclusively that conventional production in all probability will peak out sometime in 1977-78." While it is unclear which report Minister Dickie is referring to, he is most likely referring to a report by the National Energy Board published in December of 1972 and tabled in the Alberta legislature on February 27, 1973 (National Energy Board 1972).

legacy over the following decade, from the creation of the Heritage Fund to numerous diversification and province-building investments. Due in part to his firsthand experience witnessing what a rapid boom and bust of the oil industry did in Oklahoma, a significant portion of Lougheed's agenda was geared towards preparing Alberta for a time when it could no longer rely on non-renewable resources (Tupper 2004, 206). As Lougheed tole the Alberta Legislature on April 23, 1976:

> "For those of you who have not experienced the situation of an area or economy that has passed its peak in terms of its conventional oil and gas industry, I suggest you go, as I did in the early 1950s and latterly, to Oklahoma City and Tulsa to look at one good example of what happens to vibrant communities that have not planned for diversification and for other opportunities."

Returning to the changes proposed in Bill 54, the government developed a thorough consultative process but, in the end, only made minor adjustments to their royalty regime. This shows that while the government may have had doubts about the oil industry's claims about the damaging effect changes to the royalty system could have, the government was hesitant to upset the status quo.

At the end of 1973, the world experienced what would quickly become known as the first oil shock. At the outset, it was caused by an embargo in response to the United States' support and rearmament of Israel during the Yom Kippur War in October 1973 which caused a dramatic drop in supply and increase in oil prices in a matter of months. But it endures over the longer term due to a shift in two significant geopolitical factors (Yergin 1993).

First, the oil shock marked the first time that the Organization of Arab Petroleum Exporting Countries (it would later drop the Arab and become OPEC) was able to leverage oil exports significantly in support of their foreign policy goals against the United States and Israel.

Second, it highlighted the growing dependence of the global economy on oil, and oil from the Middle East specifically. A growing chorus of concerns about 'energy security' or 'energy independence' emerged from this first oil shock, including in Canada. These concerns would feed debates within Canada about Alberta's oil resources, and, in particular, the ability to harness Alberta's vast reserves of oil sands resources.

The effect of this shock was that the price of oil quadrupled from $3USD in October 1973 to $12USD at the end of the embargo in March 1974. Oil companies that were operating projects deemed profitable at $3USD/barrel began reaping windfall returns. This increase in prices fundamentally altered the political dynamics between oil companies and governments, including in Alberta. The oil companies could no longer claim additional rent collection by the government would have devastating effects when their profits had quadrupled within a year. This new dynamic gave the Alberta government the opportunity to make much more significant changes to Alberta's royalty regime than it had proposed in Bill 54.

In October 1973, the province abruptly scrapped its tentative royalty plan and announced that "royalties would henceforth rise with international oil prices" (Oilweek 1973; Pratt 1977, 154). Shortly thereafter, two changes were brought about in December that would pave the way for more substantial changes in early 1974. The first was an amendment to the Mines and Minerals Act (Bill 94). This bill removed the Social Credit's 1/6th royalty rate cap, allowing for a higher royalty rate on the most productive wells. Recall that this was the second option discussed as part of the Revenue Plan, which the government argued was discriminatory against companies who had taken the most risk to invest in Alberta's oil sector. That argument was no

less valid a year later, but the worry about discriminating against companies that were now receiving windfall profits was understandably of less concern.

Alberta also established a Crown Corporation called the Alberta Petroleum Marketing Commission (APMC) (*The Petroleum Marketing Act - Bill 95)* in 1973. The APMC provided the government with some additional tools to manage its resources amid any perceived encroachment by the federal government (Alberta Culture n.d.). It allowed the government of Alberta to set its own oil prices rather than rely on the prices offered by global markets or dictated by the federal government. It also allowed the Alberta government the ability to accept oil as in-kind royalty payments rather than direct monetary payments. This was a direct response to the federal government's export tax that was imposed as a way for the federal government to extract some rent with the massive price increases following the oil shocks. By accepting oil in kind, it would allow the Alberta government to "maximize the value of the Crown's royalties" (Poveda 2017) because oil owned by the province would not be subject to federal taxation as per s. 125 of the Constitution. On December 4, 1973 Minister of Mines and Minerals Bill Dickie stated in a discussion in the Alberta Legislature about the establishment of the APMC that "what we're talking about when we lift the ceiling off the royalty rates and institute a new program [the APMC] which is designed to put the profits that are now going into the federal treasury from the export tax and divert them into the provincial treasury where they belong…" He went on to say that the APMC would also provide the Alberta government with flexibility to control the resources that were under Alberta's jurisdiction: "The province must have the authority, in my view, in legislation to deal with whatever does come out of the federal hopper in the form of a national energy policy."

While Lougheed's tenure was marked by significant battles over Alberta's resources with Ottawa, ones that hit their nadir with the National Energy Program (Doern and Toner 1985), these federal/provincial battles are beyond the scope of this dissertation. Additional research focusing on federal/provincial battles from an intergenerational perspective is warranted, particularly given the fact that the location of the resources, the social construction of ownership rights over natural resources (see Collier 2010, chap. 2), the establishment of a federal system of government in which those social constructed rights are bestowed upon provincial governments, and the arbitrary delineation of those provincial borders[33] means that a number of unrelated factors feed into making Alberta, and its future generations, very fortunate.

In early 1974, two other changes were brought about directly related to the fundamental shifts in the global oil industry following the first oil shock. The first change was the differentiation of oil vintages based on time of discovery. Oil discovered prior to April 1, 1974, would be classified as "old oil," while oil discovered after that date would be classified as "new oil". The logic behind this categorization was that the anticipated value of old oil was predicated on the assumption of much lower price ranges, and so any additional price increase simply increased rents available for capture by government. By contrast, new oil projects were those that became economically viable due to much higher oil price assumptions but would remain uneconomical at lower oil prices. These projects were charged a separate royalty rate to account for those higher production costs.

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[33] Other provincial boundaries for Alberta and Saskatchewan under consideration included a two and three province split with a southern province between the 52nd and 49th parallel. While I could not recover the original source, Appendix 3-C includes the pictures I was able to take of the proposed provincial boundaries. In addition, this does not even begin to unpack the colonial theft that occurred in the establishment of Canada and questions of intergenerational 'ownership' that arise from that history.

The second major change was the application of a price sensitive "supplemental royalty rate". The formula for the royalty rate was set as $S + \left(\frac{kS(A-B)}{A}\right)$, where *S* is the January 1973 royalty, *A* is the Par Price (selling price of oil set by APMC), *B* is the Select Price (selected to derive a base above which the additional royalty would be paid) and *k* is the royalty factor (application of the new vs. old oil rates). This formula allowed for additional rent to be captured over and above the standard royalties adopted in January 1973 (S) that were based on a certain price. Initially, this baseline price (B) was the price of oil in September 1973. As the price of oil increased above that baseline price, the government would extract additional rent at a much higher rate. This formula would not interfere with an oil company's overall profitability or investor confidence, as it was rent that was realized purely by unforeseen price increases following the oil shock. As was noted before, the average realized royalty rate was approximately 15%. The changes brought about in 1972 sought to increase that realized average to somewhere between 19%-23%. The supplemental formula would then seek to collect approximately 65% of the value of the oil that exceeded that base royalty that had been agreed to previously (S).

These changes represent a much more aggressive and unilateral action from the government to increase its resource revenue through the capture of rent. It would capture some but not all of the rent resulting from increased oil prices – in other words, an additional percentage of a rapidly increasing pie. Combined with the price increases from the first oil shock and the second that would follow in 1979 (due to the Iranian Revolution), these actions would increase its resource revenue by over 1600% by 1981/82 (Government of Alberta 2018).

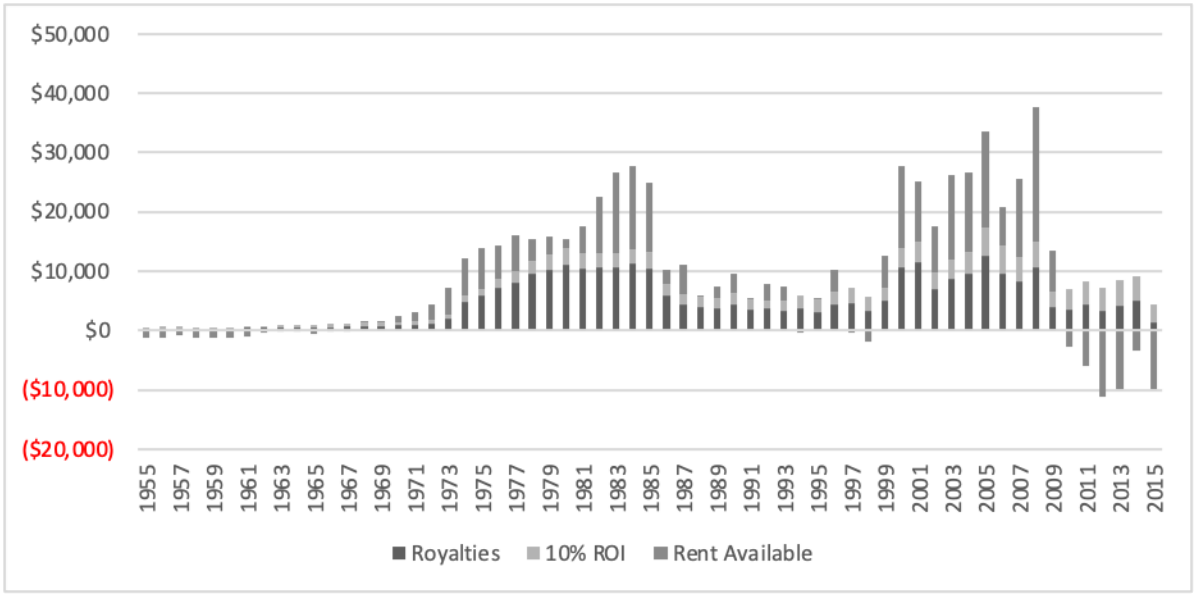

Figure 16: Conventional Oil Rent Capture 2008$ (Millions). Source: Author's calculations using data from CAPP Statistical Handbook (2015).

When we look at the actual rent captured during this period for conventional oil (Figure 16[34]), two things stand out. First, the uncaptured rent (rent available) for conventional oil largely tracked the significant price increases during the oil shocks in the 1970s and again in the 2000s. The price increases during the 2000s were due to the Iraq war in 2003 and slowing growth of oil production alongside exponentially growing demand from China and other developing economies. This led to speculation about peak oil supply (e.g., Rubin 2012), which never materialized, in large part due to the commercialization of fracking technology which unlocked significant amounts of previously uneconomic oil and gas reserves. The adjustments to the

[34] To evaluate the rent capture from 1971-2006, using data from the Canadian Association of Petroleum Producers (CAPP) statistical handbook (Canadian Association of Petroleum Producers 2015), I identify the amount of rent available each year by calculating the value of the resource produced and estimating the costs of production, allowing for a reasonable return on capital deployed. I include capital and operating expenses in the year in which they were incurred and do not amortize capital costs, but, where necessary, I discuss the lifetime revenue potential of the royalty regime. I use data available from two primary sources to make these calculations: the CAPP Statistical Handbook (Canadian Association of Petroleum Producers 2015) and a resource revenue workbook maintained by Alberta Energy (Oduro 2018). While a more refined framework may be able to ascertain a more accurate accounting of available and captured rent, this approach provides a historical snapshot that is sufficient.

conventional royalty system allowed for more responsiveness to price fluctuations amid significant price volatility.

Second, during the leaner Getty years the rent available was minimal, suggesting the system in place worked quite efficiently at capturing the available rent during periods of historically average prices and price stability. However, it failed to effectively respond to price volatility as the rent available increased dramatically in the 2000s during times of high oil prices. In fact, the system over-captured rent from 2009 and onward.

3.3.2 Klein and the Oil Sands

As the oil sands industry was first getting established, royalties were negotiated on a project-by-project basis. The first operation of a commercially significant scale was the Great Canadian Oil Sands project, known today as the Suncor base mine. It first began operating in 1967, largely as the result of a determined Sun Oil chairman named J. Howard Pew (G. D. Taylor 1985). His company's plant sought to demonstrate the commercial viability of the oil sands. At first, the government used prevailing royalty and income tax regulations that were in place for conventional oil, ones that had specific rates for production volumes (MacFadyen and Watkins 2014, 164). After 1987, Suncor moved to a net royalty system with a minimum royalty rate, which was the greater of 30% of net profits or 5% of gross production (Masson and Remillard 1996).

The next major plant to be approved, and the first during the Lougheed government, was the Syncrude plant. After intense negotiations, which included the provincial government walking away from the table at one point (Wood 1985, 114–15), the Alberta government secured

an agreement to allow the Syncrude project to proceed. This saga is well detailed in Larry Pratt's *Tar Sands* (1976).

With a 5% equity stake, the Alberta government would receive 50% of net operating profits once the initial investment costs were recovered, while an agreed upon 8% return on investment was collected by the Syncrude Consortium. This allowed the Syncrude mine, one of the most capital-intensive petroleum projects to date at that time, to account for its high capital costs associated while still allowing the government to claim a significant share of the revenue. The 50% number was a critical component of the sales pitch made in government communications about the project following its approval. Shortly after an agreement was reached, Premier Lougheed made a televised announcement with that number emblazoned on the screen in a banner throughout.

But at the end of 1974, Atlantic Richfield, one of the Syncrude Consortium partners, pulled out to pursue other opportunities in Alaska. This forced the federal, Alberta and Ontario governments to step in put up a 30% equity investment (15% by federal government, 10% by Alberta, and 5% by Ontario) worth a total of $600 million. In addition, Syncrude would also be able to deduct its royalties from federal and provincial income taxes (Pratt 1976).

Whether this was a better deal for the government or the oil companies involved is open to debate. Pratt (1976), who analyzed the project from a political economy perspective, argues the government got less than it could because it had very little leverage against the oil companies involved. Had the government not written off the possibility of establishing a state-run oil company, even as a threat, he argues they would have been in a much better negotiating position.

But David Wood, a long-time confidant of Premier Lougheed, member of his administration, and later his biographer (Wood 1985), suggested that there was little else the Lougheed administration could have done. The near-collapse of the Syncrude deal and resulting investment from the Alberta, Ontario, and federal governments suggests that's probably the case, although it's difficult to assess what effect the Pratt counter-factual would or could have had on the overall agreement. Regardless, commentators today view the Syncrude deal as one that was very beneficial for the province (e.g., Taft 2017).

Finally, in 1985 Imperial Oil developed the first *in situ* project at Cold Lake using a process called cyclic steam stimulation (CSS).[35] The royalty terms for this project began at 1% of gross revenue at the start-up and increasing by 1% every 18 months until it reached a maximum of 5% until the project reached payout. It then converted to the greater of 5% of gross production or 30% of net revenues (Masson and Remillard 1996).

3.3.2.1 Generic Royalty Regime

The single most substantial change to the oil sands royalty framework occurred in 1997 with the adoption of the generic royalty regime. This change was the result of a four-year process that began with a National Task Force on Oil Sands Strategies in 1993, led to the approval and announcement of the generic royalty regime in October/November 1995, and resulted in final implementation of the regime following the passage of Bill 12 amending the Mines and Minerals

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[35] CSS is an extraction technique where a single well is drilled, and steam is injected into the reservoir to melt the bitumen and then extracted. The cycle then repeats. In contrast, Steam Assisted Gravity Drainage (SAGD) is another *in situ* extraction technique where two parallel horizontal wells are drilled allowing one to continually pump in steam and the other to continually extract bitumen. https://www.oilsandsmagazine.com/technical/in-situ

Act on May 29, 1997 (Mitchell et al. 1998). The Task Force was a combined government and industry effort, one with the overarching objective of answering a deceptively simple question: "Should oil sands development proceed?" Its objective was to identify the barriers (technical, economic, regulatory, etc.) that hindered additional development of Alberta's oil sands. Up until this time development was limited to the Suncor and Syncrude mines, the Imperial Oil *in situ* project in the Cold Lake region, and a few other smaller experimental projects.

It is worth noting the narrow scope of the Task Force (which, admittedly, mirrors this dissertation, as it is narrowly focused on the wealth of oil and gas development and therefore ignores the massive environmental intergenerational liabilities that have developed). The Task Force, even though it was asking whether the oils sands development proceed, was really focused on *how* to make oil sands development proceed. The composition of the Task Force, which included oil executives and government employees focused on identifying the barriers to development, did not truly examine the potential liabilities that could result. This is highlighted by the fact that over 25 years later, the industry still does not have a clear answer for what to do with the massive tailings ponds that have been created by the oil sands mines. One estimate (which was characterized as a worst-case scenario by then Minister of Environment and Parks Shannon Phillips) pegged reclamation costs at $260 billion (De Souza et al. 2018). Additional representation from other civil society groups would have undoubtedly answered the question of *should* the oils sands development proceed much differently.

The Task Force had 53 members in total, including six from the Alberta government and seven from the federal government, divided up into six sub-committees covering fiscal and economic issues, environmental regulations, science, and technology, among others Appendix 3-

B. The Task Force published its report in early 1995 (National Task Force on Oil Sands Strategies 1995).

It identified the lack of a consistent, project-neutral royalty framework as a central economic barrier to the development of oil sands projects. When royalty agreements were negotiated on a project-by-project basis, additional costs, uncertainty, and risk were placed on potential producers as the terms of any agreement were not known beforehand. Companies would have to invest considerable resources in both planning and negotiations with the government before being able to determine whether or not a project was economically viable.

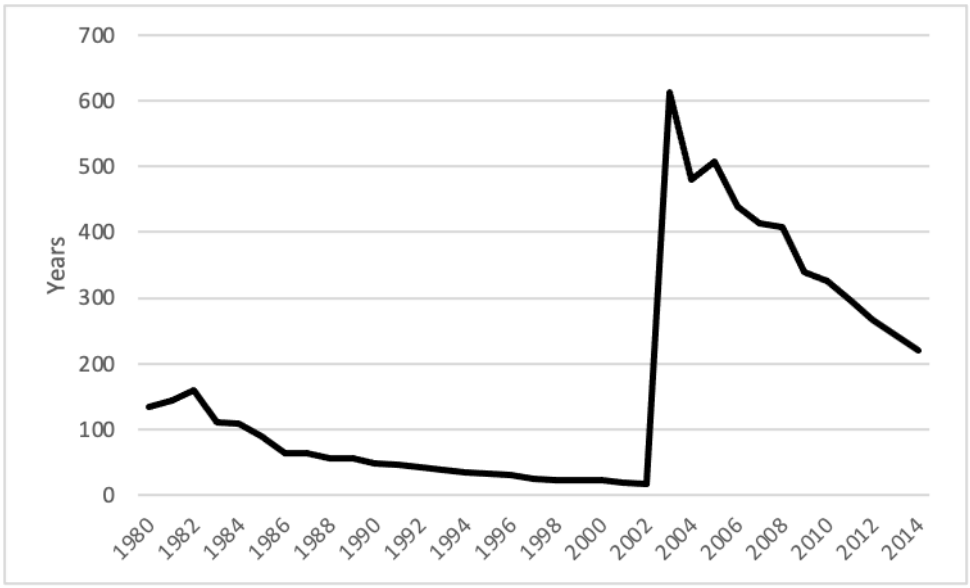

Figure 17: Oil Sands Reserve Depletion Timeline. Source: U.S. Energy Information Administration (EIA).

A stabilized royalty framework, by contrast, required less work to plan, propose, and negotiate individual projects. This framework provided additional cost certainty to producers which in turn reduced the costs of capital from investors as they could more clearly outline potential payoffs of various projects. When resources are scarce or assumed to be scarce in a short amount of time (as was the case with Lougheed operating with a 10-year depletion timeline

for conventional oil) getting the maximum amount per barrel is a higher priority. When the timeline for depletion is measured in centuries (Figure 17), the government is less concerned about maximizing that per barrel take and more concerned with getting the product developed and increasing revenue, which was negligible at the time, through increased production.

Moreover, oil sands mines were treated more favourably than *in situ* projects in the provincial and federal tax system, even though only a small percentage of oil sands reserves were recoverable by surface mining techniques.

The recommendations by the Task Force sought to eliminate the investment uncertainty for oil sands projects. It proposed a Generic Royalty Framework that was a combined royalty and tax system it characterized as a "pure resource rent tax".[36] It included:

- **Tax:** immediate write-off of all capital; normal 25 percent resource allowance.
- **Royalty:** no gross royalty; net royalty after recovery of costs [in the 25-30% range]; no uplifts on operating and capital costs; interest allowance on costs carried forward indexed to the long-term bond rate; no royalty fee natural gas (for processing). (National Task Force on Oil Sands Strategies 1995, 26).

After the Task Force's report and recommendations were released in May 1995, the Alberta government approved the Generic Royalty Regime in cabinet on October 31, 1995, and publicly announced it on November 30, 1995 (Mitchell et al. 1998). For the Klein government, this was more an administrative change to streamline and provide consistency for future oil sands companies and projects rather than a deeply political issue. With the consultation that

[36] Masson and Remillard (1996) also characterize it as such. See Garnaut and Clunies Ross (1979, 1983) for a more in-depth description of a resource rent tax.

occurred with the Task Force, most were already largely on board. Alberta Liberal MLA and future Alberta Liberal party leader Ken Nicol said as much in response to the tabling of Bill 12:

> It's a good Bill. I think this is one that the industry has brought forth with a lot of their suggestions, a lot of the efforts they've put into it. The consultation that's gone on over the last number of months has probably made sure that almost everybody is onside with this Bill.
>
> I guess the only group I've spoken with that really aren't a hundred percent behind this are the paper shufflers…I'd like to just congratulate the minister and the staff for the work that they've done bringing forth a real generic system of royalty for the oil sands projects. It makes a clearer picture of what different businesses are getting involved in. It allows them to understand beforehand how they're going to fit in relative to everybody else who's in the industry. There's a real good opportunity here now for more confidence, more certainty for the groups that want to come in and invest in what is the world's largest reserve of oil or oil products. So we've got a lot of opportunity there.

The most political component of this process was negotiating how the government would respond to the Task Force's recommendations, as internal government documents suggest the government felt it was under pressure to support this new royalty regime. As Deputy Minister of Energy Rick Hyndman wrote in an internal briefing memo to Energy Minister Black,

> "Given the Task Force's significant effort over the past two years, a government response that is not supportive (for example reduced resource allowance and no other tax changes) could result in a reassessment of some of the $2 billion of investment currently being considered by the industry. Alberta stands to benefit the most from this investment and the federal government is watching for our response on royalties." (Hyndman 1995; see also Alberta Energy – Oil Sands Development Branch 1995)

The objectives of a generic royalty regime for the government were fourfold. It would:

- *Accelerate the development of the oil sands while ensuring a fair return to the resource owners - Albertans.*
- *Facilitate development of the oil sands by private sector companies. Development must occur because businesses expect to make a reasonable profit from the venture. Alberta will not directly participate through grants, loans, loan guarantees, or any other "special" deals.*

- *Ensure that oil sands development is generally competitive with other petroleum development opportunities around the world.*
- *Create a standard set of royalty terms for new projects to create a clear, stable system.* (Mitchell et al. 1998)[37]

In developing the generic royalty regime, some modifications were made from the Task Force recommendations. According to internal documents, two issues were most significant: the return allowance and the minimum royalty. The return allowance is the inclusion of a return on investment for the company when determining the switch from pre- to post-payout. If there is either high inflation or low oil prices, these can significantly delay when the post-payout regime and rates kick in. A minimum royalty also delays when a project transitions to post-payout, as it would add additional costs at a time when revenues are low. But without a minimum royalty, the government would receive nothing for its resources for a decade or two, potentially, depending on the project's capital costs.

Both components dictate at what rate the net revenue royalty rate should be set. According to an internal presentation the following points were considered:

- *if there is no minimum and there is a return allowance (i.e., purer resource rent royalty) the royalty rate could be 30 or 35% since it would only be payable after the developer had earned his cost of capital. A 30% rate would equate to a*

[37] These objectives were repeated at various points in internal briefing documents acquired via a Freedom of Information and Privacy Act request. In a Briefing for Energy Minister Patricia Black dated March 27, 1995 (Alberta Energy 1995b), the objectives were similar with one notable change: "To **encourage accelerated development** of the oil sands; To **remain essentially revenue neutral** in the short-term, recognizing the potential for increased royalties over the longer-term from increased production; To **create a level playing field** so that all participants in the oil sands are treated equally and know where they stand relative to each other; To **reduce uncertainty** for new entrants and new projects by having the royalty terms clearly set out in advance." The "remain revenue neutral in the short-term" highlights the goal of the regime was in fact about increasing production and development and less about increasing per barrel capture of the resource. This 'revenue neutral in the short-term' objective was likely dropped as the government's own analysis expected a significant drop in royalties from $512 million in 1996/97 to $50 million in 1998/99 immediately following adoption of the generic royalty regime (Mitchell et al. 1998).

marginal rate of 62% including taxes and royalties, and would still leave some incentive for developers to reduce costs and increase profits

- *if there is no return allowance and there is a minimum royalty, a 25% rate may be more appropriate, as the 5% reduction from the standard 30% in situ rate would off-set the loss of uplifts* (Alberta Energy n.d.)

The government was also critical of the idea of a return allowance:

> *This is our biggest point of departure from the Task Force. The Task Force maintains that governments should receive no royalty until the project has begun to earn a true "economic rent," i.e. until the developer has recovered construction costs and his cost of capital. We disagree because:*
>
> - *The governments are **not taking all** of the economic rent, they are **only sharing** in it; therefore they should be able to commence sharing in returns before true economic rent becomes available.*
> - *Delaying royalty until construction costs and losses are recovered provides a **strong incentive** to the **developer,** and displays **ample patience** by government.*
> - *To delay royalty until after the developer has recovered his cost of capital implies that the government (resource owner) has a **lower payment status than equity** holders.*
> - *Societal demands for social returns at times when the project is earning positive cashflow, but before cost of capital is recovered, may result in a **potentially unstable** regime.*
>
> *A possible trade-off for a return allowance would be to impose a minimum gross royalty until the net royalty becomes payable (i.e. until payout of costs and return allowance is achieved). This latter alternative would generally yield much lower revenues for the government, and would result in other distortions.* (Alberta Energy 1995b emphasis in original)

	Task Force Recommendation	**Generic Royalty Regime**	**Syncrude**	**Other Crown Agreements**
Minimum Royalty	None	1% Gross revenue	None	1%-5%
Return Allowance	Yes; Long Term Bond Rate	Yes; Long Term Bond Rate	None	Yes; 10%
Net Royalty Rate	25%-30%	25%	50%	30%
Allowable Costs	All costs allowed immediately	All costs allowed immediately	None	All costs allowed immediately

Table 3: Oil Sands Royalty Regime comparisons (Alberta Energy 1995a). Actual Table included in Appendix 1-A.

In the end, the Alberta government decided to implement a minimum royalty rate during the pre-payout period while allowing for a return allowance. It agreed that a minimum royalty discouraged development because it forced companies to pay royalties at a time when they could least afford it, but still wished to get some of the value of the resource (Masson and Remillard 1996). The government implemented a 1% gross royalty which was low enough to not discourage development but would still allow the province to get some value from the resource (see Table 3 for a comparison of the Task Force recommendations, the Generic Royalty Regime with existing Crown Agreements (Masson and Remillard 1996; Mitchell et al. 1998)).

In the post-payout period, the Task Force recommended a net revenue royalty in the 25%-30% range. However, because the government implemented a 1% gross royalty during the pre-payout period it reduced the net royalty rate post-payout to 25% in a compromise noted above. The rationale for this according to Paul Precht (a Ministry of Energy employee and Task Force member), was to arrive at a one-third split of net profits between the company, the federal government, and the provincial government (Davies 2013). By the Alberta government's own assessment, a new *in situ* project would come close to a one-third split. Other analysis showed a split of 38% for industry, 38% for Alberta (25% royalty, 13% tax) (Alberta Energy 1995a), leaving 24% for the federal government (Masson and Remillard 1996), recognizing the companies would also need to pay municipal property taxes as well.[38]

[38] Conceptually, I view corporate income tax separately from royalties. Royalties are more explicitly designed to capture rent, whereas corporate income tax is focused simply on general economic activity whether in sector involved in a rent collection or not. However, corporate income taxes, even if not an explicit rent collection mechanism, do add costs for companies which in turn reduces the amount of rent available. Any reduction of corporate income taxes as a means of stimulating broader economic activity should be paired with an increase in

When comparing the generic royalty regime to the Syncrude agreement, the generic regime had a lower net revenue royalty rate. For example, it was 25% compared to the 50% Syncrude paid, while both allows for initial capital costs to be recovered. However, unlike Syncrude the generic royalty regime did not require an investment by the Alberta government. Combined with the lack of a minimum royalty, return allowance, or allowable capital costs, which meant that the Government of Alberta was taking on a greater share of the risk of the Syncrude project and thus was entitled to a greater share of the reward.

While negotiating royalties on a project-by-project has been viewed in a negative light thus far because it is not consistent or transparent, some view it positively as it allows the government to "squeeze the most value from oil sands projects" (Taft 2017, 144; see also Chastko 2004, 141ff). The logic behind that idea is what is known as 'obsolescence bargaining' (Jenkins 1986; Vernon 1971). This theory states that the power dynamics between oil companies and host governments will change over time to the advantage of the government. Resource extraction requires knowledge of the quantity and quality of the resource, techniques and technologies to extract the resource (in some cases the development of new techniques and technologies to deal with specific geologies), and other expertise (see also Collier 2010, chap. 4). These unknowns create greater risk for companies which requires additional concessions from the host government to make certain resource extraction projects economic. As this knowledge increases, the risk goes down requiring fewer concessions and creating additional rent available and the host government can seek to revise the initial "obsolete bargain".

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rent collection (royalty rates) equivalent to the reduction in corporate income taxes for those specific industries, as the amount of rent available for capture increases.

However, what we see in Alberta is not a gradual ramping up of royalty rates over time, but rather the opposite. According to some government officials, one objective of the generic regime was to stop the steady erosion from the benchmark terms of the original Crown Agreements as each new developer negotiated slightly better terms to "make their project go" (Mitchell et al. 1998). Each project would also have individual agreements that would allow for "flexibility in royalty arrangements to accommodate project specific concerns" (Masson and Remillard 1996). For example, one arrangement allowed Suncor to reduce its royalty payments in order to go ahead with capital improvements to reduce odour and SO_2 emissions in connection with the government's Clean Air license renewal program.[39] If expansion of the oil sands was going to continue beyond 1995, a more formal royalty structure would be required to give companies more cost certainty going forward.

3.3.2.2 Critiques of the Generic Regime and the Task Force

Since the creation of the generic royalty regime, a number of critiques have been made, particularly from left-leaning think tanks such as the Parkland Institute (Boychuk 2010; Parkland Institute 1999; Steward 2017) and the more centrist Pembina Institute (Amy Taylor et al. 2004; Amy Taylor and Raynolds 2006). The arguments are as follows:

1. Oil sands only became possible due to generous government funded research and development and so a higher royalty rate is warranted;
2. The generic royalty regime rates are not high enough for Alberta to receive a "fair share" and that this is largely due to the fact that the industry wrote the rules.

[39] Tom Collins. *Memorandum: Suncor Royalty Credit Pool*. Provincial Archives of Alberta, Accession No. GR2004.0841, Box 4, Item 21050-001.

The first critique, identified by Boychuk (2010), deals with the fact that oil sands operations today are largely due to the work of government-funded research and development. From the early days of Karl Clark developing the hot water separation technique utilized in the Suncor and Syncrude mines (Chastko 2004), to the more recent advances in *in situ* techniques (such as Steam Assisted Gravity Drainage and CSS) developed by the Alberta Oil Sands Technology and Research Authority (AOSTRA), much of the technology driving the oil sands has been government-funded.[40] Since its creation in 1974 by Premier Lougheed, AOSTRA spent approximately $800 million over 25 years researching the technology that would unlock over 90% of the oil sands reserves that were buried too deep for strip mining extraction techniques. The concern for critics like Boychuk is that the generic royalty regime did not account for the government's efforts to develop the resource, and that private corporations were profiting from government-funded research as a result.

However, looking at this from a long-term perspective within the larger context of global energy politics, a different picture emerges. When Premier Lougheed established the AOSTRA in 1974, the Syncrude agreement had just recently been rescued, thanks to 11th hour negotiations by both Premier Lougheed and then-President of the Treasury Board and eventual Prime Minister Jean Chretien (Pratt 1976). The GCOS plant had yet to turn a profit and, despite the riskiness of oil sands projects at the time, the Syncrude consortium felt the gamble was worth it. The first oil shock had recently altered assumptions around the planet about global energy supplies and raised questions of energy security. Alberta's oil sands were viewed as a potentially

[40] For an in-depth examination into the history of AOSTRA see Hastings-Simon (2019). It is also worth noting that the Alberta government also made investments in post-secondary education in a number of areas (e.g., petroleum engineering) to aid and support research and development related to the oil sands.

more reliable source in a context of global uncertainty. Yet the Alberta government recognized some effort on their part was required.

First, the oil sands needed to be made commercially viable and competitive with other sources of oil that were at similar stages of exploration, such as Alaska's north slope (where Atlantic Richfield, one of the Syncrude consortium's original partners, opted to put its money instead of in Syncrude), or discoveries in the North Sea (Andersen 1993; Noreng 1980) and Colorado oil shales (Pratt 1976, chap. 6).

Second, there was a belief in the mid-70s that oil and other fossil fuels could themselves be rendered obsolete by new energy technologies such as nuclear and solar. Premier Lougheed said that "nuclear energy could render obsolete, and a useless asset, the Alberta oil sands and the history of all that is involved" (Pratt 1976, 72). While hindsight may make it appear the government subsidized what would eventually become a very lucrative economic venture, the reality was that the government was investing to develop a resource from which it would benefit before the resource became obsolete and worthless. Moreover, the overall scale of the investment – $800 million over 25 years or $32 million annually – is a pittance when compared to the overall potential value of the resource to the Alberta government.

The second, and more persistent and substantial critique, is that the generic royalty regime royalty rates were too low or Alberta wasn't getting its "fair share" (Parkland Institute 1999; Steward 2017; Amy Taylor et al. 2004; Amy Taylor and Raynolds 2006). While these are normative judgements, they are largely correct. The generic royalty regime did not maximize the per-barrel take at the outset. But from the perspective of the people designing this system, this was an intentional feature not a flaw. And, from an intergenerational perspective (one focused on

revenue generation), this turned out to be a very fortuitous policy decision, given the potential for a near term peak in oil demand.[41] It allowed the rapid expansion of the oil sand at a time when oil prices were at some historical peaks in the mid-2000s and allowed oil sands projects to get up and running just prior to global efforts to reduce emissions and reduce oil demand began to take hold. A delay of a decade instituting the generic royalty regime would have dramatically reduced this window of opportunity for Alberta from a revenue perspective.[42]

What the critiques miss is that the generic royalty regime became more generous over time, and unnecessarily so, due to the inclusion of corporate income tax as a rent collection mechanism.

It's first worth noting that some of the earlier critiques suffered from methodological issues. For example, the 1999 report published by the Parkland Institute (1999) argued that Alberta's oil sands royalties were too low but failed to accurately account for the actual rent that was available. The higher capital costs of oil sands projects in Alberta meant less rent was available when compared to other jurisdictions like Norway, something their analysis didn't include.

Other reports failed to fully account for the temporal structure of the generic royalty regime in their analysis and assessment. A Pembina Institute report (Amy Taylor et al. 2004) analyzed the oil sands royalties, but did so on an annual basis rather than a project lifetime basis.

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[41] A more comprehensive intergenerational assessment, beyond the scope of this dissertation would also include the buildup of environmental liabilities such as tailings ponds, downstream leakage impacts, and climate change.
[42] Without the potential obsolescence of the oil sands, an alternative could be imagined where oil and gas continue to enjoy their role as incumbent energy sources for years to come. In such a scenario, oil sands could be viewed as a form of capital in the ground and the rent collection policy goal would be to extract it when the value is highest, potentially later in the future when other energy sources are scarcer.

The report found, not surprisingly, that in the years following the implementation of the generic royalty regime there was a significant drop in oil sands royalties. But this is because the regime was designed to have low royalties in the pre-payout period so that companies could recover their costs before the net revenue royalty rate kicked in. The government's own analysis expected a significant drop in the short-term (Mitchell et al. 1998), but with an increase in royalties in future years, along with increased development of the resource that would result in additional future revenue. In 2023, many projects are beginning to enter that post-payout phase dramatically increasing the resource revenue collected by the Alberta government.

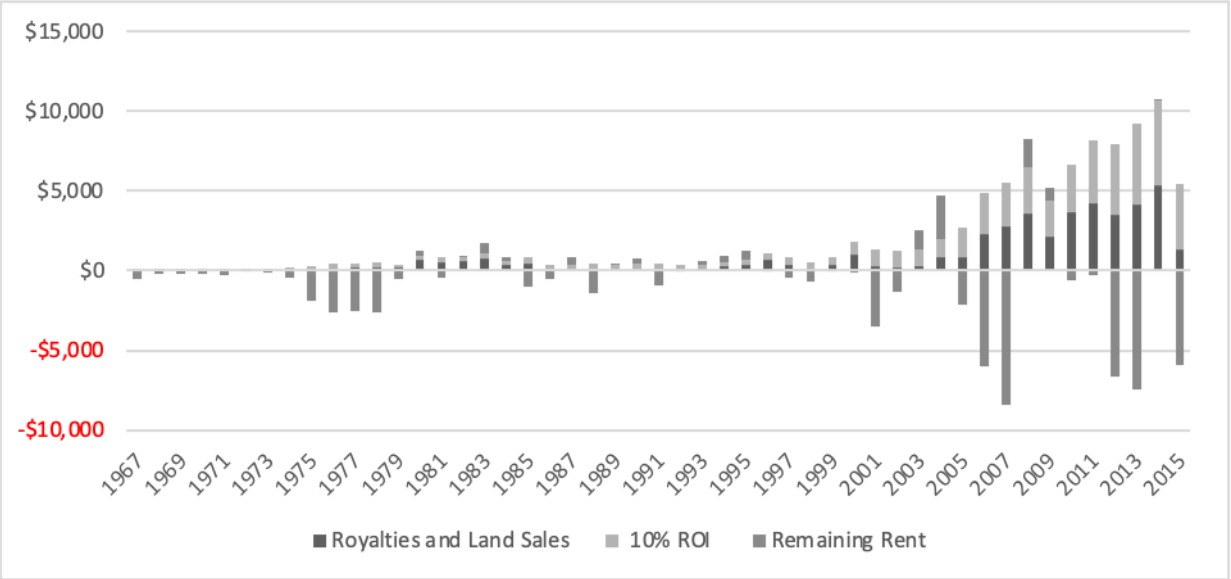

Figure 18: Oil Sands Rent Capture (Millions 2008$). Source: Author's calculations using data from CAPP Statistical Handbook (2015).

By conducting a similar analysis of oil sands rent capture (Figure 18) to the one that was done on conventional oil above (Figure 16), we see this issue clearly. Between 1996 and 2015, six years show rent left uncaptured. In all the other years, the remaining rent is negative. This is simply because in many of those years, the capital spending/investments of oil sands companies largely exceeded the rent available on an annual basis but would pay out for these projects in the long term. This is also why 2008 and 2009 show rent remaining, as capital spending slowed

substantially during the Great Recession. This illustrates the challenge of trying to assess rent capture on the overall lifetime of these projects when relying on annual data. As mentioned before, a sophisticated model would be better situated to assess the overall project lifetime return, but even such models are laden with assumptions and expectations that have and are constantly changing over the past five years, especially as the pace of the energy transition and potential peak oil demand accelerates.

Despite these methodological issues, there is validity to the argument that royalty rates were low, at least with respect to per-barrel take. However, at the outset, they weren't completely out of line with existing Crown Agreements. When comparing the generic royalty regime to the existing Crown Agreements (Table 3 above) we see a significant drop in the net revenue royalty rate from Syncrude (50%) to the generic royalty regime (25%). However, upon closer inspection we see a significant similarity between the generic royalty regime and other Crown Agreements, with Syncrude as an outlier (in how it accounts for costs and includes revenue sharing).

By not having a minimum royalty rate, in years when Syncrude's expenditures exceeded its revenue the government received no royalties at all.[43] Moreover, Syncrude required a significant equity position from the Government of Alberta and by sharing that risk the government was able to extract a higher royalty rate.

Even with this consistency with existing Crown Agreements, the decision to keep the rates low was an intentional policy choice, and the government admitted that it was not

[43] As an example, see Government of Alberta. Summary of Oil Sands Royalties Collected: 1990 Report Ending June 30. Provincial Archives of Alberta, GR2005.0634, Box 4. Item 18201-0.

extracting all the rent available but rather "sharing in it" (Alberta Energy 1995b) for several reasons. The first was to encourage innovation (Masson and Remillard 1996). Oil sands projects were just beginning to mature, and *in situ* technology was still at the experimental stage. The provincial government recognized that a major barrier to the oil sands being competitive globally was (and remains) the cost of production. Capturing too much rent, while still theoretically neutral from an economic perspective, would undermine the incentive to reduce costs as the savings from those efforts would lead to more rent collection by the government and not greater profits for the company. A net royalty rate that leaves some rent on the table gives companies an incentive to reduce costs, which in turn increases the amount of rent available and benefits both the company and the government.

There's also the matter of administrative simplicity, one that's best described by regime architect Richard Masson:

> *If the net revenue royalty rate is very high, the return allowance rate would have to equal a developer's risk adjusted cost of capital in order to ensure that royalty is only collected on the project's economic rent rather than on the return to capital. Even if accurate identification and measurement of all project costs could occur, each project would still have a unique risk adjusted cost of capital. The simpler approach chosen is to establish a single return allowance rate for all projects. Alberta chose to set the return allowance rate below developer's costs of capital, and the net revenue royalty rate below the level that would capture 100% of the project's rent.* (Masson and Remillard 1996, 7)

In other words, the complexity of determining the rent available on a project-by-project basis was administratively burdensome, and risked extracting not just the economic rent but the 'return to capital', which would make the royalty regime no longer economically neutral. The government decided it was better to err on the side of being too generous.

The final and most significant reason the royalty regime left some money on the table is because a central objective of the generic royalty regime was to "accelerate the development of the oil sands" (Mitchell et al. 1998).[44] Since Syncrude, a few other projects had come online, particularly Imperial Oil's CSS project near Cold Lake, but very little capital investment had flowed into the oil sands. The government was faced with an enormous reserve of untapped potential resources and needed to figure out a way to encourage its development. By creating a royalty regime that left some rent available for capture by industry and allowed for the rapid recovery of costs, a strong incentive was provided to encourage development and increase production. As the Pembina Institute noted: "The Alberta government's Generic Oil Sands Regime collects only 1% of total revenue until all capital costs (for new projects and expansions) are recovered, at which time 25% of net revenue is collected. This creates strong motivation for rapid re-investment and expansion" (Woynillowicz, Severson-Baker, and Raynolds 2005, 3). The generosity was a feature, not a bug, of the system.

The other issue with the generic royalty regime was the fact that it initially included CIT as a rent capture mechanism (Alberta Energy 1995a). CIT and royalties have fundamentally different rationales, even if they both extract revenue from the same source. "Taxes are collected from individuals and business to cover the cost of public spending, such as infrastructure, healthcare, and education. Royalties, on the other hand, are the cost of obtaining the benefits associated with a property right - in Alberta's case, the right to develop a resource that is owned

[44] While this was an articulated objective in many documents, an interview with Patricia Nelson (then Patricia Black, Minister of Energy) outlines the thinking behind the regime: "We knew if we got investment, then the long-term benefit would come from the corporate tax and the individual tax side. It was never intended to be a massive royalty grab. So, it was built on a hockey stick, where we recognized risk up-front and took advantage of the revenue on the slope of the stick to 25%" (Brennan 2012, 9 emphasis added).

by the government representing all Albertans" (Price Waterhouse Coopers 2009, 6). By including corporate income tax as a component of the overall government take, the Government of Alberta made CIT a *de facto* rent collection mechanism. Hypothetically, a company that owned a very profitable oil sands facility could, despite that one project, fail to turn a profit and thus not pay any corporate income tax.[45] Since the generic royalty regime included CIT in its overall design, it could potentially forego some rent due to the actions of a company.

Moreover, by making CIT a *de facto* rent collection mechanism for the oil sands industry, any changes to the CIT rates *should* coincide with changes to the royalty rates to maintain that government take target. As discussed above, the government achieved an approximate one-third split between the provincial government, the federal government, and the companies of available rent. However, subsequent reductions in CIT rates between 2000 and 2006 cut CIT from 15.5% to 10%, without corresponding increases in the net royalty rates resulted in an overall reduction in rent collection rates and the inadvertent and unnecessary creation of a more generous royalty regime. It is for this reason that Pedro Van Meurs' report from 1997 (Meurs 1997), which suggested an average government take and was relied upon heavily by the oil sands industry during the 2007 royalty review, was contradicted by Van Meurs himself with another assessment in 2007, demonstrating "Alberta has a low overall government take" despite no substantive changes being made to the royalty regime (Van Meurs 2007, 44). This reduction in government take, alongside record oil prices in the mid-2000s is what lead to the 2007 royalty review, as discussed in depth elsewhere (Adkin 2016; Alberta Royalty Review Panel 2007; Dobson 2015; Gibson 2007; Plourde 2009; Roy 2015; Amy Taylor 2007b; Urquhart 2018). However, the

[45] Thanks to Andrew Leach for this point.

generosity of the rent regime post-2006 was not the result of industry lobbying (although they undoubtedly lobbied for lower taxes as a status quo position) but rather the inadvertent inclusion of CIT within the rent collection regime. The unintended consequence of this alignment was the creation of a more generous regime and foregoing rent capture unnecessarily.

From an intergenerational perspective focused on revenue, keeping the royalty rates low was not the worst decision. It allowed the industry to develop and rapidly increase its production at a time when oil prices were high. This allowed for a dramatic increase in revenue as the number of barrels sold and their price were at all-time highs, even if the per-barrel take was not. The larger problem was the inclusion of CIT as a rent collection mechanism. Subsequent cuts to CIT resulted in an even more generous rent collection regime and caused the Alberta government to forego revenue unnecessarily.

3.4 Discussion

Returning to the key questions that began this chapter, what were the key policy changes that shaped Alberta's resource rent regime?

For Lougheed's dealings with conventional oil, the most significant change was the more substantial changes brought about after the first oil shock, particularly the classification of oil into separate vintages – old oil vs new oil – with a much higher royalty rate on the former to account for additional rent available due to the price increases. This was brought about rather abruptly after a long, cautious engagement process that sought to make much more marginal adjustments to the conventional oil royalty regime.

For Klein, the most significant change was the introduction of the generic royalty regime for the oil sands. The introduction of this regime provided a standard royalty framework for all companies that provided them much more cost certainty at the planning stage of oil sands projects, dramatically reducing the cost of capital. Initially, the regime was established to err on the side of leaving some rent on the table in order to encourage cost-reducing innovation, reduce administrative complexity, and encourage additional exploration and development in the industry, but it did not deviate substantially from existing Crown agreements. However, the regime did include CIT in its initial assessment of total government take. By including CIT as a rent collection mechanism at the outset, future reductions in CIT more broadly, without specific increases to royalty rates, resulted in the generic royalty regime becoming more generous than when it began without any substantial change to the regime itself.

So, then what explains these changes and what were the consequences? For Lougheed the two most critical factors discussed were the shifts in geopolitics following the first oil shock and the reserve depletion timeline of conventional oil. The four-fold increase in prices, following the first oil shock, substantially increased the leverage government had over the oil companies as the oil companies could not claim that any increases to the royalty regime would substantially hurt their bottom line. This allowed Lougheed to move much more swiftly and aggressively than he had been in the few years prior.

It could be argued that Lougheed was able to move so quickly and aggressively in part because of the engagement work that had already been conducted for much more marginal changes to the royalty regime. This engagement could have provided the government with a

greater understanding of the challenges facing the industry, challenges that evaporated with the four-fold increase in prices. However, this is purely speculation.

The other explanation is that Lougheed was conscious of the reserve depletion timeline of Alberta's conventional oil resources. It was a frame he used repeatedly, especially, as we will see in the next chapter, regarding saving revenue from conventional oil in the Heritage Fund. It is also something that is backed up by the data (Figure 15, see also footnote 31). The consequence is that Lougheed was able to increase the governments extraction of rent that increased due to the price increases following the oil shocks. From an intergenerational perspective, this makes perfect sense. You want to maximize the per barrel take of resources that are limited and declining in the short to medium term.

For the oil sands, the adoption of the generic royalty regime was a natural evolution of Alberta's going oil sands sector. The project-by-project negotiation of Crown agreements for royalties created additional uncertainty and financial barriers for new development. Oil prices in the early 1990s had been depressed compared to the 1970s, *in situ* techniques remained experimental, and up-front capital costs remained high with long return horizons. The logic behind the generic royalty regime was to reduce uncertainty about royalties to get something of value out of the resource. By reducing some of the uncertainty for the industry, it allowed for more production to occur and revenue to increase, even if it wasn't maximizing the per barrel rent collection.

With the establishment of the generic royalty regime, the Klein government opted to err on the side of being somewhat generous was because they wanted to encourage cost-reducing innovation, reduce administrative complexity, and encourage additional exploration and

development in the industry. The more challenging issue is why it included corporate income tax in its total government take analysis (Alberta Energy 1995a). The question of intention becomes critical in evaluating these events. On the one hand, we can interpret the inclusion of CIT as part of the rent collection regime as an unintended oversight. In this interpretation, public servants mandated with implementing the CIT cuts, unintentionally excluded the fact (i.e., forgot) that the generic royalty regime had included CIT as a component of total government take five years prior and so did not adjust the royalty rates in the generic royalty regime to offset the CIT cuts and maintain the same level of total government take. On the other hand, one could view this as an intentional move to make the generic royalty regime more generous than how it was originally developed. At a broad, ideological level the intention was undoubtedly there – once the budget is balanced, the debt is getting repaid, we can look at tax cuts broadly speaking. But the argument about intention in this case would also require the intentional inclusion of CIT as part of the total government take in constructing the generic royalty regime in 1995 for the explicit purpose of making the regime more generous through CIT cuts in the future to allay political suspicion. This suggests a level of bureaucratic and political foresight that is rare. Moreover, given the role of the Task Force in the development of the generic royalty regime and the lack of any evidence to support this argument in the documents pertaining to the creation of the generic royalty regime, this argument seems less plausible.

Regardless of whether the decision to not adjust royalty rates when CIT cuts were adopted was intentional or not, the unintentional interpretation of events still points to the challenge of unintended consequences. In this case, a single policy instrument (CIT) was used for separate but connected policy objectives: revenue generation from corporate economic activity; rent collection. Cutting the CIT rates was a decision to spur additional economic activity

since the same level of revenue generation was not required but it also reduced rent collection at the same time. Being clear and explicit about policy objectives and how policy instruments achieve those objectives is critical.

From an intergenerational perspective, the consequences of the adoption of the generic royalty regime are mixed. The regime did accomplish its overall goal of rapidly expanding production unknowingly at a time when the price of oil would peak in the mid-2000s. With hindsight, this was a fortuitous turn of events as it allowed revenue to increase with the rapidly expanding production. The inclusion of CIT as a *de facto* rent collection mechanism, however, left revenue uncollected unnecessarily. This is an issue when dealing with non-renewable resources that are finite as that revenue can never again be recovered. Both present and future generations miss out on those lost opportunities as a result.

Electoral politics played a marginal role in the development of rent collection regimes for this period. The tentative approach taken by Lougheed shortly after his election as Premier in 1971 showed a concern for electoral politics and not wanting to upset the status quo, especially as a new party that had just upended thirty-six years of Social Credit rule. The more substantial changes in 1974, just prior to the 1975 election, were due to the fundamentally different conditions for the oil industry following the first oil shock. The public was very supportive of the government making changes to extract additional rent from the oil companies receiving windfall profits.

Likewise, with Klein and the oil sands, the Task Force that would help develop the generic royalty regime began its work shortly after Klein's first election as Premier and was implemented shortly before his second election. In both cases, the electoral safety of each

Premier allowed them substantive leeway to make changes to the royalty system. However, electoral concerns remained marginal, in large part because the government was extracting additional revenue, or encouraging additional production, from industry. The electoral concerns for long-term policy making emerges more obviously in situations where the government is imposing costs onto the present generation for long-term benefit for future generations. The alteration of the royalty regime does not materially impact the electorate in any substantive manner.

Finally, what lessons can we learn from this? First, despite the finite nature of non-renewable resources, maximizing per barrel take is not necessarily the most appropriate option from an intergenerational perspective. Increasing production, as Alberta did, yield substantially greater increases in revenue, ones that easily offset any marginal per-barrel losses.

Simultaneously, the obsolescence timeline is also a factor. Oil is a valuable commodity because it is a dense energy source that works well for several uses. As other technologies are developed (e.g., car batteries serving as an energy carrier to replace gas), they can meet those uses without the associated negative costs (greenhouse gas emissions) thus reducing the value of that commodity. It is very likely that the oil sands will be come obsolete prior to the identified and/or proved reserves all being extracted. In fact, capital investment in the oil sands is already dwindling and it is likely, especially following the cancellation of the $20 billion Teck mine in 2020, that no new oil sands projects will be developed (Connolly 2020).

The second lesson is to be mindful of unintended consequences like the inclusion of CIT as a rent collection mechanism. Governments should be explicit about rent collection vs other revenue generating mechanisms. If rent is unique and economically neutral, it should be treated

as such. Mixing uses of policy instruments can lead to unintended consequences which impact present and future generations by foregoing potential savings of financial capital. It is to the issue of saving to which we now turn.

CHAPTER 4: SAVINGS

4.1 Introduction

> "I suspect that Albertans and others in the years ahead will pronounce the idea of the heritage Fund and the resolve to implement it, as the most statesmanlike purpose ever undertaken by a Provincial Government – or any Government. Somebody observed that politicians project their thinking to the next election; that statesmen think of the next generation. The Heritage Fund is for grandchildren and morally right."
> ~ Lieutenant Governor Grant MacEwan[46]

At the centre of any discussion about future generations and resource wealth in Alberta sits the Heritage Fund. This fund is a foundational pillar of Lougheed's legacy. Yet Alberta has saved resource wealth by other means as well. This chapter examines Alberta's history of saving its non-renewable resource wealth, while the following one examines how that wealth has been distributed. Saving and distributing wealth are where some of the more explicit intergenerational trade-offs emerge. It is where the trade-off between different populations of future Albertans primarily benefits really takes hold, whether it be future residents – those who live in Alberta 50 years from now regardless of their origin – or future descendants – those who are descendants of Albertans living today regardless of where they live 50 years from now. When viewed intergenerationally, saving that's done by the state, is not really saving at all. Instead, it's the conversion of natural capital into financial capital and a decision to defer the distribution of that to future residents. Conversely, while savings defers distribution, incurring debt accelerates it by pulling forward capital from future residents.

[46] PR1985.0401/224 – Letter from Lieutenant Governor to Premier Lougheed April 5, 1976. Lougheed would request permission to quote the letter in the legislature and did so on April 26, 1976.

This chapter begins by asking why the state should even save in the first place. The answer that will be explored in depth throughout this chapter is twofold. First, it is because non-renewable resources are a form of capital and should be kept as such and second because the revenue from such commodities is extremely volatile.

The chapter then examines three specific state-based savings mechanisms and the key policy changes pertaining to them: the Alberta Heritage and Savings Trust Fund (hereafter the Heritage Fund) established in 1976 and reformed in 1996, debt repayment during the Klein era, and the Sustainability Fund that was established in 2003. By analyzing these components together as net assets, it provides a fuller picture of the relative fiscal situation of the Alberta government over time, while still highlighting the specific functions of each savings mechanism.

The Heritage Fund is the key mechanism many people look at when discussing the intergenerational equity of Alberta's resource wealth governance (M. Anderson 2012b; van den Bremer and van der Ploeg 2014; Fawcett 2016; Morton 2015; Murphy and Clemens 2013; Warrack 2007). It was established during the unprecedented resource revenue boom that followed the first oil shock (1973), which was discussed in Chapter 3 (Government of Alberta 1976). While initially lauded as the gold standard for long-term governing and intergenerational equity, the Heritage Fund failed to follow through on its initial objectives and only saved a small portion of the available revenue. This criticism typically emerges through comparisons to Norway's own sovereign wealth fund, which was modelled on Alberta's fund, saved 100% of the revenue, and is now worth approximately $1.3 trillion as of September 2021. This comparison has become so prevalent that the term "Norwailing" has become a common term used to describe its familiar elements (M. Anderson 2012b; Cosh 2015; Gardner 2015; Murphy

and Clemens 2013; Wilt 2017). This chapter will argue that, despite the legacy Premier Lougheed has been accorded for establishing the Heritage Fund (Lewis 2012; MacDonald 2012), it did not live up to its initial objectives – as the Norwailers correctly argue. When viewed holistically, the Heritage Fund did a poor job of saving for the benefit of future generations and residents, whether compared to Norway or analyzed on its own terms.

Despite the attention that's routinely placed on the Heritage Fund, debt repayment is another important form of savings insofar as it involves reducing the financial liabilities of future generations. In fact, there was a similar amount of savings that occurred in the form of debt repayment when compared to the Heritage Fund, although it happened over a longer timeframe. As such, while most of the attention and praise is given to Lougheed for establishing the Heritage Fund, Klein also achieved a similar improvement in Alberta's overall fiscal position by saving windfall revenues (particularly in the 2000s). The key difference is that Lougheed accomplished this simply by saving windfall resource revenues while Klein's tenure began with dramatic budget cuts (20% over four years) – ones that were eventually framed as being more responsible for the province's surpluses than the latest windfall in commodity prices. When viewed comparatively, we see that Lougheed could have saved far more, while Klein's savings were achieved on the back of cuts that had real and lasting negative impacts for many Albertans – ones that in hindsight may not have been necessary given the windfall revenues of the 2000s (Harrison 2005; Harrison and Laxer 1995).

This chapter then examines the savings achieved through the Sustainability Fund. This fund was established in 2003 to help address some of the revenue volatility challenges the province had faced historically. It capped resource revenue that could be used for the budget and

saved the excess during the good times and drew from the fund during the bad times. The Sustainability Fund would once again illustrate the challenges faced by the Alberta government. While exceeding the time frame of this dissertation, the Sustainability Fund's balance would peak at $16.8 billion (nearly the equivalent of the Heritage Fund) in 2009 and be depleted within the following decade as the government went into debt once again.

This chapter concludes by arguing that saving non-renewable resource revenue has proven remarkably challenging. This is due to two factors. The first is the inherent volatility of resource revenue. The second, to be discussed in more depth in Chapter 5, is the intentional policy decision, beginning with Lougheed and reinforced by Klein, to be and remain highly dependent on resource revenue from a budgetary perspective. Relying so heavily on such a volatile revenue source undermines the ability to save the (natural turned financial) capital for the long-term. Moreover, this reliance made it nearly impossible to budget for the short, medium, and long terms as drastic swings in revenue would be accompanied by drastic changes in spending throughout Alberta's history.

This chapter will argue that, from an intergenerational perspective, the history of savings in Alberta is one defined by decisions that prioritized short-term needs over long-term objectives. The savings that did occur, while positive for future generations, occurred during periods where the province was receiving so much resource revenue it had little choice but to save. In other words, it cost the present generation next to nothing to save the excess resource revenue that it did. Once conditions became less favourable for saving, the immediate needs of the present generation quickly superseded any consideration for future ones. This should not be surprising given the systemic barriers to far-sighted action outlined in the introduction of this dissertation.

The real failure is the refusal to entrench a real, comprehensive intergenerational approach to non-renewable resource revenue governance.

4.2 Why Save?

"As an Albertan, I cannot see the point of saving for some invader's dotage" (Cosh 2015). Cosh's blunt and polemical article – "The case for blowing Alberta's oil riches" – forces the question of why save at all? Why not immediately distribute resource revenue to the citizens of Alberta as Cosh argues? First, the comparison is often made between government savings and household savings. For households, you are saving for some distinct goal at a set time in the future, whether it's something specific like the purchase of a car or something more general like retirement. Regardless, the future end point is what differentiates household saving from saving done by the state. That's because the state is a perpetual corporate entity which will, barring some unforeseen circumstances, live on in perpetuity. It will have members come and go over time, but the state will remain.

For a perpetual corporate entity, the primary rationale for saving *non-renewable* resource revenue is that the resource is itself a form of capital. By developing and making something of value of it, that natural capital can be converted into financial capital, and it is worth trying to maintain that stock of capital over time. Failing to do so is akin to selling your house to pay for the groceries, an analogy Premier Lougheed repeatedly employed when making the case for the Heritage Fund.

The second rationale for saving non-renewable resource revenue revolves around the volatility of that revenue. Commodity prices are notoriously volatile, and the revenue derived from its extraction will inevitably move in lockstep. Not surprisingly, Alberta's fiscal history

mirrors boom and bust of the commodity cycle. As the infamous bumper sticker from the 1980s said "Please God, give me one more oil boom. I promise not to piss it all away next time" (Morgan 2019). Alberta's economy and budget are reliant, and often intentionally so, on this inherently unreliable revenue stream. Saving the directly-earned resource revenue (royalties, crown leases, etc.) into a fund from which you can draw the indirectly-earned interest significantly reduces the volatility of that revenue source and would allow the Alberta government (as opposed to a particular partisan government whose interests may be more short term electoral success) to better plan for the short, medium, and long term for the benefit of all Albertans. Regardless of whether that saved revenue is spent on government services (thus benefitting future residents) or given directly to citizens as Alaska does (thus benefitting future descendants), removing the direct resource revenue stream from the government budget dampens the volatility significantly. This has benefits for both the present generation and future generations alike. For the present generation, it prevents the government from being forced to make drastic budgetary changes due to rapidly increasing or decreasing revenue. For future generations, it empowers governments to make thoughtful and intentional investments in physical and human capital (to be discussed in Chapter 5) that can have robust and long-lasting impacts.

4.3 Alberta Heritage and Savings Trust Fund

The Alberta Heritage and Savings Trust Fund is the primary mechanism Alberta has used to save resource wealth for future generations. As a publicly operated savings fund, the Heritage Fund primarily benefits future *residents* as the annual returns from the fund will go to the benefit of Albertans living in the province, regardless of their point of origin. Policy think-tanks across the political spectrum have published reports on the Heritage Fund (Campbell 2013; Gibbins and

Roach 2006; Murphy and Clemens 2013; Shiell and Busby 2008). Despite their ideological differences, they largely agree that the use of the Heritage Fund should be continued and, more importantly, expanded.

Campbell (2013) with the Canadian Centre for Policy Alternatives compares Alberta's approach to resource wealth governance to that of Norway and laments the passive, *laissez faire* approach Alberta has taken. He advocates for a much more active approach to resource wealth governance including expanding the use of the Heritage Fund and establishing a federal equivalent. Gibbins and Roach from the Canada West Foundation argue for an investment strategy that "sets out the need to save, how to save, and to what end or ends savings should be directed" (Gibbins and Roach 2006, 2). They too believe Alberta needs a "proactive strategy" that includes a recommitment to consistent saving in the Heritage Fund (a 50% resource revenue savings rate is recommended) that is entrenched and can only be adjusted through a provincial referendum. Murphy and Clemens with the Fraser Institute compare the Heritage Fund to Norway, like Campbell, but include Alaska in their comparison. They, too, argue for reinstating the formal savings rule and compare what the Heritage fund would be at following Alaska's (25% savings rate) or Norway's (100% savings rate) and examine the institutional mechanisms in each comparison to entrench such savings. In contrast with Campbell, they are less eager for an active approach to investments (what they call micromanagement from legislators) and prefer a passive one focused on maximizing return. Finally, Busby and Shiell (2008) with the C.D. Howe institute created a model (Permanent Resource Income Model) to calculate what was needed to stabilize per capita spending over time. They concluded that Alberta needed to implement a very aggressive savings plan (139% of resource revenue over 5 years) in order to

establish a principle sufficient to provide sustainable per capita spending from resource wealth over time.

4.3.1 Heritage Fund Overview

The Heritage Fund was established with an initial deposit of $2.1 billion, which included $1.5 billion that was re-allocated from the 1975/76 fiscal year and 30% of resource revenue from the 1976/77 fiscal year. Record resource revenues were accumulating after the first oil shock, and the government was well positioned to save some of the amassed wealth. In nominal dollars, government resource revenue increased from $231 million in 1970/71 to $1.7 billion in 1975/76 (the year prior to the creation of the Heritage Fund) and peaked at $5.2 billion in 1984/85. To manage this windfall the government created the Alberta Heritage Savings Trust Fund.

When established, the Fund's official mandate was as follows:

> *Whereas substantial revenues are being received by the Province from the sale of non-renewable resource revenues owned by the people of Alberta; and*
>
> *Whereas there is a limited supply of non-renewable resources and therefore revenues from the sale of those resources will ultimately be reduced; and*
>
> *Whereas it would be improvident to spend all such revenues as they are received; and*
>
> *Whereas the Legislative Assembly of Alberta considers it appropriate that a substantial portion of those revenues be set aside and invested for the benefit of the people of Alberta in future years* (Government of Alberta 1976)

The fund required 30% of annual resource revenue to be saved and it quickly accumulated more than $10 billion by 1982/83. But that was the high-water mark for the fund as resource revenue plateaued due to the decline of oil prices while government spending continued to increase. That same year, the Progressive Conservatives ran their first budget deficit since their first year in

office (1971/72). The government responded by drawing on the Heritage Fund for the first time. It wouldn't be the last. The following year the government reduced contributions to the Heritage Fund from 30% to 15%. This gave the government some breathing room, and it returned to balance for the 1983-84 and 1984-85 fiscal years. Unfortunately, resource revenue collapsed from $4.4 billion in 1985-86 to $1.6 billion in 1986-87. In the year following this collapse (1987-88), all recurring deposits to the Heritage Fund ceased.[47]

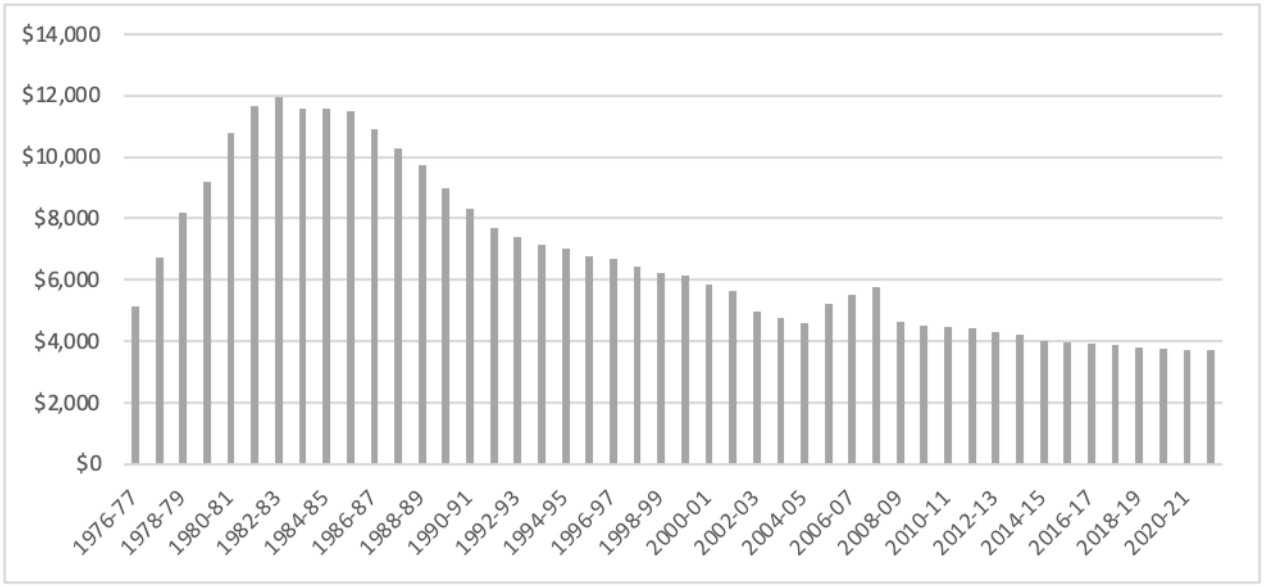

Figure 19: Per Capita Fund Equity (Real 2020$). *1995-96 is the year the Heritage Fund was restructured.

[47] Ad hoc payments would be made for three years from 2006/07 to 2008/09 and recently again in 2022 (Cryderman 2022). See Appendix 4-A for a detailed accounting of Heritage Fund deposits and withdrawals.

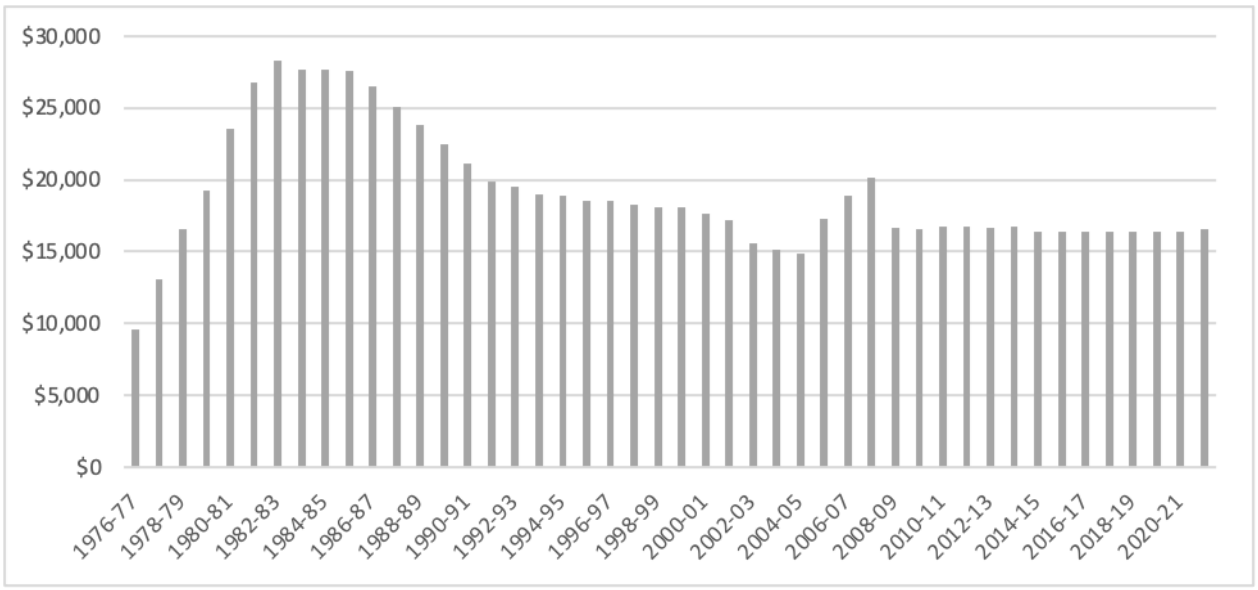

Figure 20: Total Fund Equity (Real 2020$, millions). * 1995-96 is the year the Heritage Fund was restructured.

The government continued to withdraw the annual interest generated by the Heritage Fund while leaving the principal intact for nearly two decades. In the fiscal years of 2002-03 (rising tensions in the Middle East preceding the second Iraq war) and 2008-09 (the Great Recession) the fund lost $900 million and $2.5 billion respectively. In the years that followed, the government continued its practice of extracting the total interest accumulated without returning what was lost to the principal. By not inflation-proofing the fund or replacing the lost capital, the overall value of the fund in real dollars dropped in value from a peak in the 1985-86 fiscal year in both per capita (Figure 19) and absolute terms (Figure 20). The decision not to inflation-proof the fund is one that has received the most amount of criticism (Gibbins and Vander Ploeg 2005; Gibbins and Roach 2006; Murphy and Clemens 2013; D. Thompson 2008).

In the 2005-06 fiscal year, all of Alberta's debt was paid off. The government was again receiving windfall resource revenue as it did in the 1970s and early 1980s, and it began making *ad hoc* contributions to the fund of $1 billion in 2005/06, 2006/07, and $918 million in 2007/08. The payments stopped in 2008/09 as governments around the world grappled with the financial

crisis. In the aftermath, the recurring payments into the Heritage Fund did not resume, although a dramatic upswing in resource revenue allowed the United Conservative Party (UCP) government to put in another ad hoc payment of $3 billion in 2022 (Cryderman 2022).

4.3.2 Creation and Structure

With that overview in place, it is worth digging into the process of the creation of the Heritage Fund in more detail to understand the arguments that were made in support of its creation and the relatively minor quibbles raised in the process. The Heritage Fund was several years in the making. A draft bill was already developed by May 1974[48] but it wouldn't be passed until 1976. In early 1975, Lougheed was coming to the end of his first term. With government coffers overflowing, he would use the Heritage Fund as a central plank of his re-election campaign.

On Feb 7, 1975, Provincial Treasurer Gordon Miniely released the government's budget:

> *"I have not included the incremental crude oil royalties, Mr. Speaker, in budgetary revenues in order to make it clear that these revenues are not, and will not, be available to finance ongoing, normal budgetary expenditures. After allowing for the substantial tax reductions and new expenditure programs contained in this Budget, I estimate that $1.5 billion will be available by December 31, 1975 for transfer to an Alberta heritage trust fund for present and future Albertans."*[49] Hansard Feb 7, 1975 - Budget Speech

[48] Draft Bill - May 10, 1974 – Provincial Archives. PR1985.401/225

[49] It is worth noting that there were concerns about additional spending exacerbating already high rates of inflation. See (Mansell 1997, 26–27); GR1995.414 – Box 34 – Cabinet Documents – Sept 9, 1975 –Statement on 1976 Budget Planning outlining inflation control as a Rationale behind Heritage Fund.; GR1981.0003/199 – Budgeting Policy – AF Collins – Sept 17, 1975 Budget Press Release.

Seven days later, on February 14, 1975, Premier Lougheed stood in the Legislature and delivered what one biographer called the best speech of his career (Hustak 1979, 181). In it, Lougheed laid out the general concept of the Heritage Fund. It is worth quoting in full:

> *But this Budget, Mr. Speaker, purposely raises a fundamental issue for Albertans. Are we prepared as a province to put aside substantial sums of current revenues from the sale of non-replaceable crude oil production, put it aside for our children and for our grandchildren and not make it available for current revenue needs; to use if for that day in this province that could well come when the revenues from the sale of depleting resources are no longer as significant, when some of the wells may have gone dry, when perhaps the discoveries of replacement reserves haven't worked out, and to diversify the economy of this province so we become less reliant upon the sale of oil to sustain our economy.*
>
> *One can debate endlessly the details of such a fund, the parameters and the terms of reference, but the key is the basic concept of the fund. Do Albertans really accept the concept? I don't know. I think they do, but standing here today, I do not know. Are Alberta citizens prepared to do with somewhat less today, even though more than those in either provinces, so that their children and their grandchildren might enjoy at least the same level of prosperity that we have today when the oil wells do go dry?*
>
> *Our mandate in 1971 did not involve such a concept as the Alberta heritage trust fund. We need to know. We need to know if the people in fact accept such a fund and want us to develop it. We will set out broad parameters. We will not though tie our hands in these rapidly changing times to specifics. We do need the endorsement of Albertans of the creation of such a heritage trust fund. During the forthcoming weeks and months we will further develop the parameters in relationship to terms of reference, the purposes and objectives of the fund, the necessary legislative review.*
>
> *Mr. Speaker, the Alberta heritage trust fund purpose is clear: to help assure that future generations of Albertans enjoy at least the same level of prosperity as we do now.*

As he ended the speech, Lougheed argued that such a significant departure from general parliamentary budgeting procedures required a new and specific mandate. As such, he dissolved the legislature and called an election for March 26, 1975.

> *Therefore, Mr. Speaker, the time has come for us to find out; does the public of Alberta endorse this Budget and specifically the Alberta heritage trust fund concept - a dramatic departure from customary provincial government budgeting. And secondly: do the people of this province have confidence in their government's handling of the energy resources of Alberta. Mr. Speaker, it is a time for Albertans, it is a time for Albertans to stand*

> *together. Therefore, Mr. Speaker, I will now call upon The Honourable the Lieutenant-Governor to ask for immediate dissolution of the 17th Legislative Assembly of Alberta for the purposes of holding a general election on Wednesday, March 26, 1975.*

Thus began the 1975 election campaign. While it wasn't the only issue or theme of the campaign the Heritage Fund was a core component of it. Wesley (2011, 94) notes:

> *"Lougheed's promotion of the fund as the centrepiece of his government's agenda combined all three elements of the Alberta code [individualism, populism, and provincial autonomy] into a single policy package. First, it embodied the principles of fiscal responsibility and restraint [individualism]…Second, by establishing Albertans' common claim to their natural resources, the fund promoted a populist sense of community in which the people of the province received the benefits of their collective birthright. Third…the Heritage Fund was sold as a means of maintaining Alberta's economic and political independence"*.

The public rewarded Lougheed's Progressive Conservatives with an astounding majority. The final count of MLAs was 69 PC, 4 Social Credit, 1 NDP, and 1 Independent Social Credit.

During the spring sitting of the first session of the 18th legislature, the opposition tabled their own bills ahead of the government's Heritage Fund proposal. The first was NDP MLA Grant Notley, who tabled Bill 204: The Alberta Social and Economic Planning Act on May 20, 1975. This bill only dealt with *ad hoc* transfers to an established Heritage Fund, and it proposed a non-partisan and non-political council be tasked with the management of the fund. The council was to be comprised of eight individuals of which four were to be women, and at least on representative from labour, industry or commerce, education, First Nations, and agriculture (farmer). All were required to be residents of Alberta and it barred MLAs from serving.

Three days later, the Official Opposition Social Credit party tabled Bill 206: Alberta Heritage Trust Fund Act. Like Bill 204, it only concerned one-off transfers to the established Heritage Fund on an as-needed basis and did not commit to an annual transfer of some stated amount. The bill also called for "trustees" to be ultimately in charge of the investment decisions,

which included the provincial treasurer, the provincial auditor, two members of the Legislative Assembly to be appointed, and the Leader of the Opposition. As such, it would entrench a bi- or multi-partisan group tasked with managing the fund. Both bills allowed the opposition to provide comments on how the administration and investment of the $1.5 billion in revenue should occur.

This issue was so contentious that Lougheed even faced dissent from within his own party, as MLA Ron Ghitter publicly criticized his party when the investment decisions of the Heritage Fund were to be placed in cabinet and not with the legislature.[50] Lougheed argued that the investment decisions needed to be nimble in order to respond to changing conditions, and that placing that authority with the legislature would be too cumbersome.

These two bills and the backbench opposition show a key theme of the Opposition's collective response to the Heritage Fund. This opposition was not to the overall concept of the Heritage Fund, and they were all in agreement that setting aside resource revenue was a good idea. Their disagreement with the government concerned the overall administration of the fund, and who would get to decide how the money was invested. Lougheed didn't table his own bill (Bill 74) until Dec 3, 1975, and then allowed it to die when the session ended. The bill that would establish the Heritage Fund wasn't tabled until April 14, 1976 (Bill 35). The only substantial change between Bill 74 and 35 was the requirement that the legislature pass a special appropriation each year authorizing the transfer of 30% of non-renewable resource revenue into the fund.

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[50] PR1985.0401/225 - Ron Ghitter Memo to Peter Lougheed re: public accountability concerns; PR1985.0401/224 – new clippings about Ron Ghitter's concerns; HANSARD – April 26, 1976 - Brief remarks on cabinet control, by Ghitter.

When it was first established, the Heritage Fund had several key components as part of its design. The first was that the fund was divided into three investment portfolios: the Alberta Investment Division (AID), the Canadian Investment Division (CID), and the Capital Projects Division (CPD). The AID was the largest portfolio and invested its capital in various projects within the province to help facilitate economic diversification for a future when the resource revenue could no longer be relied upon. The CID provided loans to other Canadian provinces at a rate below what they could access on the world bond market. By providing other provinces with cheaper loans, the Alberta government still received a return on its investment but, more importantly, served as a means by which to share Alberta's resource wealth with the rest of the country, albeit a limited one. Politically, it allowed Alberta to expand its influence within confederation. Between 1977-1982 six provinces – Manitoba, Quebec, Newfoundland, New Brunswick, Nova Scotia, and Prince Edward Island – would borrow a total of $1.9 billion from the Fund. The CID was limited to 15% of the overall assets of the fund.

Finally, there was the CPD. This portfolio included various investments in projects around the province that were chosen for economic or social development purposes but were not expected to make a financial return on investment for the fund. This category was categorized as de facto assets in the annual reports until the Heritage Fund was reformed in 1996. Examples of the kinds of projects the CPD invested in include the establishment of the Alberta Heritage Scholarship Fund, the Alberta Heritage Foundation for Medical Research, the Alberta Oil Sands Technology and Research Authority (AOSTRA), and a contribution towards the creation of Kananaskis Provincial Park (now Peter Lougheed Provincial Park). The CPD was restricted to 20% of the overall assets of the fund.

Because of the unique and decidedly political nature of the CPD, Lougheed established a process whereby all CPD investment decisions would be approved by the legislature. In contrast, decisions about CID and AID investments would be made by cabinet. The decision-making capacity for the Heritage Fund would prove to be the single largest political issue concerning the funds creation. This was the compromise that Lougheed arrived at to provide the legislature a little more control over the Fund. The Investment Committee remained comprised of all members of the Executive Council.

The other key design component of the Heritage Fund was that it allocated a consistent share each year – 30% of non-renewable resource revenue. But why was that 30% figure chosen? Recall from Chapter 2 that saving 100% of the non-renewable resource revenue – the "bird in hand" policy – is one extreme (Segura 2006, 12) while spending the money as it comes in is the other. Analysis conducted by Scarfe and Powrie (1980) a few years after the Heritage Fund was established concluded that the 30% savings rate was insufficient. A study by the Canada West Foundation (Gibbins and Roach 2006) recommended the government save approximately 50% of resource revenue. The savings rate is inherently a political question about distribution between different stakeholders, including the present and future generations, and in this case between future residents or future descendants. As Scarfe and Powrie write:

> *The province of Alberta may not be saving enough of its non-renewable resource revenue. The Fund may be smaller than it ought to be, partly because some resource revenues are being dissipated in direct tax levels which are too low and partly because some are being dissipated in levels of government spending which are too high. However,* ***this merely states an opinion that the province should give more consideration to future generations.*** (Scarfe and Powrie 1980, 174 emphasis added)**.**

According to Deputy Provincial Treasurer A.F. "Chip" Collins, speaking at the same conference where Scarfe and Powrie presented their analysis, the decision to invest 30% of resource revenue

through the Heritage Fund involved both economic and political considerations. On the economic side, he states:

> *"The 30 per cent figure was chosen to reflect in a general way the incremental revenues accruing from the increase in oil prices that occurred in 1973-74, based on expectations of future price increases at the time. Consideration was also given to revenue requirements in the medium to long term." (Collins 1980, 160)*

The political considerations, on the other hand, stemmed from the administration's own sense of what would be "acceptable to the Alberta public".

> *"A lesser transfer would have represented an insufficient commitment to the principle of government saving of our resource wealth on behalf of Albertans. To transfer a significantly greater proportion would perhaps have been viewed as too great an intrusion on the part of government into Alberta residents' decisions on how to allocate their income between consumption and savings" (Collins 1980, 160).*[51]

This politically palatable rationale also emerged at a campaign rally in Vegreville during the 1979 election campaign, where Lougheed stated: "We are taking 70% of that depleting resource to meet your needs today – *all we are asking you to do is put aside 30%.* It just happens that we are producing now and that resource is owned not just by you but by your children and grandchildren" (emphasis added).[52]

The decision to only save 30% of the resource revenue didn't entirely correspond with the rationale that they needed to save a depleting form of capital. The emphasis on depleting resources was a constant frame employed by Lougheed and his government. It signaled that the government viewed Alberta's conventional oil resources, rightly, as a form of capital, and consequently should not be relied upon as a long-term source of revenue. One consistent analogy

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[51] See also quote from Lougheed being asked this exact question on May 17, 1976, in Appendix 4-C.
[52] Provincial Archives - PR1985.0401/928 – AHSTF Election Policy 1979.

Lougheed liked to use here was that of selling a house to pay for groceries. It appeared in a Statement to Press re: Financial & Fiscal Policy for AB released May 8, 1967.[53] He used it again during the period when the *Heritage Fund Act* was under consideration in the legislature.[54] And he used it again in an election campaign speech in Vegreville on February 19, 1979.[55] I quote the analogy from this latest event in full:

> *"We look at a house or farm – somebody comes to us and offers to buy that house – we agree to sell. They then say we can live there for ten years and at the end of ten years you have got to move. You had better save that money otherwise you are going to have nothing at the end of those ten years. At the end of those years when those revenues from oil are not there, then we had better leave something for our successors, if not it will be a sad legacy. Those are our choices. Rapid increase in taxation which could effect the economy of this province in a negative way or serious cutbacks in service. That is what the Heritage Savings Trust Fund is all about. I hope we can collectively – as Albertans – I feel so strongly about this and will look to March 14th on this particular issue – do what nobody else has ever done anywhere else in the world and that is to save a portion for that day in the future. We are really not harming anything that is happening today in terms of service – not to squander but to save for the future. Friends, I hope we have the courage to do that"*

The consistency of this messaging does suggest a clearer and more thought-out approach to the general principle of the Heritage Fund. Yet while there is consistency within the messaging, this is not necessarily reflected in the overall framework that was eventually developed for the Heritage Fund. To follow through with the Premier's own analogy, if you sold your house and were allowed to live rent free for the ensuing 10 years, you would likely plan to save a sufficient portion of that money from the sale of the house to be able to purchase another home once that 10-year period was up. Saving only 30% of those proceeds from the house is unlikely to fulfill that requirement.

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[53] Provincial Archives - PR 1972.59/265 – PC Fiscal Platform
[54] Provincial Archives - Accession PR1985.0401/224; Edmonton Journal, Sat March 27, 1976.
[55] Provincial Archives - Accession PR1985.0401/928 - HERITAGE FUND Election Policy 1979.

While more contemporary analyses concerning resource revenue savings rates (such as those from the think tanks described above) argue for a higher rate of savings, it's helpful to note the context in which this decision was originally made. Hartwick and Solow, upon which most analyses of optimal resource extraction and savings rates are based, had yet to publish (Hartwick 1977), or had just published (Solow 1974) their ground-breaking works. As such, Alberta really was innovating in this regard. Moreover, Hartwick and Solow are singularly concerned with the question of optimizing intergenerational equity. With the Heritage Fund, saving for future generations is the third objective, as stated in the preamble of the Act. The overall structure of the fund was designed to address a variety of policy objectives beyond intergenerational equity that include economic diversification, quality of life improvements through the CPD, and distribution to the rest of Canada via the CID, among others.

Even so, the 30% savings rate was insufficient if viewing resource revenue as a form of capital, as Lougheed argued repeatedly. To use his analogy, it's like allowing yourself to spend 70% of the value of the house you sold, leaving you with only 30% remaining to purchase a house at the end of the 10-year residency. Despite the analogy, there were other priorities beyond maintaining the capital.

Finally, it is worth briefly discussing one design component which was not part of the Heritage Fund: the dispersal of earned interest to citizens via a dividend akin to what Alaska would set up a few short years later (J. Anderson 2002; Baena, Sévi, and Warrack 2012; Goldsmith 2002; Smith 1991; Warrack and Keddie 2002). A memo from Deputy Treasurer Collins to Provincial Treasurer Merv Leitch hints at one reason why this option was not chosen:

> *"setting aside the details, the proposal involved a fundamental philosophical issue. Is it desirable to distribute benefits from oil and gas revenues directly to individual Albertans (Albertan residents at some specified date) on a one to one basis or is it preferable to retain these funds in government to be used for the common good of all? The proposal is not fully consistent with the view that a prime purpose of the Heritage Fund is to enable to government to provide a high level of government services at some future date without the need to impose substantially higher tax burdens on individual Albertans than exists today"*[56]

In other words, this memo acknowledges that the government viewed the low tax/high spending fiscal policy to be a mechanism of resource revenue distribution and the Heritage Fund was established to defer some of that revenue into the future. A dividend policy would distribute money to Albertans in the future as well, just not through the tax system. This is a significant point to which we will return in Chapter 5.[57] But for now it is worth highlighting that the government was cognizant of the different flows of revenue.

4.3.3 Evolution of the Heritage Fund

While most critiques of the Heritage Fund today lament that the savings did not continue, the government at that time was celebrating the foresight of the Heritage Fund. In the 1982/83 annual report for the Heritage Fund, Provincial Treasurer Lou Hyndman says "the Heritage Fund was called upon for the first time to play a role in supplying funds to support economic resurgence expenditure programs. This use of part of the savings Albertans have in the Heritage Savings Trust Fund was implicit in the Fund's original design" (Government of Alberta 1983, 2). When it was established, Lougheed often remarked that the reason for this fund was because oil

[56] Provincial Archives - PR1985.0401/226 – HERITAGE FUND: 1977-78. For an analysis arguing for a potential dividend see Warrack (2007).
[57] Barry Cooper suggests the decision to keep control with the government is a "reflection of crown rather than popular sovereignty" (B. Cooper and Kanji 2000, 168fn13).

revenues were expected to decline "within a decade or so".[58] In 1986, a decade after the Heritage Fund was established, resource revenue had in fact collapsed. For the Alberta government, this was all part of the plan. Despite one of the rationales of the fund being to save for the long-term welfare of future generations, it was also used as a medium-term revenue stabilization fund or "rainy day fund" when the fiscal reality of the province changed. This is perhaps best illustrated by Provincial Treasurer Hyndman's 1982 budget address:

> *"A key to Alberta's financial management strategy is the Alberta Heritage Savings Trust Fund, now in its sixth successful year. As a savings fund, its principal objective is to smooth the difficult future transition from an economy based on depleting natural resources to one where more traditional revenue sources are required. Through its investments today, the heritage fund supports Alberta farmers, small business men, home buyers, and home builders, thereby creating long-term strength in our economy. As well, these investments will provide an income stream over the long term when our resource revenues decline."*

This evolution is not surprising, especially given the competing objectives of the Heritage Fund from the beginning. What it does speak to is the challenges of long-term governing (and governance) with which this dissertation is concerned. This is a perfect case of the dual nature of the time inconsistency problem. On the one hand, external conditions have changed (the price of oil collapsed, and the economy was in a recession), and government altered its original plans (rather than continuing to save the depleting source of capital, it began drawing from it). Viewed alone, this may be how one expects a democratic government to respond to these sorts of conditions. However, it is also a clear case where the needs of the present quickly supersede the needs of the future, and in this case made worse by decisions about how the government chose to distribute its resource revenue – one that will be discussed in more detail in Chapter 5.

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[58] This rationale was also in a short Q&A pamphlet about the Heritage Fund. PR1985.0401/928 – HERITAGE FUND Election Policy 1979

4.3.4 Heritage Fund Reform

Less than a decade later, as the Klein Revolution was underway, the government was faced with a decision on what to do with the Heritage Fund.[59] One of the components of the 1993 Financial Review Commission, a commission established by Klein to prime the public for upcoming budget cuts, was an evaluation of the Heritage Fund in the context of the government's overall fiscal position (Alberta Financial Review Commission 1993, 1). The existence of the Heritage Fund alongside provincial debt forced the government to speak in terms of "net debt" in order to underline the overall fiscal position of the province. At the time, the province had a net debt of approximately $2 billion, but that was expected to grow quickly without the 'massive cuts' the Klein team campaigned on in the 1993 election.

Two recommendations from the review are relevant for this discussion of Heritage Fund reform. The first was that the review recommended the government adopt a "Consolidated Budget" (Alberta Financial Review Commission 1993, 21). The problem was that there were numerous funds, agencies, and corporations with individual mandates, budgets, and assets which made a single 'bottom line' budget number difficult to determine. Moreover, these entities could make exchanges with each other further complicating big picture government accounting of expenditures. The Heritage Fund was one such entity, and it had its own mandate to boot – namely, to save for the future, diversify the economy, and improve Albertans' quality of life. By adopting a consolidated budget, that mandate was subordinate to the government's overall fiscal position.

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[59] For an account of this period from a constructivist international political economy perspective, see Fini (2010, chaps. 6&7).

The second recommendation, which flowed from the first one, was that the "investments of the Alberta Heritage and Savings Trust Fund should be transferred into the provincial government's main fund, the GRF [General Revenue Fund]" (Alberta Financial Review Commission 1993, 29). If the government is looking at its fiscal position from a consolidated perspective, then it seems superfluous and wasteful to manage the fund separately. Liquidating the fund or retaining it does not do anything to Alberta's fiscal net debt fiscal position, but the added administrative costs were deemed redundant.

Internally, the government continued to review its options. A presentation by Wood Gundy on December 7, 1994, outlined the options the government had before it and included the two which the government ultimately decided between (Wood Gundy 1994).

It is worth noting that the Wood Gundy presentation explicitly highlights some of the intergenerational trade-offs that inform the policy options it proposes asking questions such as "can certainty of return be provided for future generations?" and "to which generation(s) should benefits accrue?" It also outlined the overall intergenerational context of the Heritage Fund at that time (Wood Gundy 1994, 3):

- Past generation saved to provide funds for future
- Current generation borrows and consumes
- Future generation pays for debt service and amortization
- Borrowing capacity of future generations will be reduced
- Future generations assume all financial risks of investment portfolio

This first bullet frames the Heritage Fund as the past generation having sacrificed something for the sake of a future generation, hinting at intergenerational inequity. But this is an incorrect frame when dealing with non-renewable resources. As noted in our discussion of *why*

save?, non-renewable resources are a form of natural capital that can be converted to financial capital. As such, it is a form of capital that belongs to both present and future generations. The previous generations, rather than sacrificing on behalf of future generations, have a duty to maintain that stock of capital for the benefit of all Albertans past and future. This alternative framing of the issue is critical because it alters the generational cost-benefit calculations. The past generation, rather than sacrificially saving for the future, consumed a significant portion of the capital that was available, leaving future generations worse off. In the options that would follow, the Wood Gundy authors explicitly highlighted the trade-offs associated with the debt accruing to the province due to annual deficits at the time and contrasted that with the circumstances surrounding the Heritage Fund's creation.

The presentation offered five options for the government. The first was to liquidate the Heritage Fund and direct the funds towards paying off the province's debt. This option corresponded with ones presented in a quick memo on June 28, 1994, from Deputy Provincial Treasurer A.J. McPherson entitled "Off the Wall AHSTF/Debt repayment Plan" (McPherson 1994). This option makes no tangible alteration to the province's overall financial position, as it simply uses an asset to pay off a liability, much like someone selling a car to pay off a student loan. The Wood Gundy presentation also highlights that this option "does not preserve capital" and so moves away from the conceptualization of the Heritage Fund equity as being capital converted from non-renewable resources. Finally, this option also "exposes future generations to the effects of the current generation's financial management". In other words, there were still questions concerning whether the province would be able to balance its budget and the issue was whether it was prudent to sell off assets if you were still running a deficit. This option, while discussed at earlier times before this report, did not get much further in part because it was

recognized that the returns received from the Heritage Fund could potentially be greater than the debt servicing costs, given certain investment strategies which will be discussed below. The higher potential returns on the fund gave a financial rationale to maintain the fund, ones that fit with the government's overall fiscal plan.

The second option was to "invest only in Alberta debt". This option was explicitly framed as an intergenerational transfer with the "current generation borrow[ing] from [the] future". This option would also restrict what the fund could invest in, which would lead to inadequate returns and decrease liquidity in the fun. This option was not seriously considered, and little mention is made of it aside from this report.

The third option was to "manage using pension concepts". This would give the fund more explicit instruction on investment structure and return targets but would also result in the capital of the fund being "paid out over time". This option was also not given serious consideration beyond this report.

The last two options, the "real return approach" and the "portfolio approach," were the ones that received the most attention. They were similar in structure but contained different time horizons with short-term and long-term trade-offs as outlined in a memo by ADM Robert Bhatia dated April 7, 1995 (Bhatia 1995). The real return approach maintained the conceptualization that the Heritage Fund was converted capital and thus sought to maintain that capital as the overarching objective. This would manage the fund as an endowment with "the real value of the capital being preserved". This necessitated inflation proofing but also prioritized investments with a greater return in the long-term such as equities and real estate.

The portfolio approach, on the other hand, sought to manage the fund as a portfolio, with the overarching objective being ensuring the return to the fund was greater than the debt servicing costs. This allowed for more risky investments in markets that would maximize short term returns as the deficit reduction and debt elimination plans were implemented.

In essence, the choice between the real return and portfolio approaches turned on whether the government's investment strategy should prioritize short-term returns to cover debt servicing costs (portfolio approach) or greater long-term returns, even if that meant debt servicing costs could run higher in the short-term (real return approach). In a memo from Deputy Provincial Treasurer McPherson to Provincial Treasurer Dinning dated March 7, 1995, McPherson explicitly notes that the real return approach "is consistent with saving depleting resource revenues for future generations" while the portfolio approach is "less consistent with [that] notion" (McPherson 1995a). However, in the same memo, McPherson also notes that the portfolio approach is "most consistent with the government's fiscal and debt plan" and the "full consolidation of Heritage Fund in province's finances". Despite the inconsistencies with the government's fiscal and debt plan, the April 7 Bhatia memo recommended the real return approach. This was in part because the conception of resource revenue as a form of capital remained.[60] Revenue from natural gas or the oil sands was still negligible, and conventional oil revenue had dropped significantly from its peak in the mid-80s. The government needed to maintain a longer-term approach given the potentially dwindling revenue stream.

[60] Personal correspondence – October 2, 2017

The other component of this review of the Heritage Fund was gathering input from the public on what the government should do with the it. "In December 1994, Premier Ralph Klein announced that there would be a public consultation process to determine Albertans' views on the future of the Alberta Heritage Savings Trust Fund" (Alberta Heritage Savings Trust Fund Review Committee 1995, 3). The consultation process included two components. The first was an information booklet sent to all Alberta households entitled "Can we interest you in an $11 billion decision?" (Government of Alberta 1995) with a corresponding questionnaire. The questionnaire asked two fundamental questions:

> Is this the best time to make a long-term decision about the Heritage Fund…or should we wait for the government to show it can keep the budget balanced and begin to pay down debt?
>
> - Option A: Make a decision now. The Heritage Fund has outlived its prime. It's time to do something else with the Fund.
> - Option B: Let's wait. The Heritage Fund is our legacy. It's too early and the situation is too uncertain to make an irrevocable decision now. Once it's gone, it's gone.
>
> If we make a decision now, what should it be? Keep the Fund with a new role for the future? Or sell it off to reduce our debt?
>
> - Option C: As long as we have a good plan for paying down the debt, keep the Heritage Fund. It's an Alberta legacy and the concept of having an RRSP is still a good one.
> - Option D: Sell the Heritage Fund, get as much as you can for it, and use the money to pay down some of Alberta's total debt.

The government received 50,515 questionnaire responses, representing a 5% return rate from the 1.1 million that had been mailed out. Table 4 provides the overall responses to the questionnaire provided in the final report (Alberta Heritage Savings Trust Fund Review Committee 1995, 7).

	Keep	**Sell**	**Other Options**	**No Preference Indicated**	**Total**

Decide Now	2,306	4.56%	6,191	12.26%	717	1.42%	177	0.35%	**9,391**
Decide Later	35,392	70.06 %	335	0.66%	317	0.63%	1,212	2.40%	**37,256**
Undecided	97	0.19%	6	0.01%	25	0.05%	23	0.05%	**151**
Other Options	347	0.69%	57	0.11%	640	1.27%	84	0.17%	**1,128**
No Preference Indicated	1,322	2.62%	539	1.07%	215	0.43%	513	1.02%	**2,589**
Total	**39,464**	**78%**	**7,128**	**14%**	**1,914**	**4%**	**2,009**	**4%**	**50,515**

Table 4: Heritage Fund Questionnaire Results

The results were clear, the public overwhelmingly wanted to keep the Heritage Fund, with 37,698 out of 50,515 respondents opting to keep it (deciding now or later), compared to 6,526 opting to sell it (deciding now or later). The report concluded that "Albertans want to keep the Heritage Fund, but they are not content with the status quo" (Alberta Heritage Savings Trust Fund Review Committee 1995). However, the awkward framing of the questions muddies the results. By including "It's time to do something else with the Fund" under the "decide now" option, it is unclear how to interpret the responses. Only 2,306 opted for the "decide now (including do something else) - and keep the fund" combination. It could be argued that the 35,392 that opted for 'decide later - keep' combination were genuinely deferring a decision on the fund until later or that some of those respondents were rejecting the framing of the 'do something else' framing of the 'decide now - keep' combination. It is more plausible that respondents chose the decide later option as the language of that question ("The Heritage Fund is our legacy. It's too early and the situation is too uncertain to make an irrevocable decision now.") corresponded more directly to a preference to keep the fund, regardless of when that decision is made. In either case, support for the Heritage Fund remained strong.

Moreover, it is unclear what exactly the 'status quo' represented. Two possibilities exist. The first is that the status quo meant continued use of Heritage Fund returns to fund government programs with no further contribution to the fund nor any inflation proofing, thus allowing the Fund to diminish in real value as it had from 1982 until the present day. The second possibility is that "status quo" meant returning to the original objectives of the Heritage Fund as established in 1976 in which 30% of non-renewable resource revenue was set aside. The 35,392 respondents advocating for a 'decide later - keep' option could well have been asking the government to start paying into the fund again once the deficit and/or debt was eliminated.

One other point to note in the framing of the questions is that the option to keep the fund (Option C) framed it in terms of an RRSP. This is significant because, as discussed in the introduction, Jacobs (2011, 71n25) notes there is a significant distinction between *intra*- and *inter*-generational issues. *Intra*generational issues might include deferral of benefits, but only to the point where respondents might still realize those future benefits. *Inter*generational issues are ones where the respondents would knowingly not be receiving the benefits as only future generations would benefit. While this is a minor point with regard to the Heritage Fund, which would undoubtedly have benefits accruing intra- as well as inter- generationally, it is important to highlight that the respondents' own self-interest is included in the decision to keep the Fund. Undoubtedly had the framing differentiated between 'benefits accruing to you and your children' vs 'benefits accruing to your grandchildren and their children', one could expect a preference for the former over the latter.

The second consultation component included eight public hearings with round-table discussions throughout Alberta during February 1995. The hearings were not designed nor

required to reach consensus but were instead a means of raising and highlighting various issues or concerns the public had with how the Heritage Fund should be managed. The comments received and summarized in the final report covered a broad swath of issues, both positive and negative. They included discussions of the appropriate objectives of the Fund, governance issues, investment strategies, symbolic and emotional attachments to the Fund, among others. Notably there was also discussion of whether the Fund should be for a "rainy day" vs providing "stewardship" of Alberta's non-renewable resources. The latter incorporating more concern for future generations than the former. Unfortunately, there is no indication of the extent to which participants held each view.

The Report concluded with fourteen recommendations summarized by "five guiding principles":

- The Fund should be retained, but not at the status quo.
- The management of the Fund should be at arm's length from the political process.
- Private sector investment managers should be involved in investment decision making, along with Alberta Treasury staff.
- The Fund should be more transparent; the Fund's managers should be more directly accountable to the people of Alberta.
- The role of government is to set objectives for the Fund.

In the end, the government chose both the real return and portfolio approaches. The real return approach was to be the long-term objective of the fund, while the portfolio approach would be adopted in the short term in order to ensure the returns from the Heritage Fund exceeded the government's debt servicing costs. The funds from the Heritage Fund were to be placed in a "transition portfolio" with the explicit instruction for the provincial treasurer to transfer $1.2 billion from the transition portfolio to an endowment portfolio each fiscal year until all of the money in the transition portfolio had been transferred (Alberta Heritage Savings Trust Fund Act

1996, S12(1)). This was to occur no later than December 31, 2005. The fund was also inflation-proofed by restricting the amount the provincial treasurer could withdraw from the fund to an amount greater than the "Canadian gross domestic product price index" (Alberta Heritage Savings Trust Fund Act 1996, S11(1)). The outlined purpose was to allow the government to meet three distinct but related objectives:

- Maximize long-term return on assets
- Support short to medium-term income needs of the fiscal plan
- Protect Fund assets against effects of inflation (Government of Alberta 1996, 4).

While the government chose to keep the fund and retain it in a manner consistent with the "notion of saving depleting resource revenues for future generations" (McPherson 1995b) and by inflation proofing it, it would address the fund's stagnation that had occurred between 1987 to 1996. However, as the public indicated, the government deferred an ultimate decision on the fund until a future date.

After this reform, the government returned to the Heritage Fund question a number of times. The first happened at the Alberta Future Summit in 2002, where the Heritage Fund played an important part in its discussions (Government of Alberta 2021). There were also two surveys. The first was entitled "It's Your Money, Speak Out, We're Listening" in 2000 and the second survey a year later in March 2003 entitled "Looking Forward: Planning for the Future with the Alberta Heritage Savings Trust Fund" which asked whether the Heritage Fund should be used primarily as an endowment fund, revenue stabilization, debt repayment, or pay for capital projects.

The Alberta Future Summit involved public consultations using summit workbooks between September and December 2001, and a two-day delegated conference in Red Deer in

February 2002. The results were not binding, but it allowed the government to get public feedback on a whole host of policy initiatives. According to one biographer, after eliminating the deficit and beginning to pay off the provincial debt, Klein was adrift with no real policy agenda to put forward (Martin 2002, chap. 17). The broad swath of topics covered at the Future Summit resulted in a document that reads like an idea dump for someone seeking inspiration. The result was contradictory statements such as "There was a common understanding among delegates that either adopting or rejecting the Kyoto Protocol is an obstacle [to fiscal responsibility]" (Government of Alberta 2002, 75). Nevertheless, regarding the Heritage Fund, several recommendations were put forward such as "Build up the Heritage Fund until it is large enough to provide sufficient income to replace what the government now takes from Albertans in the form of income tax" (Government of Alberta 2002, 78). That said, there was no consensus around an idea to use $6 billion of the Heritage Fund to pay off the remaining debt.

Taken together, the Future Summit and the two surveys demonstrated that Albertans still held the Heritage Fund in high regard and did not want to see it liquidated. They also supported the low tax, high spending fiscal regime that had become the status quo for Albertans for several decades. Despite identifying revenue volatility as an issue for fiscal responsibility, there was no mention of working to lessen Alberta's reliance on resource revenue. Instead, the concern was with "smoothing out government expenditures" instead of revenues (Government of Alberta 2002, 77). The surveys demonstrate a continual desire to maintain the Heritage Fund, but not a significant desire to increase savings in it.

From an intergenerational perspective, the Heritage Fund truly was a ground-breaking innovation. The decision to set aside non-renewable resource revenue put the Alberta

government on a path towards intergenerational equity long before concerns for future generations had really become an issue. Yet despite the rhetoric, we quickly see that the Heritage Fund was not in fact a vehicle for intergenerational equity but a more short-term project. The funds for the Heritage Fund were available simply because the government literally could not spend the money fast enough. The decision to set aside a consistent amount every year was laudable, but the 30% rate was inadequate. And when the revenue dried up, the government was quick to stop the contributions altogether despite highlighting the fact that spending this money was akin to drawing down one's capital to pay for ongoing expenses. The pressure to attend to the short-term quickly overrode any consideration of the long-term.

4.4 Debt Repayment and the Klein Revolution

Figure 21: "Paid in Full"[61]

With the deficit eliminated and resource revenue increasing, the Alberta government quickly eliminated its debt. On July 12, 2004, at the Calgary Stampede, Premier Klein made an announcement that the government's debt had been "paid in full" (CBC News 2004). Debt operates as a *de facto* mechanism of intergenerational wealth transfer. By incurring debt, the present generation pulls forward revenue from future generations to distribute/use in the present. Paying off that debt, as Klein did, transfers financial wealth from the present to the future. In this way, debt repayment also benefits future residents of Albertans.

[61] Then-Alberta Premier Ralph Klein held up a "paid in full" sign after announcing July 12, 2004, that the province's debt of $3.7 billion had been paid off in full ahead of schedule. Klein made the announcement following his annual Stampede breakfast at the McDougall Centre in Calgary. PHOTO BY COLLEEN DE NEVE /Calgary Herald (Hudes 2021).

The deficit elimination and debt repayment efforts of the Klein government have been a polarizing topic in Alberta's history (Boothe and Reid 2001; Brownsey 2005; Dabbs 1997, 2006; Lisac 1995; Mansell 1997; McMillan 1996; McMillan and Warrack 1995; Taft 1997). Advocates praise it as the hallmark of fiscal responsibility (B. Cooper 1996; B. Cooper and Kanji 2000) while critics arguing that the spending cuts it required have left government services and provincial infrastructure in tatters (Harrison 2005; Harrison and Laxer 1995). The truth, as is often the case with such polarized topics, undoubtedly lies somewhere in between.

Regardless of the polarized nature of the topic, there are some intriguing aspects which requires some scrutiny from an intergenerational perspective. The deficit and the debt were the central theme of the 1993 election as the deficit had risen to the highest levels in a very long time peaking at $3.3 billion in 1992/93. Yet the 1993 campaign was not a battle over whether to raise taxes or to cut spending. Instead, it was a question of how far and how fast to cut spending. The Alberta Liberals, under Laurence Decore, campaigned on a package of "brutal" budget cuts, whereas Klein's Progressive Conservatives campaigned on "massive" ones (Martin 2002, 129). Specifically, Klein promised a 20% cut in government spending and no new taxes, while the Liberals proposed a cut of approximately 6% ($1 billion of a $16 billion budget) while liquidating the Heritage Fund to reduce the debt.

4.4.1 Causes of Debt

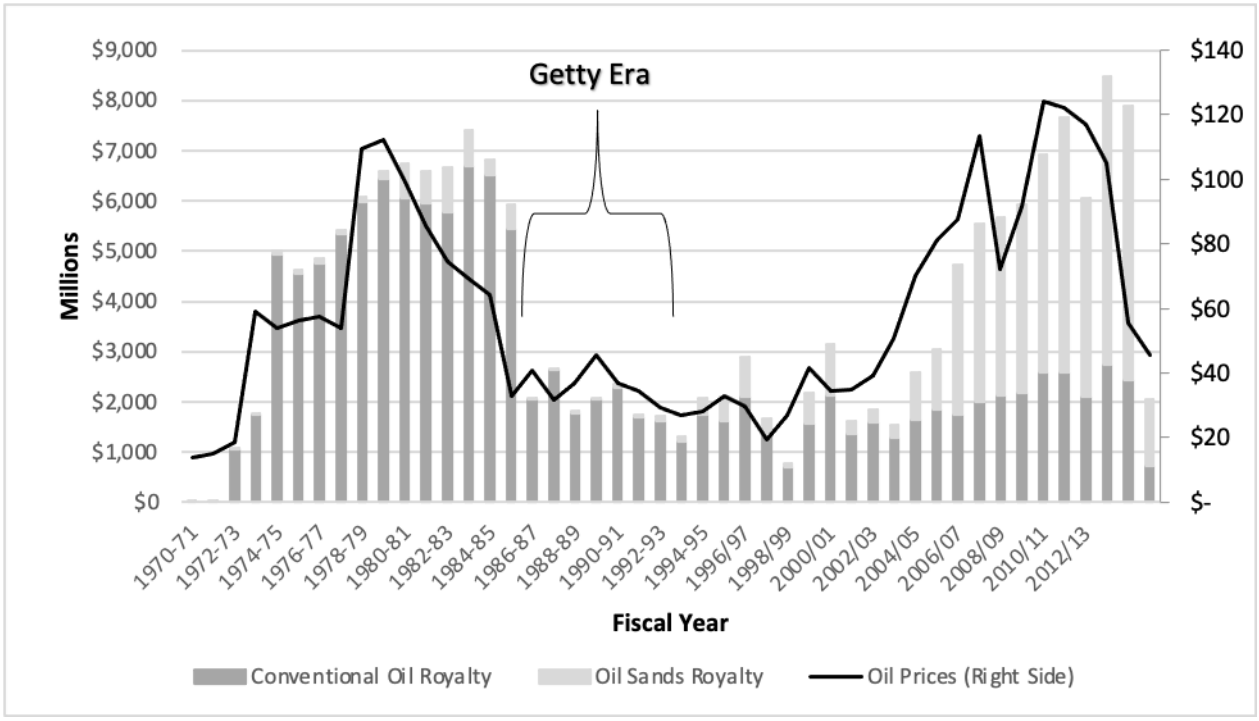

Figure 22: Alberta Historical Resource Revenue. Source: Government of Alberta (2018), BP Statistical Review.

This dramatic reversal from the Lougheed era was due to some key factors during the Getty era. First, and most significant, was the dramatic drop in revenue from the Lougheed era, one that persisted for a prolonged period (Figure 22).

On the expenditure side, we see the result of an asymmetrical budgetary response to fluctuating resource revenue. Recent analysis by economist Ergete Ferede (2018) shows that "the provincial government's program spending tends to go up by about $0.56 in response to a one-dollar increase in resource revenue, but it is sticky downwards when global commodity prices plummet and the province's non-renewable-resource revenue falls" (Ferede 2018, 14). This "ratchet effect" (Boothe 1995, 98) would provide an institutional bias towards increased spending over time. Premier Getty would surely agree.

An explanation of this 'ratchet effect' is two-fold, and both aspects contradict Getty's reputation as someone who "lacked the desire, the initiative, and perhaps the ability to ride herd on a group of ambitious big spenders around the cabinet table" (B. Cooper and Kanji 2000, 34). First is the systemic explanation. Budgets are often established and commit funding for departments, programs, and initiatives over a certain period beyond the fiscal year for which the budget is tabled. This provides certainty for the funding commitments and contracts (salary, programs, etc.) that are established to ensure commitment to maintain capacity within the public service to deliver on the priorities of a given government. This is why Getty stated, "he inherited a budget based on $40/barrel oil and the price was $13" (Boothe 1995, 94), and that controlling expenditure, particularly after a period of rapid growth, was comparable to "turning the Queen Mary" (Boothe 1995, 92). Second, given the remarkable revenue growth Alberta experienced in the 1970s, it was reasonable to expect that those revenues could plausibly return once countries emerged from the recession of the early 1980s. The objective of the Getty government was to hold spending flat and allow revenues to catch back up, rather than drastically cut spending to reach the seemingly anomalous revenue levels. On this front Getty was quite successful, as his government demonstrated remarkable restraint during his tenure. "By 1992 annual growth in program spending averaged 2.3%" (Lisac 2004, 249), and he succeeded in having the lowest spending growth rate of any province during this period, significantly lower than the 10% Ontario averaged (Taft 1997, 16). Spending in areas such as health care, education, and social services were on par with or lower than any other province in Canada and remained stable. Getty was slowly reducing the deficit until the 1991 recession occurred and revenues plummeted once again.

4.4.2 Addressing the Deficit Part 1 – Financial Review Commission

The Financial Review Commission was given the task of investigating two separate but related issues: "the appropriateness of the accounting principles used to prepare the province's financial statements and methods to improve the usefulness, clarity, and timeliness of the financial reports. [And] the financial position of the province as of March 31, 1992, and forecasts of provincial revenue, expenditure, deficit and debt for 1992-1993 and 1993-94, based on current programs" (Alberta Financial Review Commission 1993)

This review included all areas of government finances including the Heritage Fund, and "loans, investments and guarantees" that were generally used for 'province building' initiatives under Lougheed and Getty. The commission was only given two months to complete this task as it was appointed in January 1993 and directed to report by March 31 of that same year just prior to the election in June. While the financial review would undoubtedly shape the eventual policy decisions by the Klein government, the short duration of the review betrayed the underlying political purpose of the commission, which was to prime the public for an election campaign focusing primarily on budget cuts (McMillan and Warrack 1995; P. I. Wilson 2000).

4.4.3 Addressing the Deficit Part 2 – The Klein Revolution

After winning the 1993 election, the "Klein Revolution" (Lisac 1995) was implemented.[62] Between 1992/92 and 1995/96, government program expenditures dropped

[62] For a more fulsome analysis of Alberta's deficit reduction efforts see Bruce, Kneebone, and McKenzie (1997). A more critical assessment is given by Harrison and Laxer (1995) in the short term, while Harrison (2005) provides an assessment of the longer-term legacy. Finally, or an analysis comparing the Alberta experience to other provinces see Boothe and Reid (2001).

27.5% from just over $16 billion to $12.7 billion. However, the cuts were not evenly distributed. Social services and other program expenditures received the lion's share (Table 5). Interestingly, educational spending still increased between 1992/93 and 1993/94, although in the budget speech just prior to the 1993 election Provincial Treasurer Dinning suggested this was in part due to growing enrollment.[63] Either way, in two short years, the Alberta government would return to balance for the 1994/95 fiscal year.

	Expenditures ($ millions)									
	Health	**% change**	**Social Services**	**% change**	**Education**	**% change**	**Other Program**	**% change**	**Total Program**	**% change**
1992/93	4,352	-	1,889	-	3,904	-	6,031	-	16,176	-
1993/94	4,194	-4%	1,721	-10%	4,036	3%	5,172	-17%	15,123	-7%
1994/95	3,928	-7%	1,495	-15%	3,756	-7%	4,301	-20%	13,480	-12%
1995/96	3,773	-4%	1,456	-3%	3,713	-1%	3,739	-15%	12,681	-6%
1996/97	4,006	6%	1,511	4%	3,738	1%	3,446	-9%	12,701	0%
1997/98	4,401	9%	1,564	3%	4,081	8%	3,727	8%	13,773	8%
1998/99	4,660	6%	1,560	0%	4,241	4%	3,885	4%	14,346	4%
1999/00	5,341	13%	1,668	6%	4,735	10%	4,612	16%	16,356	12%

Table 5: Alberta Program Expenditures 1992-2000. (Source: Kneebone and Wilkins 2016).

The government would also enact two laws to entrench its debt reduction efforts. The first was the Deficit Elimination Act (1993). This law dictated the size of deficits allowable as

[63] For a more in-depth analysis of the program cuts in each program area, see chapters 8-12 in Bruce, Kneebone, and McKenzie (1997).

the government pursued a balanced budget. It also imposed "a requirement that the amount of resource revenue upon which the government could base spending in the current fiscal year could be no greater than the average amount of resource revenue available during the five preceding fiscal years" (Kneebone 2005, 666). The effect on the budgeting process was to encourage the systematic underestimation of revenues and overestimation of expenditures to ensure that budgets were in fact balanced rather than seek to project actual revenues and expenditures as accurately as possible.

The second law, the Balanced Budget and Debt Retirement Act (1995), required all excess revenue to be applied to debt reduction, outlined minimum payments to the debt, and prioritized a payment schedule that ensured the debt was paid off by 2009-10 fiscal year. This entrenched debt repayment as the primary fiscal policy of the government and limited its own options when the deficit was eliminated. The government thus, rightly or wrongly, chose to narrowly focus on debt elimination at the expense of a variety of other governing options.[64]

From an intergenerational perspective these efforts made a dramatic impact on Alberta's overall fiscal picture, although at a slower pace and scale than what was achieved by Premier Lougheed, as net assets went from a low of -$4,844 in 1993 to $12,132 in 2006 in (2016 dollars). But to understand the full picture of Premier Klein's tenure in this regard, we also need to look at the Sustainability Fund.

4.5 Sustainability Fund

[64] For an assessment of the efficacy of these laws and other similar balanced budget laws see Philipps (1996), and Simpson and Wesley (2012).

The Sustainability Fund was established in 2003 by the Klein government, right as the debt was being paid off. Its objective was to reduce resource revenue volatility in the budget, and it served as the sort of stabilization fund we saw described in Chapter 2, one with set operational rules. The government capped the amount of non-renewable resource revenue that would be used in any given year at $3.5 billion. The 2003 budget which established the fund stated, “this is about the average of actual non-renewable resource revenue for the period from 1981-82 to 2001-02, excluding the unprecedented spike in 2000-01” (Government of Alberta 2003, 10). Any amount of resource revenue above that was to be transferred to the Sustainability Fund, while if resource revenue fell below $3.5 billion then the government could draw from this fund.

The fund was initially capped at $2.5 billion dollars, which was approximately 10% of the overall budget at the time. This amount was also chosen because it “should protect against two consecutive years of weak resource revenue, or one year of both weak resource revenue and a major disaster” (Government of Alberta 2003). The fund was filled within a year. By 2007 it had grown to $7.7 billion, which was “$5.2 billion higher than the $2.5 billion minimum amount set out by legislation” but was allowed to get that high because it reflected the “higher risk associated with current energy prices” (Government of Alberta 2007, 10).

In 2009, the Fiscal Responsibility Act was adopted, which combined assets “in the Capital Account and those set aside for Carbon Capture and Storage and GreenTRIP” with the Sustainability Fund “which is forecast to have a book value of $16.8 billion on March 31, 2009” (Government of Alberta 2009, 56). This marked the fund’s peak in value and was similar to the Heritage Fund itself. Shortly thereafter, it would be relied upon, as mandated in the Fiscal Management Act, as oil prices and resource revenue in the province plummeted (Giovannetti and

Jones 2015). In the 2014-2015 fiscal year the Sustainability Fund - now named the Contingency Account[65] - had a value of approximately $4.6 billion as of March 31, 2014 (Government of Alberta 2014, 27). In December 2016, the Contingency Account was depleted (Government of Alberta 2019, 166).

The Sustainability Fund sought to achieve the laudable goal of revenue stabilization. However, the experience of the fund illustrates the difficulty of sticking with those plans. Granted, the 2008 financial crisis was unforeseen and unprecedented and many governments around the world scrambled to figure out how best to respond to these new circumstances. Even so, it 13-year experience of the Sustainability Fund showcases the extreme volatility of Alberta's revenue. That the fund was established in 2003, grew to the size of the Heritage Fund within 6 years (albeit by reallocating some other funds no longer deemed necessary), and was then exhausted less than a decade later speaks to the challenge associated with revenue volatility the province faces. To attempt to respond to this volatility through spending cuts would create havoc for government departments and services, as well as negatively impacting the economy.

Indeed, it could be argued that the revenue volatility problem is in fact the critical impediment standing in the way of addressing concerns about intergenerational equity. Despite efforts such as the Sustainability Fund, the Alberta government continues to scramble from crisis to crisis as the boom-and-bust cycle continues. Being forced to be perpetually reactive rather than proactive makes it nearly impossible to think in longer terms, let alone those that involve future generations.

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[65] In 2009-10, the Capital Account was merged into the Sustainability Fund. In 2013-14, the Sustainability Fund became the Contingency Account (Goverment of Alberta 2019, 166n2).

4.6 Discussion

The creation of the Alberta Heritage Savings Trust Fund is the central policy for saving resource wealth in Alberta's history. It truly was a pathbreaking and innovative approach to dealing with non-renewable resource revenue and became the model which inspired the Norwegian fund to which the Heritage Fund now gets compared. However, significant saving also occurred under Premier Klein through debt repayment and the Sustainability Fund.

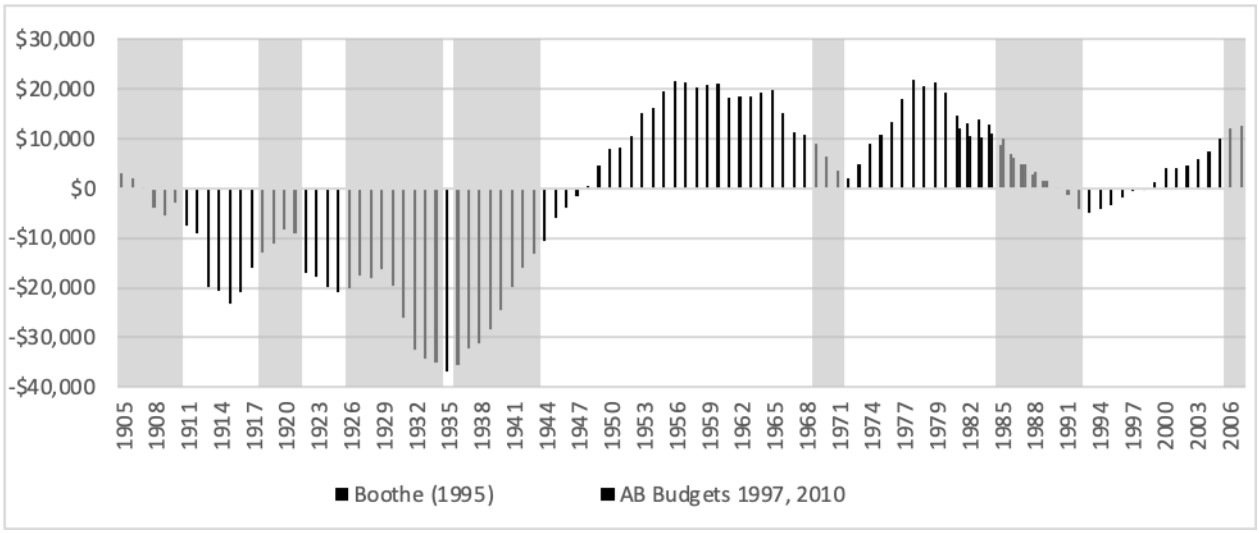

Figure 23: Net per capita assets 2016$. Grey/white vertical bars represent tenure of different premiers.

With the combined savings from the Alberta Heritage Savings Trust Fund, the Sustainability Fund, and overall debt repayment during the Klein era, we get an overall picture of the province's financial assets that is quite stark. Figure 22 shows the total per capita assets of the Alberta government for its entire history in 2016 dollars. The entire history is included because it gives greater context to the rapid nature of asset buildup and depletion over the period in question. It is important to note that this chart is comprised of two separate data sources. The data from 1905-1990 comes from Paul Boothe's book *The Growth of Government Spending in Alberta (1995).* The data from 1982/83 fiscal year until 2006/07 comes from Alberta Budget Historical Consolidated Fiscal Summary tables in the 1997 and 2010 Fiscal Plans (see also

Ascah 2013; Government of Alberta 1997, 50, 2010, 89). While there is a little discrepancy between the datasets, (shown where the data sets overlap) the overall picture is consistent.

Premier Lougheed's Progressive Conservatives ran one deficit before revenues and the overall asset picture exploded with windfall revenues coming from the first and second oil shocks. Alberta's position reached a peak asset position of approximately $21,000 (2016$) per capita in 1981. Lougheed himself ran a few deficits before retiring, at which point Premier Getty, as has been noted before, inherited a government whose finances were overly dependent on resource revenue. While he was able to restrain government spending, Alberta entered a net debt position between the 1990/91 and 1991/92 fiscal years just prior to his retirement.

The Klein government quickly eliminated the deficit and then dramatically improved Alberta's asset position from a low of -$4,800 per capita in 1993/94 to a high of over $12,000 per capita in 2006/07 in 2016 dollars, just over a decade later. The 2020 Alberta budget shows a net debt of $27.5 billion or -$6,286 per capita in assets. This speaks to the volatility and shows how the over reliance of the Alberta government on resource revenue presents fiscal challenges. It truly is a revenue rollercoaster.

	Saved	**Total Resource Revenue**	**Savings Rate**
Lougheed	$48,988	$127,210	39%
Getty	-$44,657	$42,027	-106%
Klein	$52,570	$116,644	45%

Table 6: Resource Revenue Savings Rates in Millions 2017$ (Source: Kneebone and Wilkins, 2016).

Comparatively speaking, Klein out saved Lougheed. During their respective tenures Lougheed saved approximately 39% of the resource revenue that came in while Klein saved approximately 45% of the resource revenue, in part due to the additional savings happening

through the Sustainability Fund in addition to debt repayment (Table 6). These savings rates also take into account deposits and withdrawals from the Heritage Fund.

Given the positive saving rates of both premiers, what accounts for this? Recall the three conditions outlined by Jacobs (2011) necessary for governments to impose costs on the present for future generations. Elected officials require electoral safety, institutional capacity, and a low cost of implementation.

In both cases, both Lougheed and Klein had just won significant majority governments. Lougheed's 1975 election won him an astounding 69 out of 75 seats, while Klein had a stunning reversal of fortune and won 51 out of 83 seats in an election that was supposed to decimate his PCs.

More critically, the savings agenda – the Heritage Fund for Lougheed and deficit elimination and debt repayment for Klein – were central planks of the party's platform in each case. While discussion of governing mandates can be problematic, as voters vote for parties for a whole host of reasons beyond specific policy proposals, this is likely as strong an example as one would find of an electoral mandate for a party's platform.

Each premier also had institutional capacity to enact their policies. A majority government in a parliamentary system provides little opposition to their chosen policies. Regardless, both felt some opposition. Lougheed's opposition was from within the legislature, but largely over who made investment decision for the Heritage Fund. Opposition was not against the Heritage Fund itself, but instead a question of its governance and accountability.

The Heritage Fund also appealed to what Jared Wesley sees as an underlying code in Alberta's political culture of individualism, populism, and autonomy. This appeal gave the Heritage Fund a broader and deeper base of support within public opinion. A poll conducted in 1982 confirms this broad level of support (Thompson Lightstone & Company Ltd. 1982).[66] When asked whether it was a good idea to establish the Heritage Fund, 91% of Albertans thought it was either a good idea, or a very good idea. That support remained strong, as 83% of respondents said it remained a good idea today.

Klein faced much stronger opposition, but in this case it was from the public feeling like he was cutting too much too fast. Stories of overly lengthy hospital wait times, crumbling infrastructure and other public complaints continued to build (Harrison 2005; Harrison and Laxer 1995; Taft 1997).

Finally, and most importantly, the cost of implementing their policies was extremely low. For Lougheed, this was not a significant amount of savings. As he said himself, "We are taking 70% of that depleting resource to meet your needs today – *all we are asking you to do is put aside 30%.*[67] And at the end of his 'house selling' analogy he states explicitly "We are really not harming anything that is happening today in terms of service – not to squander but to save for the future."[68]

Similarly, the provincial treasurer, in first announcing the Heritage Fund, also stated "After allowing for the substantial tax reductions and new expenditure programs contained in

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[66] Provincial Archives - PR1985.0401/293– Public Opinion Poll.
[67] Provincial Archives - PR1985.0401/928 – HERITAGE FUND Election Policy 1979.
[68] Provincial Archives - Accession PR1985.0401/928 - HERITAGE FUND Election Policy 1979.

this Budget, I estimate that $1.5 billion will be available by December 31, 1975, for transfer to an Alberta heritage trust fund for present and future Albertans."[69] It isn't prudent fiscal planning when the government literally cannot spend the money fast enough.

For Klein, there were greater costs. Citizens did see the impact of the spending cuts, but a collective dislike of deficits and the debt guaranteed some public support. However, it is notable that the costs associated were not direct costs on citizens such as additional taxes but indirect costs through reductions in services and supports. While this wasn't the rationale for Klein's focus solely on the spending side of the government ledger, it does shift where the costs are ultimately borne. At no other time would Alberta have had a window of opportunity to bring in additional revenue sources to wean itself off volatile resource revenue. But doing so would have required more direct costs to be placed on citizens.

This case thus confirms the necessary conditions identified by Jacobs for allowing long-term policy development. But there were also factors which undermined the ability of the Alberta government to save for the long-term.

[69] Hansard Feb 7, 1975 - Budget Speech

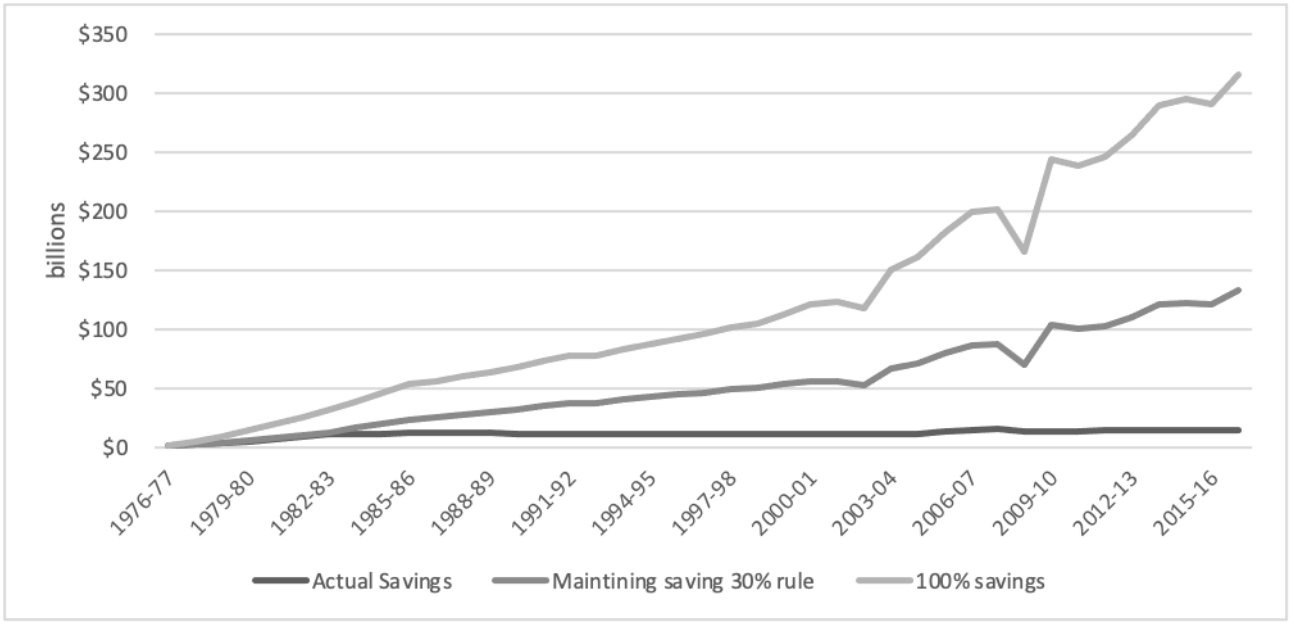

Figure 24: Cumulative Savings of Non-renewable Resource Revenue (millions). Source: Kneebone and Wilkins, 2016. See Appendix 4-B for data.

If we look at the cumulative saving of non-renewable resource revenue, we see the lost opportunity of Alberta's resource wealth governance (Figure 24). This chart illustrates the savings conducted by Lougheed through the Heritage Fund between 1976-1986. It also shows what the Heritage Fund could have been had the government had a 100% savings rate. Had the government maintained its 30% savings rule, the Heritage Fund would be valued at approximately $130 billion by the time Klein left office, and approximately $150 billion by 2010 providing approximately $10 billion a year in returns. Had the government adopted a 100% savings rate, the Heritage Fund would be worth over $300 billion. The annual return from that fund would be able to fund approximately half the government's budget today. Despite some savings, there was a definite pull towards the short-term use of natural capital to pay ongoing operations. What explains this?

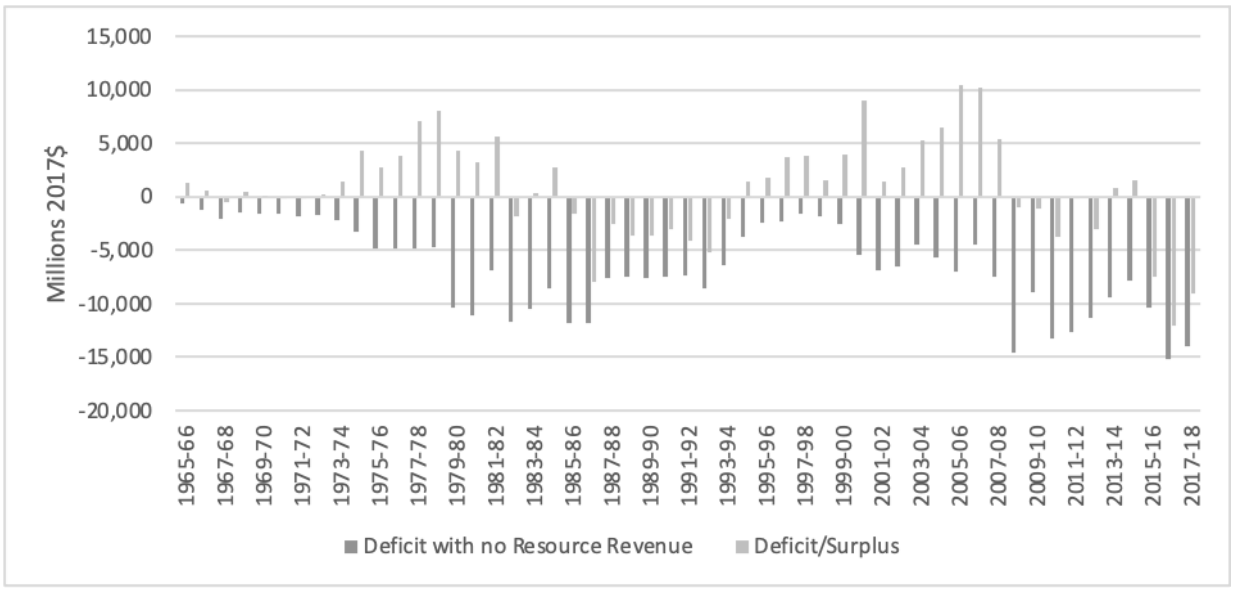

Figure 25: Alberta Budget Resource Revenue Reliance (Source: Kneebone and Wilkins, 2016).

First, the budget's reliance on resource revenue. This was a conscious fiscal decision by the Lougheed government when first faced with windfall revenues that was later packaged and rebranded as the "Alberta Advantage". A continuing fiscal system of low taxes (including no provincial sales tax) and high spending. When removed from the budget, we see the extent of this reliance (Figure 25). This figure shows how the Alberta government, since at least the mid-60s, has never run a surplus without being reliant on non-renewable resource capital. This has entrenched a false sense of fiscal responsibility into the minds of Albertans, one that undermines the ability of present and future governments to tackle these fiscal challenges (Salomons and Béland 2020).

The other policy challenge the government faced was the time inconsistency problem due to changing fiscal conditions and the failure to maintain the long-term objective and rationale of the Heritage Fund. Owing to the absence and resulting lack of power of future generations, maintaining policy objectives over time against more pressing or immediate needs is

challenging. While the Alberta Heritage Fund has existed from 1976 until now, the goals of the fund have shifted as economic conditions changed.

When the Heritage Fund was created, the design of the fund paralleled what others (Baena, Sévi, and Warrack 2012; Davis et al. 2003) would classify as a 'intergenerational fund'. The primary objective of an intergenerational savings fund is to set aside wealth for future generations. Intergenerational funds typically have rigid operational rules, such as the requirement to deposit a specified share of resource revenue into the fund (Ossowski and Halland 2016, 71). The Heritage Fund's requirement to allocate 30% of all resource revenue into the fund meets that criterion.

When the government amended the Heritage Fund rules and reduced the deposits from 30% to 15% of non-renewable resource revenue and began withdrawing the annual interest from the Fund to help reduce the size of the deficit, the government converted the fund from an intergenerational fund to a de facto stabilization fund.[70] This allowed the government to stabilize revenues somewhat while holding spending in check. Alberta economists Landon and Smith note that "rapid declines in energy revenues can lead to pressure for cuts in expenditures that are difficult to accomplish quickly and efficiently. Revenue volatility that drives government expenditures can also cause fiscal policy to be procyclical, thus magnifying movements in economic activity" (Landon and Smith 2010a, 1).

[70] It is also worth noting that this objective, from a report in 1993 that would result in the Heritage Fund's overhaul (Alberta Financial Review Commission 1993), does not include "save for future generations" but "save for the future". While a subtle change, the objective lines up just as much with a stabilization fund as it would with an intergenerational fund.

It should also be noted that at the time (1987) this alteration to the Heritage Fund was intended to be a "short-term" financing option for government deficits.[71] In other words, the government was using the Heritage Fund to help finance deficits because it could give itself a better interest rate than what it could get from international lenders.

When the Klein government reformed the Heritage Fund in 1995, it inflation proofed the Fund and ensured that the fund improved the province's overall fiscal position. But the government did not fundamentally decide what purpose or objective the Fund served. The logic of 'saving a depleting form of capital' that formed the basis of the original Heritage Fund policy goal was no longer present.

As the objectives and settings of the Heritage Fund we altered over its history, this fits with what Rayner, Howlett, and Wellstead (2017, 475) would label a form of policy conversion (see also Béland 2007; Hacker 2004; Thelen 2000). For future oriented policies, policy conversion is a likely outcome over time as the continued rationale for future benefits is difficult to maintain as immediate conditions inevitably change.

At the beginning of this chapter, we asked why should the state save non-renewable resource revenue? The answer is to remove a volatile source of revenue from the budget and rely on more dependable sources. The second is to maintain a valuable stock of capital, even if

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[71] "The adjustment which went through by order in council last Tuesday and which allows the government to use the liquidity in the Heritage Savings Trust Fund on a short-term basis is simply to allow us to have a supply of money should the government's efforts to borrow in a variety of markets be frustrated for whatever reasons, whether it's interest changes, the appetite of the market, or the federal government in particular going to the market. Therefore, we would have a short-term supply of money in the heritage fund. I underscore the word "short-term," and I should clearly point out that we will be repaying the heritage fund at a rate of interest once the long-term borrowing has been put in place. We are now examining a variety of opportunities for us to borrow using the government of Alberta's triple A rating — the best in Canada — in a variety of markets."
~ Alberta Provincial Treasurer Johnston - Hansard Aug 20, 1986.

converted from natural capital to financial capital. On both these accounts, Alberta failed. The rollercoaster of Alberta's revenue and assets makes it nearly impossible to accurately budget more than one year out into the future. Nor did it maintain the overall stock of capital and thus, to return to Lougheed's own analogy, Alberta sold the house to pay for the groceries.

That said, on this latter issue, savings by the state is not the entire story. The capital was not just lit on fire but distributed to the present generation of Albertans and would *hopefully* benefit future descendants. It is for this reason that we now turn to distribution of Alberta's non-renewable resource wealth in Chapter 5.

CHAPTER 5: DISTRIBUTION

5.1 Introduction

This final chapter examines the intergenerational consequences of how Alberta distributed, and continues to distribute, its non-renewable resource wealth. The government has more explicit control over the distribution of funds than it does over resource wealth collection, where external economic factors such as the price of oil or strength of the economy dictate the overall amount collected. Does the government transfer wealth to future generations directly through dividends or through the tax system? Does it transfer wealth to future generations indirectly through investments in human and physical capital that will pay financial and non-financial dividends well into the future? The answers to these questions have different implications for intergenerational equity. Decisions concerning distribution implicitly reveal who counts as "future generations" of Albertans: future residents of the province or future descendants of current Albertans. These questions get at the core motivations behind this dissertation.

Saving, when viewed intergenerationally, simply defers wealth distribution to the future. But at *some* point, wealth distribution must occur. Distribution could be restricted to the annual interest earned, thereby maintaining the principal, or it could be set aside for an anticipated future event (such as the eventual decline of oil and gas revenue). But a savings fund that saved 100% of the revenue *and* its earned interest in perpetuity would be nonsensical.

It should also be noted that revenue that is saved is invested in something and while I make clear distinctions between investments as a means of distribution and saving, those distinctions are not as clear cut in real life. A whole suite of options remains for what to do with that money, regardless of whether it is distributed immediately or at some point in the future.

This chapter asks and answers: what are the key policy choices behind how Alberta distributed its resource wealth; what key changes were made to those policies over the period in question; what explains those changes; what impact did those changes have on present and future generations when viewed with an intergenerational lens; and what lessons can we learn from all of this?

This chapter examines two separate types of intergenerational distribution mechanisms: financial transfers and investments. Financial transfers, as discussed in Chapter 2, include any form of direct or indirect transfer or flow of resource revenue to Albertans. Direct transfers can include regular or ad hoc payments to Albertans. Indirect transfers can be accomplished through the tax system. The Government of Alberta has distributed the majority of the resource wealth it has collected by making indirect transfers via its tax system that have now become entrenched and are collectively known as the Alberta Advantage (Salomons and Béland 2020).

The second type of intergenerational distribution mechanism is investment. This is investment specifically made in physical or human capital which provides both immediate benefit to the present generation and longer-lasting ones to future generations. Consider, for example, the economic benefits that might come from investments into electrical grids, transportation systems (highways or high-speed rail networks), or universal access to high-speed internet. Now think about how much greater the pay-off for those kinds of investments might be when comparing, as Collier does, Nigeria to Norway. For Norway, the rate of return "on yet

more capital…would be modest" (Collier 2010, 113).[72] Such investments face diminishing returns as a jurisdiction develops. Consider also how a highly educated citizenry can help a country innovate and improve its productivity to meet or solve new challenges it faces, such as unlocking *in situ* oil sands mining in the 1990s or decarbonizing an entire energy system in the 2020s and beyond.

This chapter begins by examining the primary mechanism by which resource wealth has been distributed: its tax system. This method of wealth distribution was established by Lougheed and continues to this day. The chapter will then look at the Alberta Resource Rebate, more commonly known as "Ralph Bucks," which distributed resource revenue to Albertans following the full repayment of the provincial government's debt. Finally, the chapter will examine historical spending on human and physical capital, which has the potential to create long-term prosperity for future generations but simultaneously provides benefits to the present generation.

5.2 Tax System – The Alberta Advantage

5.2.1 Establishment of the Alberta Advantage

Since the 1950s, the primary way Alberta has distributed its resource wealth has been through the tax system (Boothe 1995, 41; Kneebone and Wilkins 2018, 2). The Alberta government keeps taxes artificially low when compared to its level of spending and fills that gap with resource revenue – an approach McMillan and Norrie (1980, 214) called a "collectivist

[72] The challenge, one recognized by the International Monetary Fund, is absorption – the ability of the economy to absorb extra investments. Dramatic increases in investment, when supply chains are limited, only increases demand, and thus cost, of a limited number of capital good. Collier also highlights the challenges of corruption in low-income countries without robust, transparency, and accountable institutions. Investments to "improve public investment, inducing private investment, and containing the price of capital goods" is what Collier recommends to address the absorption problem. Collier refers to this as "investing in investing" (Collier 2010, 134).

rentier society". This resource revenue-funded tax break thus serves as a *de facto* transfer mechanism due to foregone taxation.[73] When windfall revenues appeared after the first oil shock, this means of resource wealth distribution was accelerated. This fiscal framework, which would later be branded by Premier Klein as the "Alberta Advantage," has now become so fully entrenched within Alberta's political culture that any suggestion to modify it, such as by introducing a provincial sales tax, is viewed as political suicide (Salomons and Béland 2020).

Recall in chapter 4 that provincial treasurer Gordon Miniely, at the time the Heritage Fund was created, clarified that these revenues "are not, and will not, be available to finance ongoing, normal budgetary expenditures." Rather, an estimate of $1.5 billion would be put into the fund for "present and future Albertans." He also states that he was not including "incremental crude oil royalties" (e.g., the additional unexpected royalties occurring due to the first oil shock). By doing so he tacitly acknowledged that other crude oil royalties were already being used to fund "ongoing, normal budgetary expenditures". The reliance by the Alberta government on resource revenue can be traced back all the way to the legacy of the Leduc discovery in 1947, as Kneebone and Wilkins (2018, 2) highlight. The availability of non-taxation sources of revenue was an opportunity too good to pass up. Miniely then contradicts himself by stating that he had implemented "substantial tax reductions and new expenditure programs" because of this increased revenue stream. Resource revenue was not only a component funding "ongoing, normal budgetary expenditures" but was becoming an increasingly central component of the

[73] The foregone revenue from the lack taxes, most notably a sales tax, operates as a de facto transfer regardless of whether resource rents are involved. For the purpose of this dissertation, I focus on the resource revenue collected, saved, and distributed and do not dig into counterfactuals of hypotheticals of what revenue *could* have been collected during this period.

overall budget during this period. The government was making a conscious and intentional fiscal policy decision to increase its reliance on resource revenue.

Finally, this approach to resource wealth governance is fundamentally disconnected from the same government's own framing of resource revenue with regards to the Heritage Fund. The government continually framed the rationale for saving resource revenue as a means of saving a "depleting form of capital". Yet this rationale did not extend very far. At the height of contributions to the Heritage Fund, 70% of resource revenue was still used to fund "ongoing, normal budgetary expenditures".

5.2.2 Maintaining the Alberta Advantage

This approach would continue until 1983/84. At this point, the combined effects of high interest rates, high inflation, the National Energy Program, and lower oil prices due to increasing production from a fragmented OPEC cartel negatively impacted the Alberta economy. The Alberta government's operational spending had grown at a tremendous pace and, with the sudden drop in revenue, it recognized the problem but considered it one to be dealt with in the medium-term rather than by making drastic cuts.

In response, the Alberta government implemented several changes. First, in the year prior (1982/83) the government took a Keynesian approach and increased capital spending by approximately 30% to both encourage additional economic activity but also capitalize on lower labour costs that had been inflated during the boom years of the 1970s (L. Hyndman 1982). For the following year's budget, though, the Alberta government curtailed spending, restricting it to a 0.55% increase. Second, it began withdrawing the annual interest generated by the Heritage Fund to help offset the loss of resource revenue. Third, it reduced the payments to the Heritage Fund

from 30% of non-renewable resource revenue to 15%. Finally, the government increased personal income taxes from 38.5% to 43.5% of federal taxes (Canadian Tax Foundation 1985), although this was done later in the year, just prior to the 1984/85 budget, to shore up provincial revenues (L. Hyndman 1984).

These changes were intended as a short-term strategy to buy time while the government waited for resource revenue to rebound. The transfer of investment income from the Heritage Fund was only supposed to last 24 months, covering the 1982/83 and 1983/84 fiscal years. However, interest income transfers continued in the 1984/85 and 1985/86 budgets when the economic situation did not improve. By continuing to put 15% of non-renewable resource revenue into the fund, the Alberta government was essentially making it inflation proof. Between the 1983/84 and 1985/86 fiscal years, the real value of the Heritage Fund held steady at approximately $28.6 billion in 2022 dollars ($12.6 billion in nominal value).

The overall strategy of the government was to hold spending constant and allow the economy to recover. By 1985/86 the plan seemed to be working. Lougheed stepped down as Premier in November 1985, and, with no real heir apparent, Don Getty was lured back into politics (having retired in 1979) to take up the premiership (Lisac 2004). The 1984/85 budget saw a $1.2 billion surplus and the spending began to flow again. The government would approve a 17% increase in overall spending for the 1985/86 fiscal year. Finance Minister Lou Hyndman's final budget speech in April 1986, just prior to the election that year, delivered a positive assessment that the plan was working. The government would again hold expenditures constant while the fundamentals of the Alberta economy would improve, despite short-term uncertainty about oil prices.

Unfortunately, oil prices collapsed, dropping from nearly $27 per barrel in 1985 to $14 per barrel in 1986. This resulted in a 60% decline in resource revenue, and a 50% decline in corporate income tax revenue. Combined, this caused a 28% decline in overall government revenue (dropping from over $13 billion in 1985/86 to $9.6 billion in 1986/87) and created a $4 billion deficit.

The government responded by ceasing all payments to the Heritage Fund while continuing to hold the line on expenditures. The government also increased several taxes to reduce its reliance on resource revenue. The personal income tax was raised 3% from 43.5% to 46.5% of the effective basic federal tax, and the corporate income tax rate was increased from 11% to 15% (Canadian Tax Foundation 1987). In addition, the government introduced two "temporary" taxes: an 8% high income surtax and a 1% flat tax, while increasing low-income tax relief supports. While it had the ability to increase taxes further, the Alberta government celebrated the fact that it maintained the lowest taxes in the country and continued to not have a provincial sales tax. The plan and expectation at the time was that the budget would be balanced by 1990/91.

Despite his negative reputation for allowing Alberta's debt to grow significantly (Lewis 2012), Getty's government continued to hold the line on spending, aiming to keep it at or below inflation while they waited for revenues to pick back up. From 1985/86 to 1991/92, the expenditure growth rate was limited to 2 per cent, well below inflation at the time and well below that of any other province in the country (Kneebone and Wilkins 2018; Taft 1997, 16). However, during this time the Getty government suffered a series of unfortunate events. Resource revenue continued to stagnate and remained significantly depressed for much of

Getty's tenure. In addition, a number of very high-profile failures of companies the government had supported as part of its economic diversification efforts also occurred during this time (e.g., the Principal Group, NovaTel, among others (Lisac 2004)). The government was slowly making gains in reducing the size of its deficit. Yet this progress quickly faded when the 1991 recession dropped revenues once again. All of these factors reached a combined breaking point in the lead up to the 1993 election.

Premier Getty resigned prior to the 1993 election and newcomer Ralph Klein defeated party elder Nancy Betkowski for the leadership of the PC party. Klein distanced himself from his predecessor and campaigned against the PC record. 'Who would best be able to tackle the growing debt and ongoing deficits?' was the ballot question for the 1993 election, as Laurence Decore and the Alberta Liberal Party campaigned on brutal cuts, while Ralph Klein campaigned on massive ones (Martin 2002, 129). Klein won. The resulting deficit reduction efforts became known as the Klein Revolution (Lisac 1995).

5.2.3 Entrenching the Alberta Advantage – The Klein Revolution

Aspects of the Klein Revolution have been discussed in previous chapters, and this is an area of Alberta's history that has received significant attention over the years, earning both praise and scorn (Boothe and Reid 2001; C. J. Bruce, Kneebone, and McKenzie 1997; B. Cooper 1996; B. Cooper and Kanji 2000; D. Cooper and Neu 1995; McMillan 1996; McMillan and Warrack 1995). For our purposes, we will focus our attention on a few specific fiscal policy decisions during this time.

First, the Klein government chose to focus its deficit reduction efforts entirely on the spending side of the budget. The overall target was a 20% reduction in spending by the 1996/97

fiscal year. The government achieved its targeted spending reductions, as total program expenditures declined 23% between 1993/93 and 1995/96. Thanks to an unexpected boost in resource revenue, it even balanced the budget a year ahead of schedule. The data shows that the most significantly impacted areas were health (-13.8%), social services (-24.6%), and other program expenditures including capital spending (-44.1%). Interestingly, and to be discussed in more depth later, education spending only declined by a -4.6% over this same period (Table 7).

	Health	% change	Social Services	% change	Education	% change	Other Program Expenditures	% change
1993-94	$4,194	-3.6%	$1,721	-8.9%	$4,036	3.4%	$5,172	-14.2%
1994-95	$3,928	-6.3%	$1,495	-13.1%	$3,756	-6.9%	$4,301	-16.8%
1995-96	$3,773	-3.9%	$1,456	-2.6%	$3,713	-1.1%	$3,739	-13.1%
Total % Change 1993 - 97		**-13.8%**		**-24.6%**		**-4.6%**		**-44.1%**

Table 7: Government Budget Data. (Source: Kneebone and Wilkins 2016)

The choice to focus entirely on the spending side of the ledger was an ideological one. The PCs were a right-wing party dedicated to low taxes, but this choice also coincided with a much broader and dramatic ideological shift often associated with the term neoliberalism. While the exact definition of neoliberalism is contested (e.g., Birch 2017; Garland and Harper 2012; Iber 2018) it is often associated with deregulation, privatization, and, relevant to this discussion, an overall reduction in government spending. Premier Klein, motivated by this ideological trend, famously stated in an interview with CBC radio that "The government should be getting out of the business of being in business."[74] Lougheed and Getty, on the other hand, had no hesitation in using the power of the government to leverage other economic activity under the guise of

[74] Interview with CBC Radio's *This Morning* on March 23, 1998.

economic diversification or “province building” (Pratt 1977). This ideological trend of neoliberalism believed that the market, not government, was best situated to guide the economy’s overall development.

Choosing to focus entirely on the spending side of the ledger demonstrates how Klein fundamentally misdiagnosed one of the key problems of Alberta’s budget: its over reliance on resource revenue. Instead, he chose to double down on this feature by rebranding it the Alberta Advantage and further entrenching it within Alberta’s political culture (Salomons and Béland 2020). To be sure, he was celebrating the low taxes that Alberta enjoyed, but what was left unsaid was that those low taxes were made possible by the continued reliance on non-renewable resource revenue – a depleting form of capital.

To prime the public for the upcoming budget cuts, Provincial Treasurer Jim Dinning announced in the lead up to the 1993 election the appointment of a commission to review Alberta’s finances. The commission’s mandate was as follows:

The Commission was given the authority and responsibility to inquire into and report on the following by March 31, 1993:

- The appropriateness of the accounting principles used to prepare the province's financial statements and methods to improve the usefulness, clarity and timeliness of the financial reports.
- The financial position of the province as at March 31, 1992 and forecasts of provincial revenue, expenditure, deficit and debt for 1992-93 and 1993-94, based on current programs. (Alberta Financial Review Commission 1993, 1)

The commission’s recommendations covered a variety of issues concerning the budgeting process and accounting principles, how agencies and various funds were governed, and the use of loans and guarantees. Most relevant for our discussion here is its first recommendation:

"Match spending with revenue" (Alberta Financial Review Commission 1993, 6). On the face of it this is a perfectly acceptable and almost benign recommendation. On closer inspection, though, it becomes clear that the report frames the problem as primarily one of spending, not revenue. Essentially, the report diagnoses the province's fiscal problem as a failure by the previous government to cut spending as revenue dropped an average of $4.8B from 1981 to 86 to an average of $2.3B from 1988 to 93 (Alberta Financial Review Commission 1993, 15). What is glaring in its absence is any discussion of additional revenue sources (tax increases, sales tax, etc.) to replace the lost resource revenue. A chart showing the annual deficits from 1985/86 to 1992-93 (forecasted) is titled "Consolidated Annual Overspending," thus framing the issue solely as a spending problem. Given that the commission was tasked with this mandate on January 21, 1993, and asked to report back by March 31, 1993, one could argue that this commission was designed to prime the public for potential budget cuts in the election campaign (Martin 2002, 122).

This commission was also given the task of investigating two separate but related issues: "the appropriateness of the accounting principles used to prepare the province's financial statements and methods to improve the usefulness, clarity and timeliness of the financial reports" and "the financial position of the province as at March 31, 1992 and forecasts of provincial revenue, expenditure, deficit and debt for 1992-1993 and 1993-94, based on current programs" (Alberta Financial Review Commission 1993).[75] This review covered all areas of government finances including the AHSTF, and "loans, investments and guarantees" that were generally used for 'province building' initiatives under Lougheed and Getty.

[75] This discussion of the Alberta Financial Review Commission was used in Salomons and Béland (2020).

There are several ways in which this commission framed Alberta's fiscal challenges. First, it rhetorically framed the deficit as "overspending continues" (Alberta Financial Review Commission 1993, 14). Yet on the following page, the report explicitly links the deficit to the significant drop in *revenue* beginning in 1986. It acknowledges the work Getty's administration did to hold the line on spending but notes that the revenue drop was from such a "higher base," the spending response was not sufficient to close the gap (Alberta Financial Review Commission 1993, 15).

In the end, the report made no recommendations explicitly focused on spending or revenue but recommended:

> *The government should develop and adopt a workable and enforceable fiscal plan, first to balance revenues and spending in a way that eliminates overspending on a sustainable basis, and second, in the longer term, to generate surpluses to eliminate the net debt.* (Alberta Financial Review Commission 1993, 18).

The Klein government wanted to reduce the role and size of government. Klein's vision for government was not about what program spending could be cut or eliminated, but rather which services the government supplied that were actually critical. In a speech in Leduc during the 1992 PC Leadership Campaign (R. Klein 1992), Klein stated:

> *when people ask me, "Which departments would be cut?" I think we need to approach the question from the other direction. We need to ask ourselves "Which departments do we keep?" In other words, which departments are so necessary, so vital in delivering essential services that we identify them first, and then determine the direction we take with the remaining."*

5.2.4 Analysing the Alberta Advantage

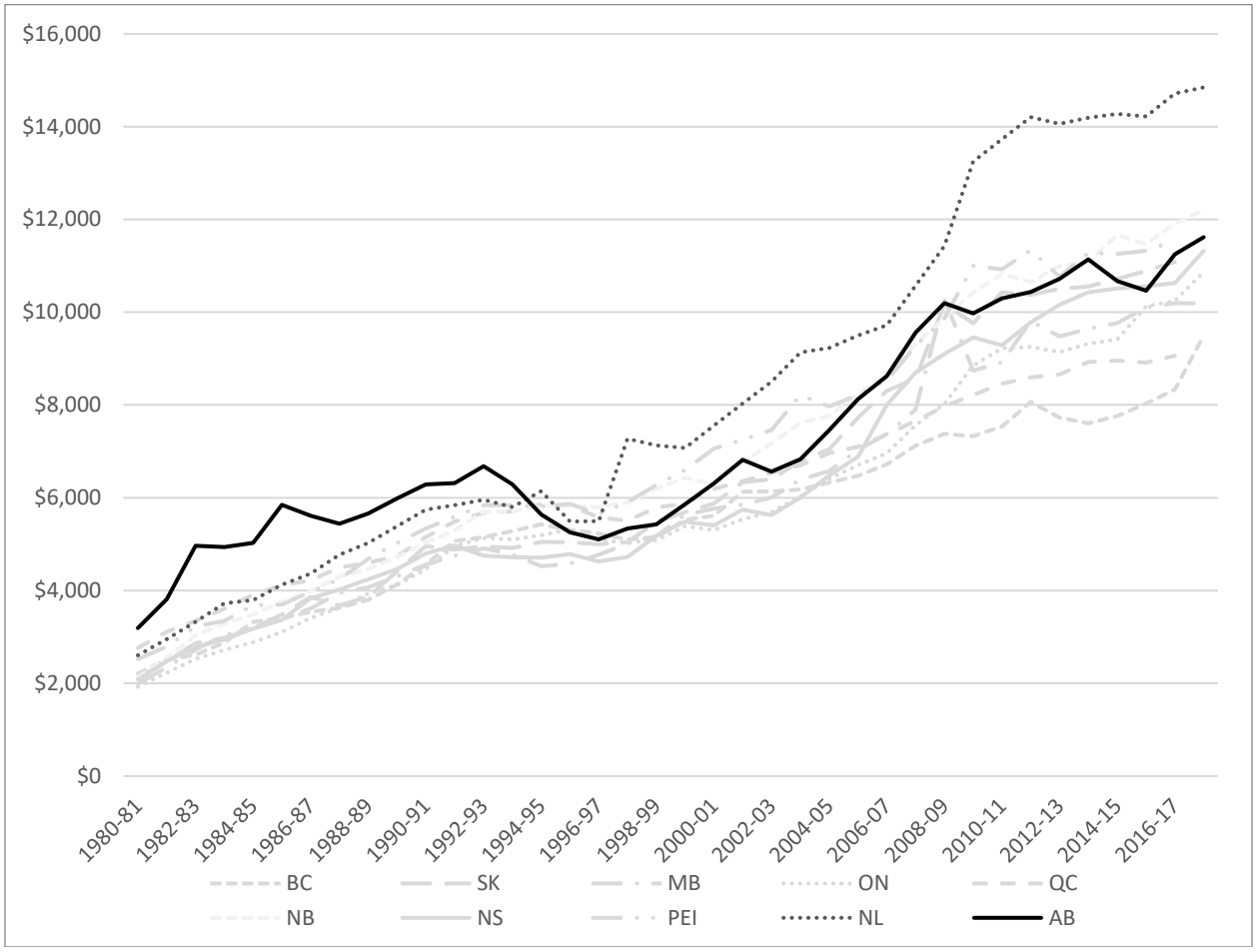

Figure 26: Per-capita Total Expenditures. Source: Kneebone and Wilkins (2018); StatsCan Table: 17-10-0005-01 (formerly CANSIM 051-0001).

While I am critiquing the government at the time for neglecting to look at the revenue side of the ledger, there is evidence that government spending was elevated for the decade preceding the financial commission. Comparison of Alberta's per-capita spending at the time confirms that the province did have the highest per-capita spending in the country (Figure 26).

No analysis will be able to definitively or objectively determine whether Alberta suffered from a 'revenue problem' or a 'spending problem' because any assessment of what spending is 'too much', or 'too little' revenue is ultimately a value-based, political judgement. Nevertheless,

a gap between what the government spends and how much the government takes in from tax revenue is the result of conscious fiscal policy choices made by the government, and the difference between the two, for whatever reason, serves as a transfer of wealth to the then-present-day citizens of the province of Alberta so long as that gap is plugged with non-renewable resource revenue indefinitely. That said, diagnosing Alberta's structural budget challenges as a spending problem alone fails to recognize the policy legacy of Premier Lougheed, who both reduced taxes *and* increased spending.

Regardless of whether the deficit was due to a lack of revenue or overspending, the resulting gap, filled with resource revenue, is a form of resource revenue distribution with intergenerational consequences. Recall that in Chapter 2, we outlined how distribution of resource wealth can occur through the tax regime by providing citizens with government services while keeping taxes at a level below what would be required to fund those services and using resource revenue to fill the gap. That amount of unclaimed tax revenue that would be required to properly fund those government services becomes a de-facto transfer of wealth to the taxpayers residing in the province at that time. Just as the government could 'transfer' money to the Heritage Fund by not withdrawing the annual interest, so to it can transfer money by not taxing Albertans in a manner required for the proper functioning of government.

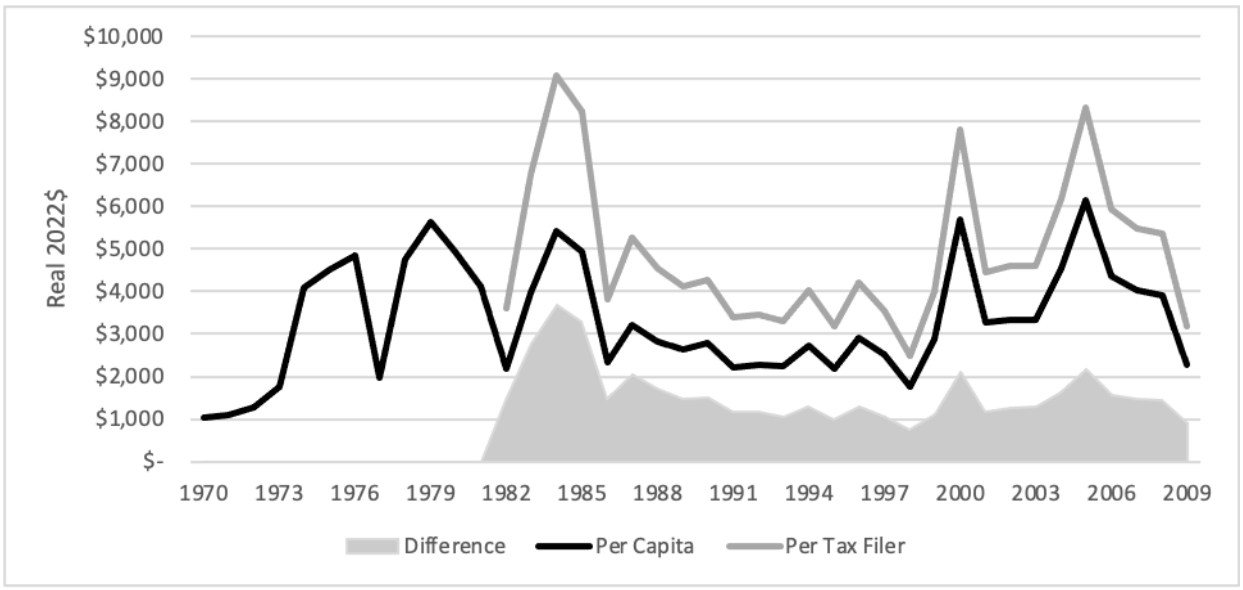

Figure 27: Value of non-renewable-resource-revenue-funded tax break. Source: Government of Alberta (2018); CANSIM 385-0002; FMS data (1970-1989); CPI: 326-0021; Population: 051-0001; Tax filers: 204-0001.

In Figure 27 we see the size of this gap on a per-capita basis and a per taxpayer basis, adjusted for inflation. This chart removes non-renewable resource revenue from the revenue side of the picture. Moreover, it also incorporates deposits or withdrawals from the Heritage Fund into the overall revenue/expenditure picture, as this is primarily resource revenue use being deferred from one period to another. In other words, during the years in which Lougheed was depositing money into the Heritage Fund, those deposits are excluded from the government's resource revenue in the chart and added to the amount of resource revenue the government is relying on when, in later years, the government withdrew the interest that had accrued in the Heritage Fund. The Heritage Fund simply defers when resource revenue is used from one year to another. It is for this reason that the tax/spending gap peaks in 1984 and drops sharply in 1986.

While the structural nature of this tax break measure remains consistent, the magnitude and variability of this measure is due to external factors beyond the government's control. For example, the tax gap itself reflected in Figure 27 is the result of personal and corporate income

tax collected as well as spending decisions. At times, revenues can exceed expectations. Second, revenue increases can have multiplier effects that are difficult to control for as increased personal and corporate income tax revenue can result from higher-than-expected incomes for both citizens and corporations directly and indirectly connected to the oil and gas sector. In other words, increases in oil prices can not only lead to a surplus because of unforeseen increases in resource or royalty revenue, but also due to increased corporate profits, increased wages and/or bonuses, and other increased economic activity that accompany such windfalls. The surplus experienced by the government, even with resource revenue factored out, is less the result of intentional government policy choices and more the result of the fortunate timing of external economic circumstances. Finally, government spending does result in additional economic activity that would not otherwise occur. As a result, an increase in government spending will result in an increase in personal or corporate income tax revenue as individuals and companies conduct the work that the government requires. Such effects are difficult to pull out in the data.

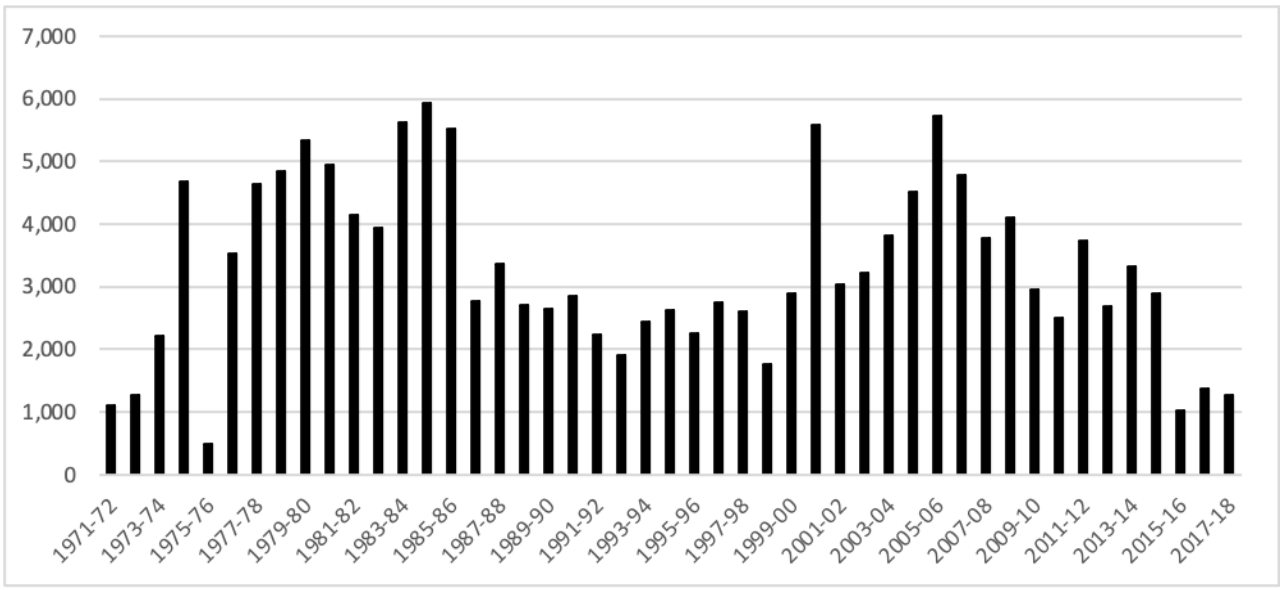

Figure 28: Per-capita Net Non-Renewable Resource Revenue 2022$ (Source: Kneebone and Wilkins (2018). [76]

If we average the per capita net non-renewable resource revenue tax gap over the years of each premier's tenure that is displayed in Figure 28 above, Klein and Lougheed are roughly even. When adjusted for inflation, the average per-capita tax break funded by resource revenue given to Albertans is roughly equal for Premiers Lougheed ($3,604), and Klein ($3,152). Getty comes in much lower ($2,431) but this is the result of a lack of resource revenue rather than any intentional fiscal policy decision on his part.

There are several problems with this means of distributing resource wealth. First, as discussed in Chapter 4, government spending is much easier to increase than to decrease. This "ratchet effect" (Boothe 1995, 98; Ferede 2018) further entrenches resource revenue reliance, leading to problems when this revenue source decreases thanks to the boom-and-bust nature of

[76] This data is from Kneebone and Wilkins (2018). It removes resource revenue when money was set aside in the Alberta Heritage Savings Trust Fund (which is why 1976/77 is negative) but adds that money in when the government began to draw from the fund to balance the budget (hence the jump between 1982/1983). In addition, the difference between Premiers is a function of intentional fiscal policy decisions but also a function of exogenous factors, most notably the amount of resource revenue available to the Premiers. Both Lougheed and Klein benefitted from high amounts of resource revenue (see Figure 3 in Chapter 1) compared to Getty. Lougheed and Klein had a higher reliance on resource revenue than Getty simply because they could.

commodity prices (Ryan 2013). This undermines both the ability to save this depleting form of natural capital and the ability of the government to budget for the medium term given the wildly volatile revenue. What is commonly referred to as the "resource revenue rollercoaster" – the rapid revenue fluctuations resulting from this dependence on revenue from a volatile commodity – is a problem that has been central to Alberta political debates from Getty onward. Yet this problem is the result of an *intentional and enduring* fiscal policy decision to make and keep the budget reliant on this volatile non-renewable resource revenue. This reliance on resource revenue is a policy legacy that began under Premier Ernest Manning in the 1950s, was expanded under Premier Lougheed, and entrenched by Premier Klein (Salomons and Béland 2020). One solution to this problem is to remove (most if not all) the resource revenue out of the operating budget (Tombe 2022; L. S. Wilson 2002).

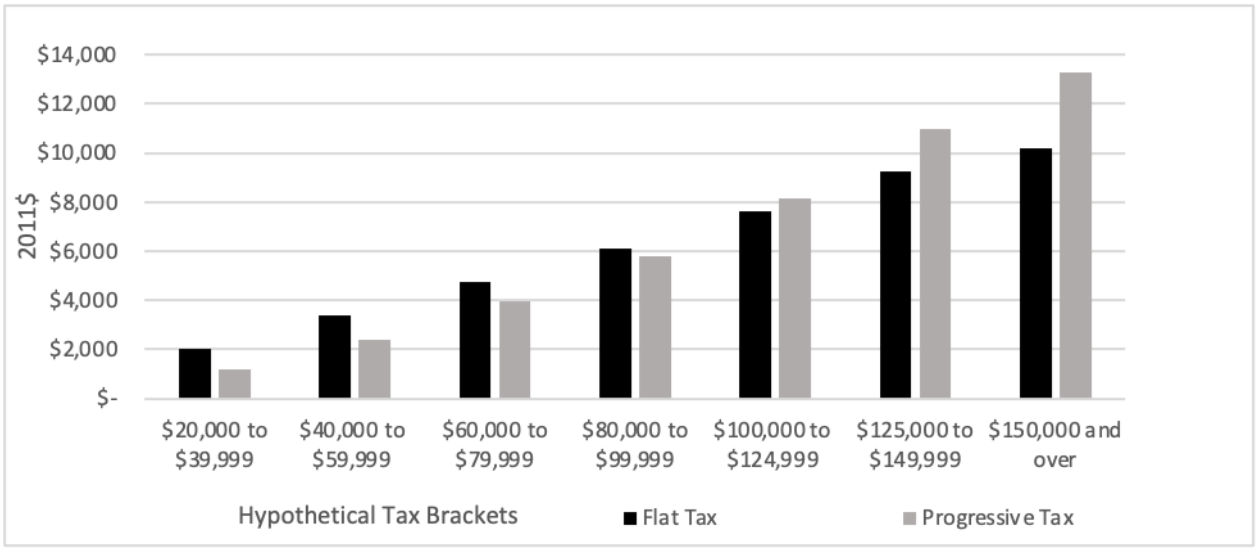

Figure 29: Distribution of non-renewable resource revenue funded tax break by hypothetical tax brackets for 2006.

Since Alberta's resource wealth is distributed through the tax system, it benefits *taxpayers* rather than *citizens*. To begin, this mechanism distributes wealth to a much narrower population base. As Figure 29 highlights, the per-taxpayer benefit is much larger than a per-

capita distribution since children and low-income earners already do not pay taxes and so do not benefit from a resource revenue funded tax cut. Based on available tax filer data, the average benefit (from 1982-2009) is approximately $4,600 for each taxpayer in 2015 dollars (compared to the $2,400/$3,300 tax break of Getty/Klein on a per-capita basis).

Next, as taxes are based on income, the higher income earners receive a greater tax break than those who are barely making enough to pay taxes in the first place, an issue noted but McMillan and Norrie over forty years ago (McMillan and Norrie 1980, 216). Granted, Alberta does have a much higher basic personal exemption than other provinces, and low-income earners receive the lion's share of the social services funded by government revenue sources. However, the difference between the tax break for the top 10% and the social services received by low-income earners is significant.

Moreover, progressive taxation rates exacerbate the inequitable distribution of resource wealth through the tax system. Based on calculations[77] showing the hypothetical[78] tax break that each tax bracket receives (Figure 29), we see how a progressive tax system can increase the unequal distribution of resource revenue when compared to a flat tax system as higher income earners taxed at a higher rate enjoy a greater benefit when using resource revenue to provide a

[77] See Appendix 5-A for details.

[78] It is hypothetical for two reasons. First, for simplicity's sake I am sticking with a single tax system throughout the entire period rather than digging into actual personal income tax data based on existing tax rates. While such calculations are perhaps warranted, I wish to illustrate the inequitable distribution of the system rather than calculate the actual dollar amount for each citizen. Second, it is hypothetical because I am assuming the distribution occurs *solely* on the income tax side of fiscal policy. This is a simplistic assumption. This resource revenue gap could arguably be filling the revenue hole from a sales tax which would have different distributional consequences. Moreover, one could argue that this resource revenue is simply inflating spending. These are all normative questions that frequently occur in fiscal policy and the answer to how to eliminate a deficit will have numerous responses based on an administration's values and ideological proclivities.

tax break across the board. While the one-off "Ralph Bucks" of $400 back in 2006 (to be discussed below) receive a lot of criticism for their short-sightedness, those funds were distributed much more equitably than funds distributed through the tax system. It is to that system that we now turn our attention.

Just as the tax system operates as a de facto dividend system by off-setting taxes required for government services with resource revenue, there is also an argument to be made that this also occurs through foregone revenue that could otherwise be collected by the government, most notably in form of an absent value-added consumer tax (PST) (Ascah 2022; Salomons and Béland 2020). This revenue could have potentially gone to investments with intergenerational benefit and used to offset some of the revenue volatility the Alberta government continually struggles with. However, as this dissertation is focused on what was collected, saved, and distributed, I will set aside this hypothetical discussion for the conclusion.

5.3 Alberta Resource Rebate

When Alberta was officially declared debt free in 2004, the Klein government issued a survey entitled "It's Your Future" to Albertans asking for their input into what the government's priorities should be when handling future surpluses (Government of Alberta 2004). The survey asked respondents to prioritize different issues such as health care, education, reducing taxes, investing in infrastructure, protecting the environment, diversifying the economy and so on. It also included a second question with three options of what to do with Alberta's "Windfall money". The three options were:

1. Provide a refund to every Albertan
2. Save the money and invest in the Heritage Fund
3. Make long-term investments in priority areas (identified by previous question)

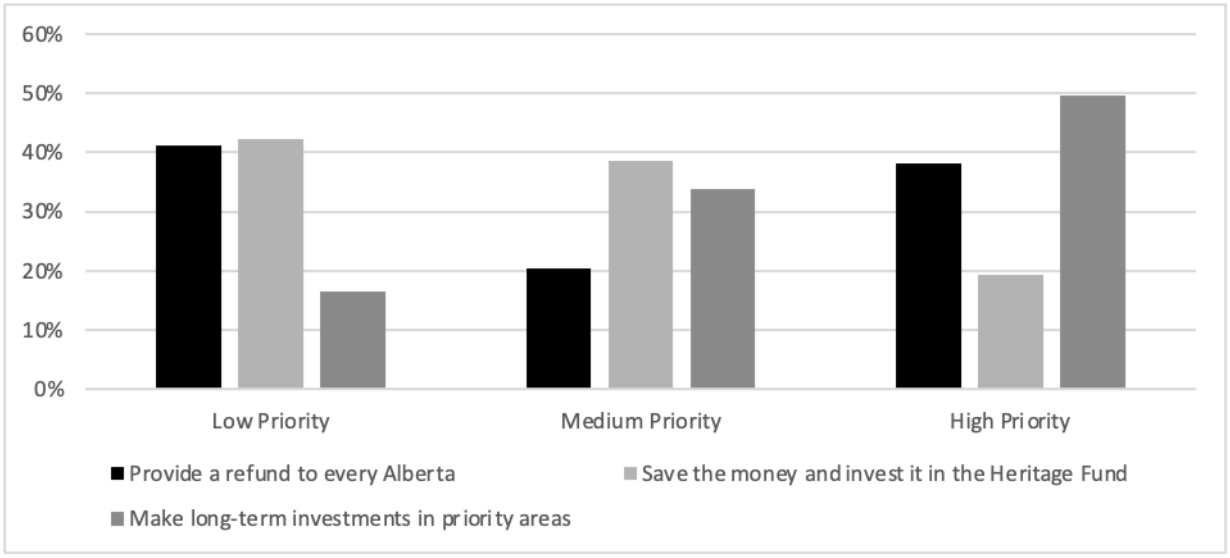

Figure 30: It's Your Future survey. Source: Government of Alberta (2004)

The survey results showed a strong preference for prioritizing health care and education, while the second question received mixed results but a stronger preference for the third option (Figure 30).

In response, Premier Klein announced in an open letter that the government would do all three (R. Klein 2004). Investments in health, education, and infrastructure were increased, additional deposits were made to the Heritage Fund between 2005/06 – 2007/08 (as discussed in Chapter 4), and finally $1.4 billion was allocated to provide every Albertan via a cheque for four hundred dollars. Officially this would be named the Alberta Resource Rebate (ARR), but colloquially it became known as “prosperity bonus” cheques (e.g., Harding 2005) or “Ralph Bucks” (e.g., Black 2020).

The ARR received mixed reviews. Many individuals appreciated the unexpected cash bonus, while, not surprisingly, critics of the government, including official opposition Liberal leader Kevin Taft, felt this was an irresponsible use of government funds. Nevertheless, a media analysis conducted by the government concerning the cheque mail out from January 23, 2006, to February 10, 2006, largely found neutral-to-positive coverage of the cheques and most concerns

having to do with eligibility criteria or logistics. For example, NDP leader Ray Martin expressed concern that the cheques weren't dispersed evenly across the province: "If one part of the province is getting [the cheque] ahead of the other part of the province, well, that's unfair".[79]

In hindsight, while the "prosperity bonus" cheques represented a contrast between the approach of Premier Lougheed and that of Premier Klein (Fawcett 2016; Gibbins and Roach 2006; Korajczk 2009), a few points are worth highlighting from an intergenerational perspective. First, when compared to the existing distribution of resource wealth through the tax system, the ARR was distributed much more equitably. As has been shown above, and argued previously (McMillan and Norrie 1980, 214), the distribution of resource wealth through the tax system overwhelmingly benefits higher income earners more than low-income earners. The ARR, while problematic, at least distributed an equal amount to every eligible citizen.

Moreover, despite criticisms that the ARR was short-sighted (Nelson 2019), dividends are a legitimate form of intergenerational wealth transfer. Dividends are a distribution mechanism that operates as a private intergenerational transfer that implicitly conceptualizes future generations as future descendants and distributes the resource wealth accordingly. However, for this policy to operate with maximum effectiveness for future generations it needs to be a sustained policy over time, as is the case with Alaska (Warrack and Keddie 2002). With a sustained, consistent, and reliable dividend program, individual citizens can incorporate that money into their overall long-term savings plans which would allow that money to have the maximum benefit for future generations (e.g., recipients of inheritance). Thus, it is the fact that the ARR was a single and decidedly small dividend to Albertans that made this program short-

[79] Media Analysis: Alberta Resource Rebate Mail-out. January 23 to February 10, 2006. FOIP: 2016-G-0120

sighted, not the decision to distribute money in this fashion per se. Four hundred dollars would easily get swallowed up in the day-to-day finances of most Albertan households and, with a few exceptions, would unlikely end up as part of any form of long-term savings for individuals.

Unfortunately, the ARR, or any dividend system for that matter, is unlikely to distribute resource wealth to future generations equally based on socioeconomic status. For a dividend to become an intergenerational wealth transfer for future descendants, it or at least a portion thereof must be saved or invested by the recipient so that it can be transferred, either immediately or through inheritance, to the next generation. The arrival of an unexpected payment of money is more likely to be spent on immediate needs for low-income people and more likely to be saved by higher income individuals who do not require the additional funds. Thus, there is an issue with this and other private forms of intergenerational wealth transfer: namely, that while the aggregate amount of wealth transferred between generations via public or private intergenerational wealth transfer mechanisms could be similar, the effect of private mechanisms is much more likely to increase or exacerbate inequality within a jurisdiction. However, this requires further investigation to confirm.

5.4 Investing

The final mechanism we will examine in the distribution of resource wealth intergenerationally is investing. Viewed intergenerationally, government investment takes the natural capital (natural resources) that has been converted into financial capital (money) and converts it once more into physical (e.g., infrastructure) or human capital (e.g., education) that pays economic and social dividends well into the future. While both are important, physical capital primarily benefits future residents as it cannot easily be moved, while investments in

human capital benefit future descendants insofar as one can take one's education with them anywhere.

Capital or infrastructure spending is an area of government activity that naturally lends itself to a long-term perspective. Investments in physical infrastructure are critical for economic growth, amortized over a long period of time, and accrue benefits well into the future. Conversely, a failure to maintain investment in infrastructure creates 'infrastructure deficits' which defers costs to future generations. Roads, telecommunications, and electricity grids are critical for economic activity. Nevertheless, these investments suffer from diminishing returns.

Examples of investment in human capital can include all levels of education and other forms of non-educational investments such as quality childcare, paid leave, and other investments in caregiving that improve quality of life and human development. For this dissertation, we will focus on education as a proxy human capital since investments in education are one of the fundamental determinants of future economic growth (Barro 1998, 2001). In fact, studies of the Resource Curse – a phenomenon whereby resource abundant jurisdictions have poorer than average economic growth (Auty 1993, 2001; Humphreys, Sachs, and Stiglitz 2007; Sachs and Warner 1995, 1999, 2001; Brenda Shaffer and Ziyadov 2011) – suggest that one partial explanation is that countries neglect investing in developing human capital through education (Gylfason 2001). This can occur intentionally as jurisdictions reaping windfall revenues become complacent about strategically developing human capital, or unintentionally, as

the economic draw of high-pay, low-skill labour undermines the incentive for individuals to invest in their own education.[80]

The fact that investments in physical and human capital pay intergenerational benefits is easy to understand. Digging into the data to parse out the exact intergenerational benefits is much more challenging, especially because of overlapping generations. We will examine physical and human capital investments from a number of angles. For physical capital, we will first look at spending numbers overall from Premiers Lougheed to Klein and the effects of their investment patterns. Next, we will look at the physical capital spending and compared to other major provinces.[81] While not a complete picture, it will allow us to unpack some of the challenges of analysing physical capital investments intergenerationally. We will then turn to analysis of human capital investments.

5.4.1 Physical Capital Investments over time

Infrastructure spending needs to be analyzed on a per-unit basis to allow for proper comparisons with other jurisdictions. Typically, there are two ways of looking at infrastructure spending: per-capita or per GDP. The per-capita approach is appropriate insofar as more people living in a jurisdiction necessarily results in more overall spending on highways, hospitals,

[80] This is an explanation that has been floated for the fact that Alberta has the highest high school drop out rates in the country (Taylor-Vaisey 2008). However, a study examining the oil boom of the 1970s in Alberta suggests such booms impact the timing of schooling rather than the overall accumulation of human capital (Emery, Ferrer, and Green 2012).

[81] When just examining spending over time, I use per-capita data. When comparing to other provinces I use both per-capita and per GDP data to illustrate the complexity of analyzing Alberta's capital spending. complexity that is well captured by a study by McMillan (2019) and will be discussed in the next section.

schools. However, infrastructure also has a productivity function: better infrastructure leads to a more productive economy.

This recently played out in Alberta politics with real impacts. After the election of the New Democratic Party in 2015, the Alberta government released a report on capital spending alongside its October budget. The report, written by former Bank of Canada governor David Dodge (hereafter the Dodge report), argued that when compared to the average investment or capital stock of the other non-maritime provinces (ON, QC, BC, MB, SK), Alberta lagged both in terms of investment and overall capital stock (Dodge 2015, 13–15). However, the Dodge report made this comparison as a percentage of GDP. In response, University of Alberta economist Mel McMillan (2019) argued that Alberta's spending should be based on a per-capita basis rather than GDP, as Alberta has a higher GDP due to the more productive nature of Alberta's energy sector and higher wages overall. He asked, "Do more productive workers need proportionately more public infrastructure?" (McMillan 2019, 15). This argument highlights he unique nature of the Alberta economy when compared within Canada.

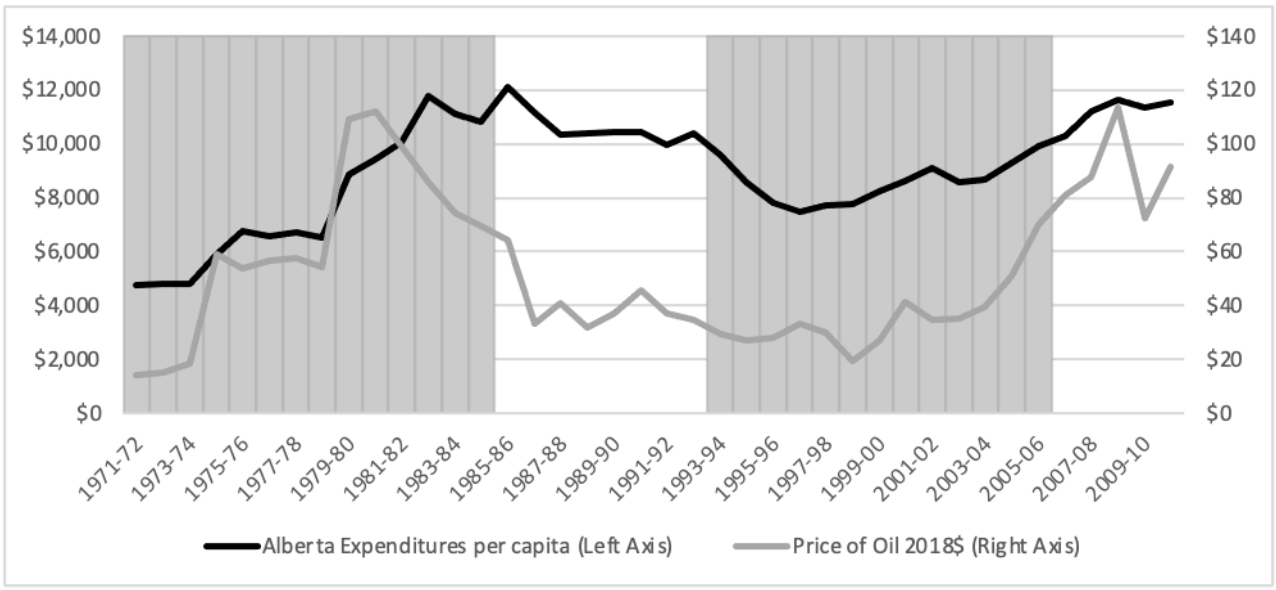

Figure 31: Alberta per-capita expenditures. Source: Kneebone and Wilkins (2016).

There is a stark difference between overall spending during the Lougheed, Getty, and Klein eras. Per-capita spending increased dramatically during the Lougheed era, remained flat during the Getty era, dropped significantly during the first few years of the Klein era, and then began a steady climb afterwards (Figure 31). This trend tracks along with the price of oil during this period, although the increase in spending during the Klein era is much less dramatic than during the Lougheed era.

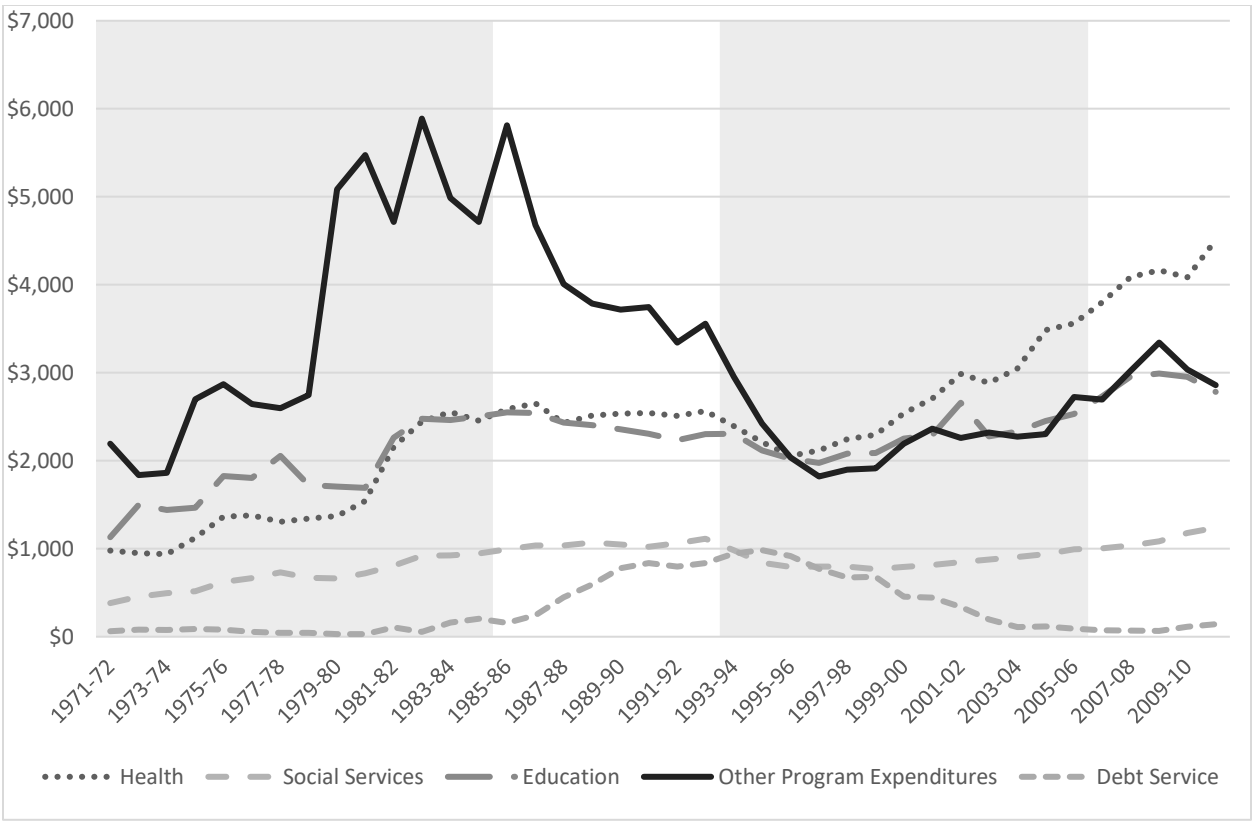

Figure 32: Alberta per-capita spending (2017$). Source: Ron Kneebone Provincial Fiscal Data; StatsCan Table: 17-10-0005-01 (formerly CANSIM 051-0001).

What most sets the Lougheed era apart from the others is the significant amount of spending in "Other Program Expenditures" (Figure 32).[82] These expenditures include numerous economic development initiatives, referred to by many as Lougheed's efforts at "Province Building" (Bojechko 1982; McMillan and Norrie 1980; Pratt 1977; Stevenson 1980; Young, Faucher, and Blais 1984). These initiatives were a conscious effort to "promote economic growth and the development of a more diversified industrial base" (McMillan and Norrie 1980,

[82] As detailed by Kneebone and Wilkins (2016, 4), the "Other" expenditures are "intended to represent the net balance (revenue-expenditure) of all government funds other than the current account…in our date, the annual deficit is the current account deficit only, the difference between what we report as total expenditure and what we report as total revenue." Looking at budget documents during the era of significant "other expenditures" the amounts other than health, education and social services include "Resource Conservation and Economic/Industrial Development," "Transportation and Utilities," and "Regional planning and development" (budget line items beginning in 1983-84 budget).

213) and included paving rural roads across Alberta, and investments in medical science, petrochemicals, and agricultural processing (Tupper 2004).

Lougheed laid out this plan in a speech to the Calgary Chamber of Commerce on September 6, 1974, entitled "The Alberta Industrial Strategy"[83]. The intent of the strategy was:

- To maintain continued pressure for fair market value for the sale of [Alberta's] natural resources.
- To use a portion of government revenue as capital funds to encourage diversification and decentralization;
- To insist that our resources are – as much as practical – processed in Alberta;
- To recognize that transportation is the key to diversification for this land-locked province;[84]
- To take advantage of every opportunity to process our agricultural products in Alberta prior to shipment;
- To capitalize upon our tourist potential;[85]
- To help offset our transportation costs obstacles [sic] by holding energy costs down;
- To establish taxation policies that will encourage local businesses;
- To maintain a climate of welcoming outside investment;
- To emphasize [skill upgrading] in government programs;
- To encourage research to give local groups competitive advantage and thus develop specialty industry in the province;
- To decentralize government operations;
- And to assure that our environmental standards are understood, consistent, and fair.

Ten years later, when oil prices begin to decline, questions about the success of these efforts began to arise. Numerous stories in the Calgary Herald appeared with titles such as "Province concedes failure of its diversification dream" (March 11, 1983), "Economic Diversification remains elusive" (Sept 20, 1983), "Lougheed finally accepts diversification is a myth" (Oct 7, 1983). Diversification efforts, while laudable from a long-term perspective, are often beyond the

[83] Industrial Strategy Speech PR1985.0401/1646 Calgary Chamber of Commerce: Speech re: Industrial Strategy, September 6 PR2207 1974Open Box 147; for a collection of other statements made by Premier Lougheed on Economic Diversification see PR1995.445/25 – Economic Diversification (Getty Files)
[84] The speech specifically refers to the purchase of Pacific Western Airlines a month prior as part of this effort to create a transportation corridor to the north, in anticipation of increased resource development (Zdeb 2015).
[85] For example, the creation of the Peter Lougheed Provincial Park with funds from the Heritage Fund.

control of governments. As Minister of International Trade Horst Schmid said in a letter to the Edmonton Journal that "these [diversification] successes were overshadowed by the tremendous growth in the oil and gas sector experienced during the 70s".[86] Premier Lougheed also referred to these efforts as fighting an "uphill battle" (Peterson 1983). The diversification efforts of the Alberta government, while significant, were unable to compete with the capital flowing into the oil and gas sector from other investment sources.

Lougheed's "Province Building" efforts, while ultimately less successful than hoped, were an attempt to develop an economy that worked for future generations who could no longer depend upon non-renewable resources. With the advent of *in-situ* extraction processes in the late 1990s, the depletion timeline assumptions under which Lougheed was operating in the 1970s ultimately proved incorrect. Nevertheless, actions of the Lougheed government suggest intentionality on behalf of future generations, albeit implicitly working to benefit future residents primarily.

When Klein came into office, his government aimed to eliminate the deficit and repay the debt that these diversification efforts had incurred. The per-capita spending shown in Figure 32 above highlights the drop in spending associated with the Klein Revolution. After a period of relatively even per-capita spending up to 1992/93, spending dropped from nearly $9,500 per-capita to approximately $7,500 per-capita in 1996/97. These cuts were often framed in intergenerational terms. The argument was that the financial debt that would be accruing to the province was a burden left for future grandchildren and had to be reined in. In this case, the

[86] Alberta Provincial Archives, Accession: PR1995.445/25 – Economic Diversification (Getty Files) – Letter from the Hon. Horst Schmid to the editors of the Edmonton Journal, February 18, 1983.

province was borrowing from future generations (residents) in order to pay for day-to-day expenses.[87]

Comparing Alberta's spending to other provinces is where the difference between per-capita spending and per GDP spending become most stark.

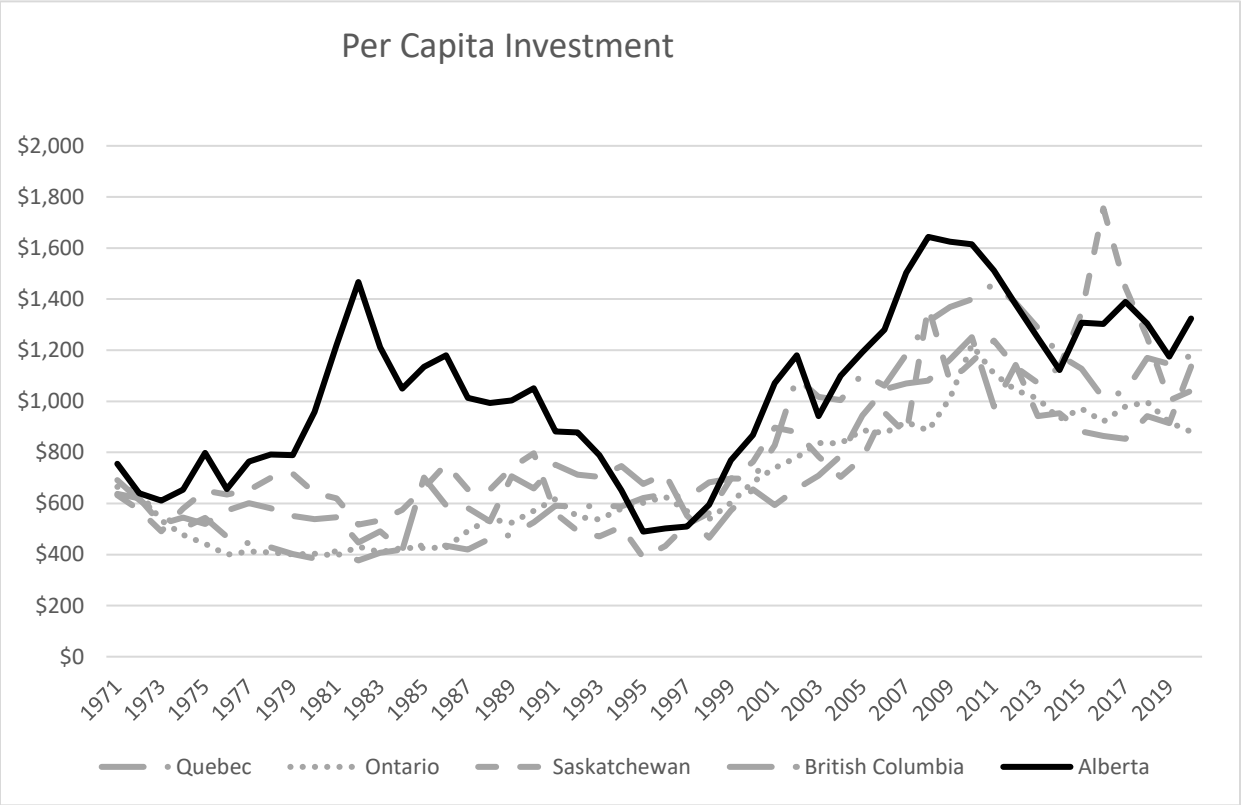

Figure 33: Per-capita capital investment (2012 chained dollars). StatsCan Table: 36-10-0096-01 (formerly CANSIM 031-0005), Table: 17-10-0005-01 (formerly CANSIM 051-0001).

[87] In intergenerational terms, debt is often less a concern as, historically, subsequent generations have, for the most part, been materially better off than the preceding generations. As a perpetual entity it is not debt per se that is the concern, but the ability to service the debt. Just as a household can reasonably incur debt to accelerate the purchase of major items (house), so to can a state. The difference is the state can keep maintaining certain debt levels as there is no end date by which debt would need to be paid off (e.g., compared to retirement in a household as an example). Debt for the state is thus an intergenerational transfer in that it accelerates spending by borrowing from future generations. If that is invested in things that have a return greater than the debt servicing costs, future generations are better off for it. That said, current societal anxiety and generational conflicts between boomers and millennials stems in part from a belief that immediate future generations may not be materially better off, whether this is due to the potential costs and impacts of climate change, housing affordability, or numerous other issues. These concerns are so prevalent that an advocacy organization was created to give voice to those concerns (www.gensqueeze.ca).

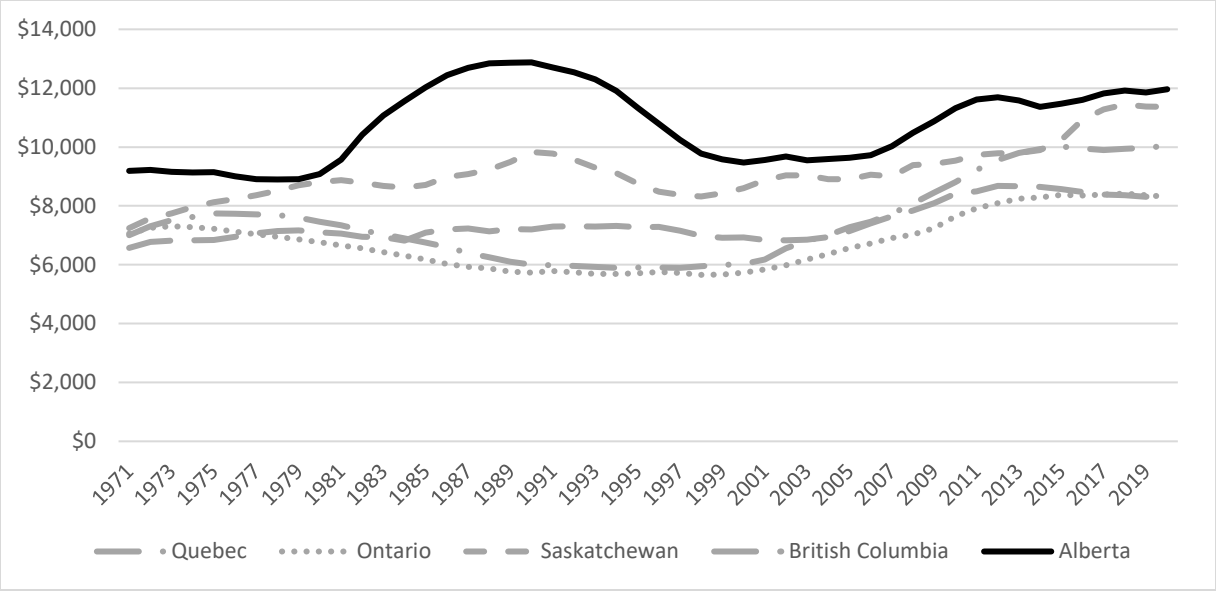

Figure 34: Per-capita capital stock (2012 chained dollars). StatsCan Table: 36-10-0096-01 (formerly CANSIM 031-0005), Table: 17-10-0005-01 (formerly CANSIM 051-0001).

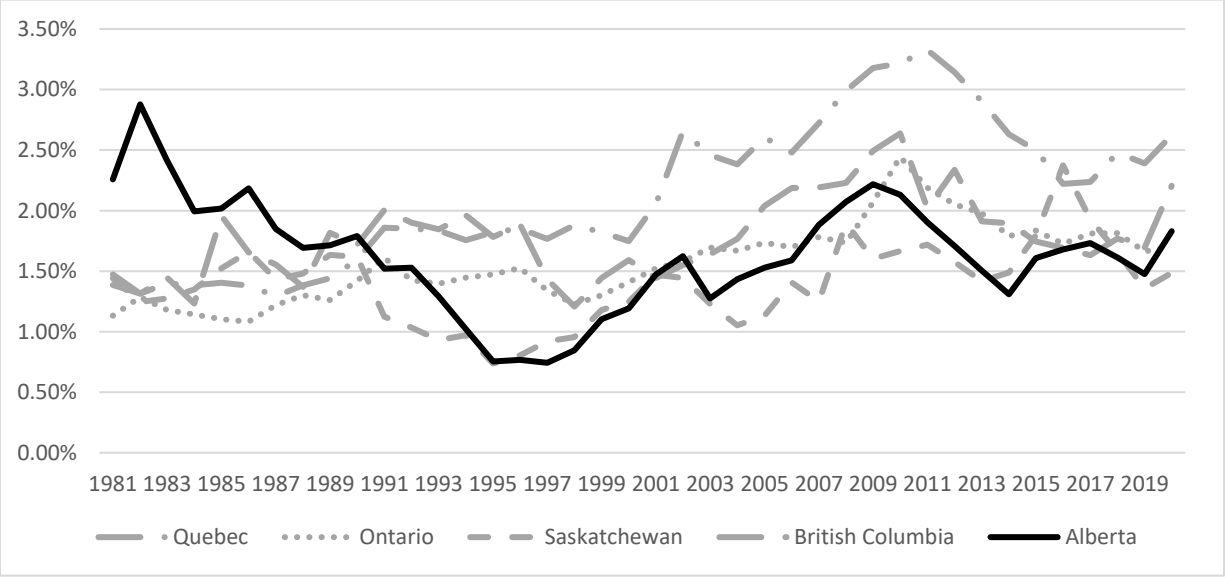

Figure 35: Per GDP capital investment (2012 chained dollars). StatsCan Table: 36-10-0222-01 (formerly CANSIM 384-0038), Table: 17-10-0005-01 (formerly CANSIM 051-0001).

Looking first at capital spending per-capita, we see the volatility of spending during this forty-year period (Figure 33). A dramatic increase in capital spending towards the end of the Lougheed era (one that was roughly maintained during the Getty era) dipped to its lowest point in 1995 only to dramatically increase yet again. When compared to the other four largest

provinces, the volatility of Alberta's spending is immediately apparent. We see the delayed legacy of this dramatic increase in spending towards the end of Lougheed's tenure when we examine net capital stock, which is the total stock of capital assets in the province (Figure 34). The value of capital stock ballooned, peaking in 1990 (towards the end of Getty's tenure) before beginning a dramatic fall, all while maintaining a high level overall when compared to the four other largest provinces in Canada.

Alberta's capital investment per GDP (Figure 35) shows a similar spike. However, when compared to the other four major provinces, instead of surpassing the other provinces, as Alberta does on a per-capita basis, Alberta's capital investments on a per GDP basis sit near the bottom. This comparison illustrates the record-breaking economic growth experienced in Alberta over this period. From 1997 – the moment when capital spending hits its lowest level whether measured on a per-capita basis (Figure 33) or on a per GDP (Figure 35) – to 2008 (the Great Recession) the Alberta economy experienced growth much greater than the increase in its population. During this period, Alberta's economy grew 42% while its population only grew 10%. This significant growth in GDP is due to the lucrative nature of the oil and gas industry during this period, when oil eventually (if briefly) reached $150 per barrel. Thus, while capital spending over this time increased by over 300% (from 1.4B to 5.9B), it varies dramatically depending on whether one is comparing it to population or GDP.

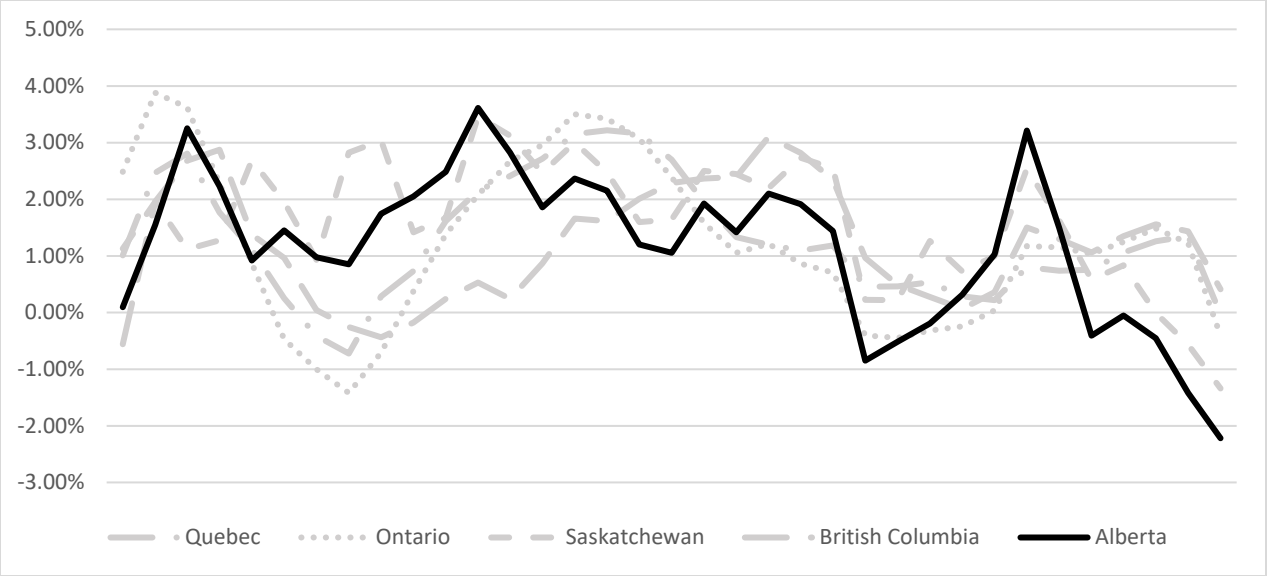

Figure 36: Rolling 5-year average of the % change of GDP per-capita.

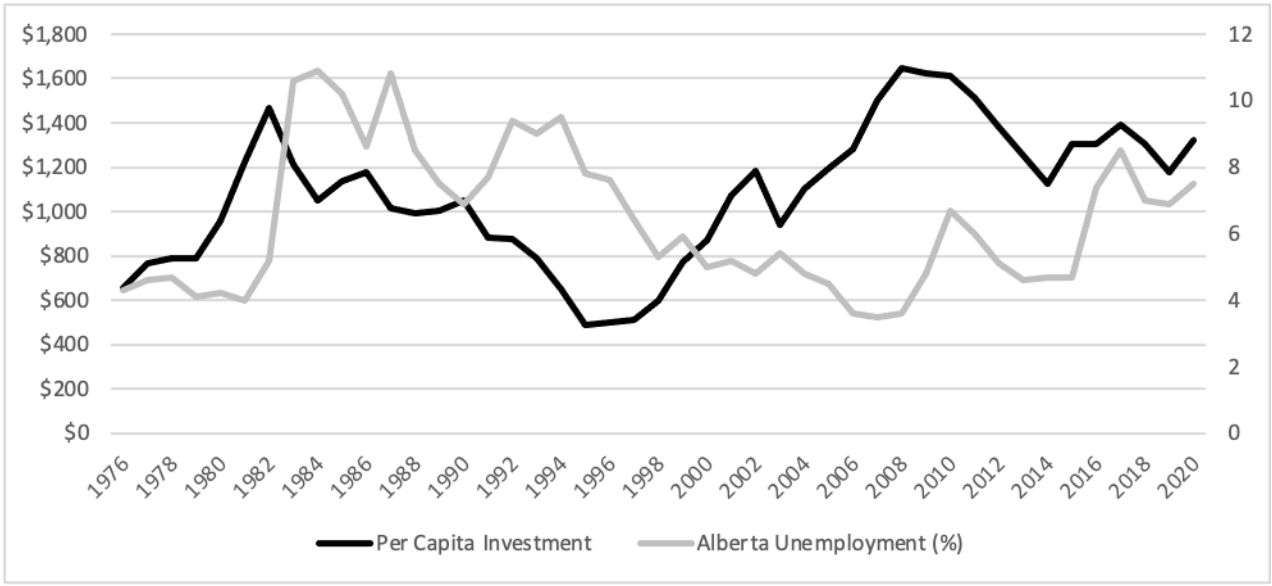

Figure 37: Per-capita capital investment and unemployment rate.

From a medium- and long- term perspective, capital investments can be used as a tool of economic stabilization. If you want to maximize the effectiveness and efficiency of capital spending dollars on long-term investments, consistent or countercyclical spending is critical. Increased investing in capital projects and infrastructure during recessions, as was done during the Great Recession in 2008 (OECD 2009), helps encourage additional economic activity when investment in the private sector may be contracting (Buchheim and Watzinger 2017). Moreover,

the government gets the bonus of capitalizing on cheaper labour and costs during recessions, as opposed to trying to invest in capital projects when both may be higher. In Alberta we see not only uneven and inconsistent spending over time (Figure 36) but spending that is in fact procyclical under Klein (Figure 37).

Comparing available data on per-capita capital investment with the unemployment rate (Figure 37, see also McMillan 2019, fig. 16), we see some differences in approach between Premiers. For the Lougheed government, capital spending did increase dramatically as the early 1980s recession hit. This was part of a broader effort to respond to the crash in oil prices following the second oil shock which also included reducing payments to the Heritage Fund from 30% to 15%. As unemployment remained at all-time highs, capital spending declined significantly between 1992 and 1995. Then, when unemployment dropped, capital investment ramped up to all-time highs. During this period of the early 2000s, capital investment was competing with other economic investment, particularly in the oil sands, as Alberta was experiencing a dramatic labour shortage that resulted in higher wages and cost inflation (Cross and Bowlby 2006). Capital spending only dropped after the 2008 Great Recession. Rather than pursuing counter-cyclical capital spending, which would suggest more long-term foresight and strategic thinking, the Klein government allocated capital spending in a procyclical fashion, likely exacerbating the boom/bust tendencies of the Alberta economy.

Moreover, while capital spending has been uneven, only during the Lougheed years did it and the resulting capital stock significantly surpass that of comparable provinces. Given the discourse and rationales provided by the government at the time about the need for economic diversification and ‘Province Building’, there is enough evidence to suggest that these investments were motivated, at least in part, by a concern for future generations. However, the

success of those efforts is another matter. Despite the capital investment and other 'Province Building' or diversification initiatives, the flows of capital into the oil and gas sector simply drowned out any efforts by the government. The decades that followed marked a dramatic ideological shift away from government interventionist policies, one that resulted in a return to similar investment and capital stock levels in comparison to other provinces.

5.4.2 Investing in Human Capital

As with investments in physical capital, governments can also distribute resource revenue intergenerationally by investing in human capital. Investments in education are one of the fundamental determinants of future economic growth (Barro 1998, 2001). They increase individual income levels but also overall economic productivity, which in turn creates more wealth for future generations (Card 1999; Rogers 2001). Moreover, studies show that increased levels of educational attainment for parents results in enduring improvements of socio-economic conditions for future generations, along a whole range of measures beyond income and productivity (Kaushal 2014b; Lindahl et al. 2015). That said, the concept of human capital is complex and dynamic, and many social, economic, and political contextual factors contribute to socio-economic outcomes. One need only look at the income gaps along gendered or racial lines to understand this. Despite this complexity, for the narrow purposes of this dissertation we will be looking specifically at educational spending as a proxy for human capital investment, while recognizing the limitations of such an approach. This choice to focus on educational spending, as opposed to health care (particularly preventative health care) or social service investments that might also have long-term economic and other benefits was made, in part, because it is easier to make the conceptual link between investments in education and resulting economic benefits (increased productivity and innovation, increased earning power, etc.) than it is for other

investments. This analysis will provide us with a cursory overview of one of the many means by which governments can provide intergenerational benefits from resource wealth.[88]

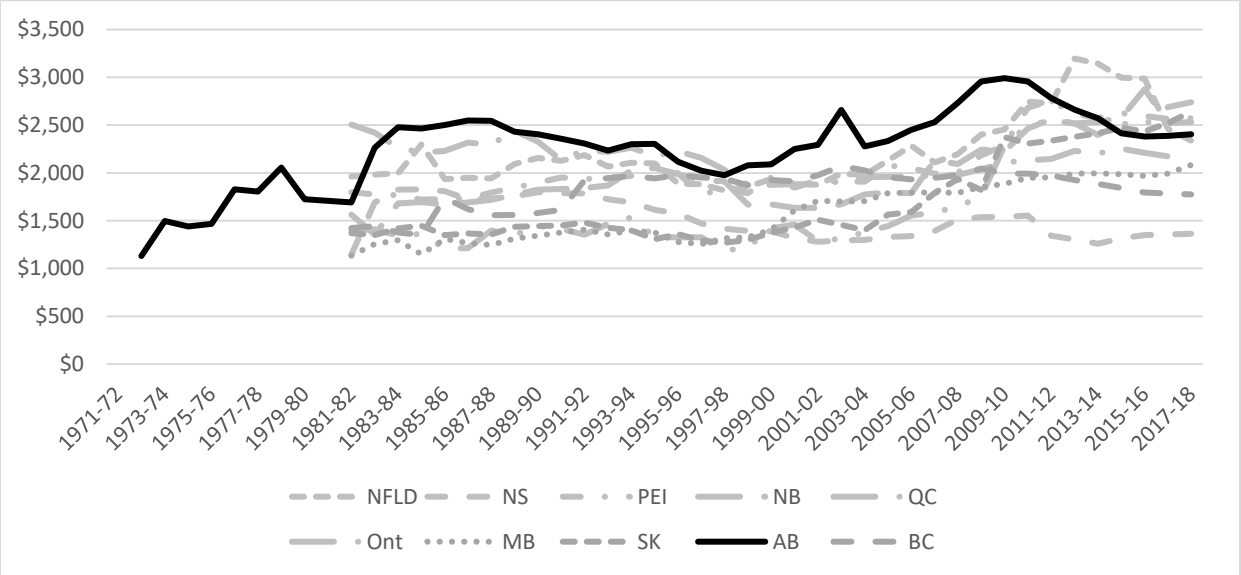

Figure 38: Real Per-capita Spending – Education 2017$ Source: Kneebone and Wilkins (2018).

In Alberta, there was a significant increase in education spending during the 1970s and then an even more dramatic one in the early 1980s from $1,690 to almost $2,500 per-capita between the 1981/82 and 1983/84 fiscal years (Figure 38). This increase in spending was due to negotiated wage increases, as well as a significant increase in capital spending on schools, colleges, and universities (L. Hyndman 1981). Spending gradually declined on a per-capita basis from a high of approximately $2,550 in 1986/87 to a low of $1,940 in 1997/98, the point at which Premier Klein had balanced the budget. From there, education spending steadily increased. It peaked just under $3,000 per-capita in 2009/10, several years after Premier Klein had retired. The spike in spending in 2001/02 was again due to a one-time influx of capital

[88] More dedicated and sustained research is undoubtedly warranted.

spending on schools and hospitals following a dramatic increase in resource revenue the year prior.

Compared to the other provinces, Alberta consistently spent the most on education on a per-capita basis following the 1980/81 ramp up, except for a brief period between 1995 and 1998 when Quebec overtook Alberta.[89] This suggests a consistent prioritization of educational investment for both Lougheed and Klein. Despite a short blip during the first half of Klein's tenure, the investment of resource revenue into education remained a priority, especially during the Klein era post-1997 when Alberta educational spending dramatically outpaced all the other provinces.

This is also illustrated by the fact that during the Klein Revolution, education was shielded from some of the more dramatic spending cuts.[90] When we look at the total change in spending between 1992-93 fiscal year and 1996-97 fiscal year, education spending only decreased 4.6% as opposed to 13.8% for health, 24.6% for social services, and a whopping 44.1% for other program expenditures (Table 7).

However, the relative increase in educational wages compared to other provinces must be placed within the context of other fiscal decisions made by the Alberta government over this period. First, the wage increases witnessed over the 2000s for both university and primary/secondary educators is partly the result of the decision to not save resource revenue during times of plenty. This made it politically difficult for the Alberta government to restrict

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[89] The data available from Kneebone and Wilkins (2018) does not have the other provinces' data prior to 1980. However, based on the range in of spending levels beginning in 1980, Alberta appears to be safely in the middle of that range until the dramatic increase in education spending between 1980/81 – 1982/83

[90] Some of the changes and reforms to education weren't just about finances, but how education was structured, and delivered. For a closer examination of the specific reforms in education during this time see Taylor, Shultz, and Wishart Leard (2005) and Taylor (2001).

wage growth as other provinces did during this period due to the significant budget surpluses that resulted from its increasingly substantial royalty revenues.

Moreover, wage inflation for teachers during this period (but also health care providers and provincial government employees, see Boessenkool 2010; Boessenkool and Eisen 2012; Palacios et al. 2018) served as an additional resource wealth transfer mechanism. Wage inflation during the 2000s was experienced throughout the Alberta economy, particularly in the trades associated with the oil sands but also within other areas such as the service sector. Employers like Tim Hortons or 7-Eleven offered starting wages double the minimum wage, yet still could not find sufficient employees (Brethour 2005). Nikiforuk (2009, 47) notes that during the boom times it would take "forty minutes to order a cup of coffee at Tim Hortons" while a small businessman and entrepreneur remarked that "employers are grateful if a guy shows up. They say 'I've got a good guy. He showed up when he said he would.' That makes me laugh." The accelerated pace of development and high price of oil allowed this wage inflation to occur. As a result, the financial benefits of the high oil prices did not go directly to the profit margins of the oil companies but were more broadly dispersed throughout the Alberta economy.

This same wage inflation in the private sector would translate to the public sector, but due to the collective bargaining of public sector unions these wage increases experienced a ratcheting effect. Public sector employees would gain marginal increases in wages vis-à-vis their provincial counterparts during the boom times and those increases would remain stable in comparison to the private sector during downturns.[91]

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[91] It is important to note that educational spending is not just about wages paid to teachers. Components of the collective bargaining contract such as class size and composition, an issue the BC Teachers Federation won a Supreme Court of Canada decision against the BC Government in 2016 after 15 years of court battles, also impact educational quality and government spending levels (Zussman 2016).

Of course, just spending more on education doesn't necessarily result in the benefits that come from higher educational attainment. For example, when Alberta was dramatically exceeding the per-capita spending of the other provinces, it also had the highest high school dropout rate. This is often attributed to readily available high-pay, low-education jobs in the oil patch (Taylor-Vaisey 2008), although some argue that explanation is too simplistic (Silva and Blasetti 2016).[92] Regardless, the data does show steadily declining high school drop out rates (Statistics Canada 2015), or, conversely, increasing levels of tertiary (post-secondary) educational attainment (Statistics Canada 2022).

Other reports do indicate some consistent positive outcomes for Alberta. The Conference Board of Canada ranked Alberta third behind B.C. and Ontario in a 2014 Provincial and Territorial Ranking report for educational performance (Conference Board of Canada 2014). This ranking is commensurate with Alberta's spending at the local school board level (second overall behind Ontario with B.C. and Newfoundland just behind).

With regards to other educational outcomes, one report that is often cited is the tri-annual *Measuring Up* report published by Statistics Canada in partnership with the OECD for the Programme for International Student Assessment (PISA). The first report, published in 2003, shows Alberta leading the country in educational outcomes in math, reading, and science (Bussière, Cartwright, and Knighton 2003). This suggests that, despite criticisms about cuts to Alberta's educational system during the Klein Revolution, overall investments in Alberta's education system did leave a lasting positive impact.

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[92] Andrew Nikiforuk, for example, notes how high school grads could earn $100,000 at the Muskeg River Mine driving the world's largest dump trucks (Nikiforuk 2009, 24).

As with capital spending, investment in human capital is another flow where, theoretically, one could calculate whether human capital investment was increasing, decreasing, or being maintained. Also, as with physical capital, the number of factors that go into making such a determination are numerous. What we see in Alberta is a consistent approach that invests in education when revenue rollercoaster opportunities presented themselves and those investments were more or less been protected from volatility of Alberta's budget fluctuations necessitated by its over reliance on resource revenue. This has at least been an area where there has been some overall consistency over time.

5.5 Discussion

Throughout this period, the tax system has been the primary mechanism for distributing resource revenue to citizens in Alberta. The Alberta government has artificially low rates of taxation across the board, especially considering the relatively high level of operational expenditures. This includes both personal and corporate income tax rates, but also, and more notably, Alberta is the only province in the country without a sales tax,[93] and this fiscal gap is supplemented with volatile resource revenue. This structure operates as a de facto dividend in the form of foregone taxation and distributes funding indirectly to the taxpayers in Alberta. This approach was one that began with Premier Lougheed, continued with Premier Getty, and was entrenched into Alberta's political culture by being branded the Alberta Advantage by Premier Klein (Salomons and Béland 2020). This fiscal framework made the Alberta budget structurally dependent on volatile non-renewable resource revenue and has plagued Alberta fiscal policy since (Landon and Smith 2010b; Ryan 2013; L. S. Wilson 2002).

[93] This issue will be dealt with in more detail in the conclusion.

The Alberta Resource Rebate was another distribution mechanism that the Alberta government experimented with during a period of high resource revenue. While largely criticized as political pandering, vote-buying, and short-term thinking (Nelson 2019), those criticisms have more to do with the one-off nature of this particular dividend payout instance rather than a dividend payout policy.

Alberta also distributed its resource wealth through investments in physical and human capital. Lougheed invested more on capital on a per-capita basis, particularly during his province building years. These investments were significantly reduced under Klein, as he worked to tackle the deficit and debt. Investments crept up once the debt was paid off and resource revenue increased once again. This suggests investments were less about strategic investment policies and more about the availability of funds.

When looking at education spending, we see a different story. Here investments were increased by the Lougheed government but largely maintained by Klein. They roughly stayed about the Canadian average for much of the period, and the little education outcome evidence available does point to above average results for Alberta students. In contrast to physical capital investments, human capital investments were much more consistent despite the volatility of government revenues over the period.

Given the lion's share of resource revenue is distributed through the tax system, and the significant challenges that fiscal policy creates for Alberta fiscal policy, what explains these decisions? On the political side, appealing to voters was central. The government was able to save some of the revenue in the Heritage Fund in part because it did not place any costs on the electorate. The government was setting aside some of the revenue rather than distributing it all. This means that much (70 per cent) of the resource revenue accruing to the government was

distributed to the current electorate. This allowed the government to increase the quantity and quality of the services the government provided while simultaneously reducing the tax burden. In such a context, it is little wonder the PCs won 69 of 74 seats and received 62.7 per cent of the popular vote in the 1975 election, or why some members of the PCs felt that getting "79 [seats] in '79" (the unofficial campaign slogan) was within their grasp (Zwarun 1979).

Distributing wealth through the tax system also aligns with the political culture of the electorate. Lougheed's promotion of the Heritage Fund aligned and continues to align with all three elements of Alberta's political culture (Wesley 2011, 94). Distribution of resource wealth through the tax system accomplished the same thing.

First, the distribution of resource wealth through the tax system puts resource wealth directly into the hands of individual Albertans, while, as Wesley argues, saving a portion of that appeals to that same individualist sense of fiscal restraint and responsibility. Second, Wesley suggests that the Heritage Fund "promoted a populist sense of community in which the people of the province received the benefits of their collective birthright" (Wesley 2011, 94). In this case, the Alberta Advantage tax regime was established and then entrenched as a kind of collective birthright. The balance of savings and distribution in the Lougheed years thus simultaneously appealed to different aspects of the average Albertan's individualism, populism, and political autonomy. During the Klein years, a similar balance was achieved with savings going into debt repayment rather than into the Heritage Fund.

The desire of the electorate to maintain this birthright were consistent and powerful enough that changes in government would not upset this equilibrium. Granted, Alberta is an unusual case in that it was governed by the same party during this entire period. But, even during the episode that most nearly resulted in a change in government (the 1993 election) the Alberta

Liberals were campaigning on a very similar platform to the PCs; the question was a difference of magnitude (brutal versus massive cuts) rather than approach. This demonstrates just how entrenched this birthright had become within Alberta's political culture (Salomons and Béland 2020).

There are several intergenerational consequences for choosing to distribute resource revenue through the tax system. First, distributing non-renewable resource revenue through the tax system overwhelmingly benefits future descendants over future residents. The resource revenue has been collected and some of it saved, but by distributing the revenue via the tax system, the present generation and their descendants[94] are the primary beneficiaries.

Second, distribution of resource wealth through the tax system also has the potential unintended consequence of exacerbating inequality. A 2012 study by the Parkland Institute showed 87 per cent of earnings in the province goes to the top half of households; the wealthiest 10 per cent of Alberta earners get 28 per cent of after-tax income, while the lowest-earning 10 per cent of earners get only 1.7 per cent; and the top one per cent of Alberta earners have an average income of $675,200 compared to an average of $353,100 for the top one per cent nationally (CBC News 2012; Gibson 2012). To be clear, I am not arguing that the inequality identified in the report is due to this particular resource wealth distribution regime in Alberta. Those inequality statistics are the result of a multitude of factors, including the lucrative nature of the oil and gas sector. However, the way the resulting resource wealth is distributed to the

[94] An analysis comparing the extent to which that revenue flows to future descendants is beyond the scope of this dissertation. However, given the duration it has had its dividend system in place, Alaska would serve as an ideal case to investigate this question.

primary owners of that resource – Albertans – can either exacerbate or alleviate those socioeconomic trends.

The third consequence is that by choosing to distribute resource revenue through taxes the Alberta government remains reliant on a volatile revenue stream. This has consequences when it comes to the ability of the Alberta government to budget for the medium to long term and provide consistent programs and services over time. The self-inflicted lack of revenue certainty impedes the government's ability to respond to both emergent and longer-term policy problems. This problem of resource revenue reliance is the central issue that plagues the Alberta government. Addressing it would be the first step to solving Alberta's fiscal policy woes.

CHAPTER 6: CONCLUSION

6.1 Introduction

This dissertation has its genesis in the contrasting reputations of Premiers Lougheed and Klein when it comes to their approach to the governance of resource revenue and the consequences thereof for both present and future generations. This dissertation also made a deliberate effort to differentiate between future descendants and future residents. This allows us to examine the implicit assumptions contained within different policy choices impacting future generations. Most importantly, this dissertation asked several separate but connected questions:

1. What did Alberta do regarding resource wealth governance from 1976 to 2006?
2. What explains why Alberta did what it did?
3. What were the consequences of those choices?
4. What lessons can we learn?

While each chapter examined these questions with regards to the collection, saving, and distribution of resource wealth, this chapter delves into some overarching themes in order to highlight both similarities and differences between Premiers Lougheed and Klein.

6.2 The "What"

6.2.1 Collection

With rent or revenue collection we see both commonalities and differences. Both premiers saw the oil and gas sector as an important economic engine for the province and sought to encourage, or at least not too greatly upset, the status quo. Lougheed deviated from this approach slightly after the first oil shock, when oil prices hit unprecedented levels. Lougheed's

government was able to move in and amend the royalty regime that accounted for the higher global oil prices and additional rent that subsequently became available. The government accomplished this by instituting additional royalties for old and new vintages of oil, ones based on their date of discovery. This was possible given the clear demarcation in prices that occurred after the first oil shock. Wells that began prior to April 1, 1974, operated on fundamentally different price forecasts, and so any price above those assumptions was pure rent.

In contrast, rather than working to extract additional rent from a lucrative industry, Klein saw his challenge as one of establishing a rent regime that would provide more certainty and consistency for it. The generic royalty regime's creation was a progression in Alberta's resource wealth governance from individual project-by-project agreements to a consistent and reliable royalty regime as the oil sands industry matured.

Two issues here stand out. First, the overall rent collection levels did err on the side of generosity toward the industry, but the primary concern of the government at the time was not to squeeze out the maximum amount of rent on a per barrel basis but rather to encourage expansion in the oil sands. By extension, this increased revenue over the longer term because it led to more barrels being produced. Second, the rent regime of the Klein government became more generous over time, as corporate income taxes were included in the calculation of government take when the generic royalty regime was created. As a result, the reduction of corporate income taxes several years later meant more rent was left in the hands of the industry — money that could have been captured by the government had royalty rates been adjusted to offset the cuts to corporate income taxes for oil sands companies. The inclusion of corporate income taxes as part

of the initial rent collection regime made the rent regime more generous than it initially appeared.

6.2.2 Savings

When it comes to the saving of resource revenue, the reputation of each premier doesn't line up with the facts. Lougheed receives the lion's share of the praise for establishing the Heritage Fund, but Klein saved a similar amount of resource revenue by paying off the debt and creating the Sustainability Fund. Both Premiers saved similar amounts during their respective tenures, but both also saw such significant increases in resource revenue during their time in office that it would have been difficult not to save some of it. For Klein, the priority was not maintaining that stock of capital but rather to pay off the province's debt. When that occurred, the government had no real idea of what to do with its surplus, and so it invested in a wide array of areas, putting some into the Heritage Fund, distributing some via one-off dividends, and spending some on capital projects.

When contributions to the Heritage fund were made, they were done so to ensure future generations of Alberta residents weren't unduly harmed by the present generation using up a non-renewable resource leaving the future with nothing. It is worth highlighting this logic – the logic of harm reduction – that underpins the Heritage Fund because an alternative logic – the logic of investment – is possible. A logic of investment argues in favour of the Heritage Fund positively as a means of improving the lives of future generations where a minimal investment now will reap substantial gains for future generations. However, the fact that a harm reduction logic was the main intergenerational frame for the Heritage Fund is consistent with prospect theory in behavioural economics wherein individuals are more risk-averse to potential *loss* than

potentially equal or increased amounts of *gain* (Barberis 2013; Kahneman 2011; Kahneman and Tversky 1979).

6.2.3 Distribution

With regards to distribution, this is where the two premiers are most consistent. The low tax regime that operated as a de facto dividend system was instituted by Lougheed, maintained by Getty, and accelerated and rebranded as the Alberta Advantage by Klein. It distributed resource revenue to Albertans through foregone taxation, and this was (and still is) the primary way in which Alberta's resource wealth has been distributed.

Resource revenue was also distributed through a few other means. With the debt paid off, Klein earmarked $1.4 billion to a one-off dividend called the Alberta Resource Rebate, or "Ralph Bucks" as it became known more colloquially. And there were some investments that were made that had intergenerational benefits. Investments in human capital (education) were consistently above average in comparison to the other major provinces, and they were protected from the larger cuts that defined the so-called "Klein Revolution." When it comes to physical capital, Lougheed was more intentional with his government's investments in infrastructure and other province-building initiatives that tried to diversify the Alberta economy in preparation for a post-oil world. Unfortunately, the capital flows into the oil and gas sector following the oil shocks simply overwhelmed any government efforts to diversify the economy.

6.2.4 Differences & Commonalities

When evaluating policy choices pertaining to intergenerational issues, intention is a critical, albeit challenging, piece in determining whether they're far-sighted or future-oriented. The inevitable progression of time means that the outcomes of policy choices will likely have an

impact, positive or negative, on future generations. The question is to what extent those outcomes are intended, understanding that the connection between intention and outcomes becomes more tenuous over time as other confounding factors affect the outcomes.

		Outcomes	
		Intergenerationally equitable	*Intergenerationally inequitable*
Intent	*Future-oriented*	Intentionally far-sighted	Unsuccessful
	Present-oriented	Accidental	Myopic

Table 8: Intention and Outcomes

Insofar as their public policy choices are framed around the collection and saving of resource revenue, the greatest difference we see between Lougheed and Klein is one of intent more than outcome. With regards to distribution, we see much more alignment from both premiers on both intent and outcome.

Lougheed tried to institute policies that would, in theory, benefit future generations. This is demonstrated by changes to royalties that sought to capture additional rent following the first oil shock and the ensuing dramatic price increases. We also see the establishment of the Heritage Fund, which was intended to benefit future generations. And, although ultimately unsuccessful, we see a clear effort to invest in diversification, one that was driven in part by Lougheed's personal experience of what happened to Tulsa, Oklahoma after its oil industry declined.

The outcomes of Lougheed's efforts, however, are less impressive than the intent behind them. The changes to the conventional rent regime he instituted resulted in marginal revenue increases overall, largely due to the dwindling importance of the conventional oil sector in Alberta, as conventional oil royalties were displaced by natural gas in the 2000s followed by the oil sands shortly thereafter. The savings accomplished through the Heritage Fund, while laudable in principle, were nowhere near what they could have been. Worse, they were quickly de-

prioritized when the economic situation in the province deteriorated in the 1980s. Finally, the province-building and diversification efforts ultimately did not achieve their objectives, both because the capital flows into the oil and gas sector overwhelmed any efforts the government could make and because the efforts it did make were ultimately unsuccessful, save for a few exceptions (Milke 2015; Puscoi 2013)

With Klein we do not see the same sense of publicly framed intent. The generic royalty regime was set up not to provide a substantial return to Albertan's present and future on the potential value of a resource of which they were owners. Instead, it was about providing regulatory consistency, reducing the cost of capital, and allowing a stumbling oil sands industry to truly get up and running. The savings that occurred through debt repayment was a side benefit. Any concern with future generations was focused more on potential debt servicing costs with which they would be burdened rather than intentionally saving wealth that properly belonged to them.

However, despite the lack of intent, we do see intergenerationally beneficial outcomes from Klein's policies. Given the potential that oil demand will peak as soon as 2025, according to the International Energy Agency (2021), the generic royalty regime helped maximize the available value from the resource. The generous nature of the royalty regime dramatically expanded production in the early 2000s. If peak demand does indeed occur when predicted, that is a much shorter window in which to extract the most amount of financial value from the resource than the centuries worth of oil reserves would suggest. I speak intentionally about the financial value because, as will be discussed shortly, there are other intergenerational consequences that arose from the rapid development of the oil sands.

6.3 Why

What accounts for these minor differences and major alignments in the intent behind and outcomes of Lougheed and Klein's policies? First, the differences. A crucial one is the political will and leadership exercised by Lougheed. One of his biographers notes that his experience in Tulsa, Oklahoma, where the oil industry had once thrived, left a lasting impression on him (Wood 1985). This experience, and the often-repeated belief that conventional oil was declining, made him much more proactive in his approach to managing Alberta's economy. He also had an optimistic view of what government intervention could accomplish, one that would be anathema to the modern conservative movements. The actions and intent of Premier Lougheed also had a lasting impression on his legacy. Survey research on provincial premier legacies has 94% of respondents describing Lougheed as a transformational premier whereas Klein was most commonly[95] described as transactional (38%) (Lewis 2012). For Klein, the overriding priority was the elimination of the deficit and paying off the government's debt. Once that was accomplished in the early 2000s, his government became rudderless and floundered without a strategic vision to anchor their objectives. This was demonstrated by the fact that when given a choice between three separate options of what to do with surplus revenue, Klein's government opted not to choose. Instead, it did a little bit of all three, investing some money in the Heritage Fund, distributed more through the ARR, and sprinkling the balance into various capital projects.

[95] Respondents could choose between transformational, transitional, or transactional to describe a premier. While transactional was the top answer at 38% for Klein, this is clearly a fairly even split in opinion, as 62% of respondents chose the other two options, though the exact results are not identified.

Nevertheless, it's the commonalities between Klein and Lougheed that stand out most. These were driven less by their respective choices than the systemic factors they both had to face. The first is Alberta's political culture, one that was collectively and intentionally created, fostered, and maintained by specific policy choices that would become known as the Alberta Advantage. This political culture created and enforced a certain dependence on resource revenue, one that would help shape fiscal expectations for a generation of Albertans (Salomons and Béland 2020). The voters came to feel entitled to this Alberta Advantage and politicians would respond in kind, to the point where the notion of adopting a provincial sales tax has become the third rail of Alberta politics (Ascah 2019; G. Thompson 2019).

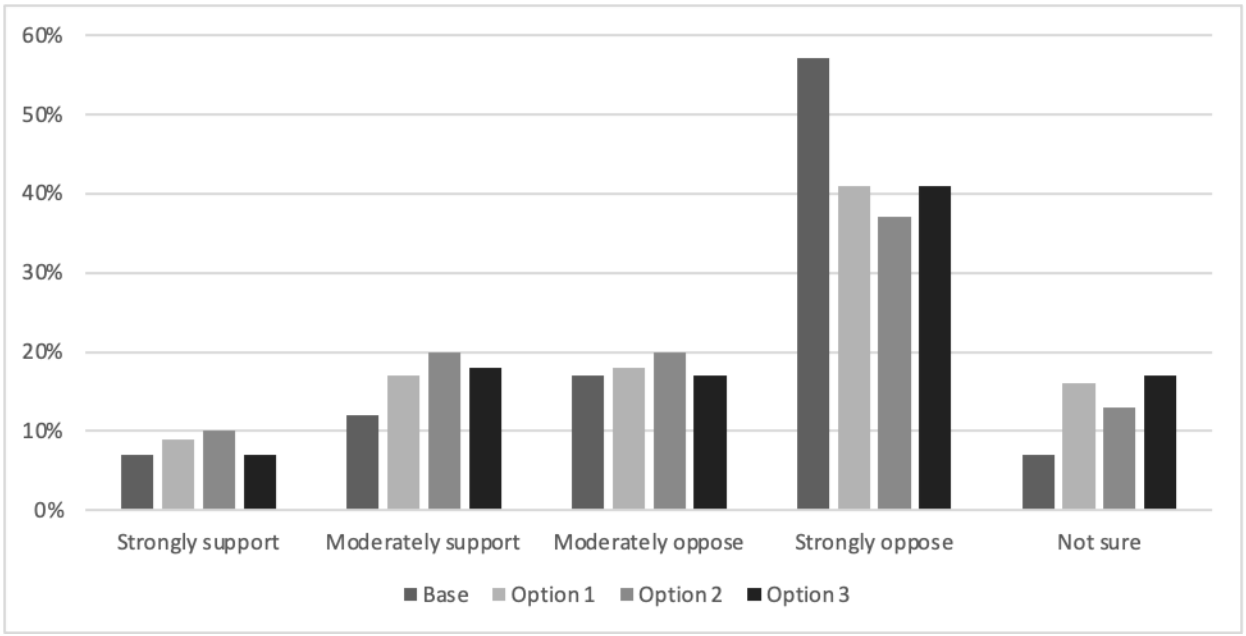

Figure 39: Fiscal Challenges Poll conducted by Research Co. in April 2019

Whether voters in Alberta are myopic is more a mixed result. On the one hand, a poll completed in the 1980s showed significant support for the Alberta Heritage Fund (Thompson Lightstone & Company Ltd. 1982). Moreover, while public opinion will rarely favour the adoption of new taxes, particularly a sales tax in Alberta, opposition to the idea of a sales tax

drops significantly and support increases marginally when explicit trade offs are highlighted. Overall opposition remains, but the results show at least some leave of consideration of the potential trade-offs when explicitly highlighted (Figure 39).

That said, voters continually rewarded politicians as they rode the resource revenue roller coaster to ever greater heights. During periods where it was down, conversations about the merits of economic diversification and the trade-offs associated with Alberta's reliance on the oil and gas sector would arise. However, those questions inevitably disappeared as oil prices and revenue bounced back.

This dynamic presents Alberta decision makers with a fundamental challenge. From a policy perspective, it is easier to wean the province off its reliance on resource revenue when the economy is doing well and there is a surplus. It is much more difficult to make that shift when running significant deficits and needing to raise additional revenue to offset the lost resource revenue without harming the overall economy. However, the idea of proposing new taxes to diversify the Alberta government's revenue sources when the Alberta government is running surpluses runs afoul of Alberta's libertarian political culture. To make such a change would require a strong political will to shape the public conversation around these issues to allow the government to make that shift in revenue sources. Robert Ascah has recently delved into some initial proposals of how that public debate could be shaped (Ascah 2022)

While much of the literature around resource abundant petrostates points to the outsized influence of well-resourced actors in political and policy spheres (Adkin 2016; Karl 1997; Polterovich, Popov, and Tonis 2010; Shrivastava and Stefanick 2015; Stevens 2003), this was less the case in the areas under investigation in this dissertation. Other than the royalty collection

regimes in which the oil sands industry leaders largely got what they wanted in the establishment of the generic royalty regime, the other areas of investigation – savings and distribution – were ones in which the well-resourced oil and gas sector was largely ambivalent. Once the rent was collected, industry would have less interest in what was done with money collected from it compared to their vital interest in reducing the overall take government extracted from industry. Had this dissertation focused on other aspects of resource governance that more directly impacted the oil sector's interests, such as environmental policy and regulations, the actions of the oil industry as a well-resourced actor would have come to the forefront more starkly.

6.4 Consequences

The legacy of these policy choices has had consequences for Albertans, both present and future. On the matter of rent collection, there was an explosion of development activity within the oil sands as the arrival of a generic royalty regime coincided with the skyrocketing price of oil.. Development could not keep up with demand, both within the oil sands and other sectors of society that supported this development. Fort MacMurray was chronically short on schools, hospitals, and other critical infrastructure (Nikiforuk 2009). The narrow two-lane Highway 63 that connected Fort McMurray to Edmonton was woefully inadequate for the manufactured infrastructure and personnel that it would need to transport along that corridor, and the result of this mismatch was it becoming known as the "highway of death" (Nikiforuk 2009).

There has also been a significant build-up of environmental liabilities associated with this development boom, ones that were not explicitly discussed in this dissertation. In conventional oil and gas there are a significant number of orphaned wells. Meanwhile, the tailings left over from oil sands mining production have little to no real extant reclamation technology. Estimates

of the cost to clean up those tailings' ponds range from $30 billion to $260 billion (Riley 2020). This is a financial and environmental liability that is being left for future generations.

Another consequence of the policy decisions made by past Alberta governments is the absence of significant savings in the Heritage Fund. While the comparison to Norway's sovereign wealth fund is unfair (Fawcett 2020), there is still reason to be critical of Alberta for not having saved enough. The key reason for this is not to look back with hindsight and imagine the money we could available today – a wistful "what if we won the lottery?" thought experiment – but rather that it would have dramatically reduced the ongoing revenue volatility that plagues Alberta to this day. The fact that Alberta saved and depleted an equivalent value to the Heritage Fund between 2003 and 2016 in the Sustainability Fund speaks to the volatility that governments have chosen to endure.

Finally, the decision to continually transfer resource wealth to Albertans through the tax system is an inequitable means of distribution, intergenerationally speaking. While Alberta does not significantly deviate from other Canadian provinces when it comes to measures of income inequality, there is a growing concern about inequality as an overarching policy problem (Piketty 2014; Stiglitz 2012). The Alberta Advantage as a means of wealth distribution exacerbates, rather than addresses, that problem.

The impact of Alberta's choices here overwhelmingly benefits future descendants over future residents of Albertans. It is worth pausing for a moment to ask why and whether this should be the case. The why primarily flows from Alberta's political culture, one that prioritizes the individual over the collective. But what reason is there from a normative perspective to prioritize future descendants over future residents? Political commentator Colby Cosh uses quite

harsh language in calling future residents "invaders" in his piece *The Case for Blowing Alberta's Oil Riches* (Cosh 2015). To be clear, he does so in direct comparison to Norway and its sovereign wealth fund in a case where the overlap between future descendants and future residents in Norway is much more aligned than in Alberta. So, what makes future descendants count more than future residents? Or does Cosh not believe that there will be any intergenerational transfer within families and so it really is encouraging the present generation to blow Alberta's oil riches as his title suggests?

These questions are inherently — and inescapably — political. They are questions of collective identity, of who Albertans are and how that identity extends temporally. It is also important to note that answering whether future residents benefit over future descendants, while critical in evaluating the implicit assumptions and intergenerational impacts of long-term policy decisions, is not a prerequisite to making them. For example, one can be agnostic or undecided about whether future descendants versus future residents *should* be prioritized from a normative, values-based perspective, and still recognize that there are significant challenges Alberta faces and policy decisions needed to address. The solutions to those problems, such as removing volatile resource revenue from the government's operational budget, can benefit both in different ways. Regardless, there are no clear-cut answers to these questions.

6.5 Lessons Learned

There are two core lessons that come from this analysis. The first is the ongoing challenge of budget revenue volatility for the Alberta government. While this concern is not new (e.g., L. S. Wilson 2002), the analysis in this dissertation highlights the problem from an intergenerational perspective, thus adding another voice to the growing chorus calling for it to be

addressed. Choosing to be dependent on a volatile revenue stream forces a government to constantly be reactive to the vagaries of commodity prices, ones that will only get worse as the global energy transition picks up steam. At the same time, this reliance on resource revenue undermines a government's ability to be proactive in a whole host of areas. Education and health care funding, two of the largest slices of the Alberta budget, becomes dependent on availability of funds rather than strategically responding to longer term migration and demographic patterns.

The other lesson, less prevalent in academic or public discourse, is that using the tax system as a means of distribution is an inequitable means of wealth distribution, particularly as Alberta maintained one of the least progressive taxation regimes. That's because the richer you are, the greater the benefit you receive in foregone taxation, while people with incomes below the basic personal amount receive no benefit at all. While the amounts are relatively marginal compared to the inequality being created by the gulf between homeownership and renters in Canada's increasingly irrational housing market, they still contribute to a salient policy problem.

6.6 Intergenerational Resource Revenue Policy Proposal

Given what has been discussed so far, how should Alberta proceed? What would a just and fair intergenerational resource revenue policy proposal look like? First, on rent collection I would leave royalty rates alone. The conventional oil royalties have been unchanged for decades and the oil sands royalties were reformed shortly after Klein's departure from office in the late 2000s. At that point a pricing scale was added the oil sands royalty regime such that the post-payout royalty rate for oil sands projects scales from 25 per cent to 40 per centre of net revenue as the price of oil increases from $55/bbl to $120/bbl. A 2016 royalty review did not recommend any substantive changes, and any adjustments would largely be minor tweaks if anything.

While rent collection would go unchanged, the saving of that revenue would not. I would recommend that the Alberta government save 100% of the resource revenue it receives into the Heritage Fund.[96] Why? First, Alberta's poor track record of saving to date means it has more ground to make up. The "'Bird in Hand rule' [which stipulates that] future revenues from natural assets should not be anticipated; rather, only those revenues that actually came in should be counted" (Collier 2010, 107) emphasized the need for Alberta to save what it can when it can. Given the long-term uncertainty surrounding Alberta's high cost, high carbon oil and gas resources in an increasingly carbon constrained world, this seems like a more prudent course of action. This is in line with recommendations from other policy experts and institutions such as the Parkland Institute (D. Thompson 2008), Trevor Tombe (2022), and Blake Shaffer (interviewed for a report authored by economist Todd Hirsch (2023) to support the Alberta NDPs approach to resource wealth governance in the 2023 election) who says "the goal should be to operate without [resource revenue]".

Second, saving 100% of resource revenue would remove much of the volatility from Alberta's budgeting process. While resource revenue has historically been volatile, it is only getting more so. During the pandemic in 2020 oil prices went negative for the first time in history on April 20 (Reed and Krauss 2020), then swung to a high of $122/bbl USD in June 2022 and were cut in half to $60 six months later. This swing meant Alberta went from $3B in resource revenue on the 2020/21 fiscal year to a record $27B in 2022/23. Moreover, with the energy transition ongoing, little new capital investment is being made in the oil sands. Combined

[96] This recommendation to save 100% of Alberta's resource revenue was publish as an op-ed with CBC (Salomons 2023).

with high oil prices of late, many oil sands projects will be entering the post-payout phase, dramatically increasing the royalties paid to the Alberta government. The 2023 Alberta budget identified a 630M swing for every $1 change in oil prices as part of its budget sensitivities (Government of Alberta 2023, 73). Others calculate that could grow to $850M by 2025 (Tombe 2023). The resource revenue rollercoaster, in other words, is about to reach a whole new level.

Saving all of the province's resource revenue would allow Alberta to still make use of the accrued interest each year, but that would be far less volatile. It would provide a more stabile and predictable form of revenue, one that would grow over time. Granted, volatility in global equity and financial asset markets would create some volatility, but that would pale in comparison to what the province currently experiences. Since Alberta typically gets $1B in interest on $15B in capital, growing the fund to $150B would provide a consistent return of approximately $10B per year to government coffers.

If saving 100% of resource revenue is the vision of where Alberta should go, the big question is how to get there. On this, my recommendation is one of process over substance. Former Finance minister Travis Toews, prior to announcing he would not run for re-election, recommended that an expert panel be struck to examine Alberta's volatile revenue structure. Such a panel will undoubtedly come up with policy recommendations that mirror those proposed by Trevor Tombe (2022), Todd Hirsch (2023), or even Robert Ascah (2022). The recent Alberta budget highlighted that its tax advantage – the total amount of tax revenue it would receive if it taxed at comparable levels to the next lowest tax jurisdiction (in this case Ontario) – was nearly $20B. That easily covers the amount of resource revenue coming into government coffers, save some extreme years like 2022. But Alberta is not lacking in policy recommendations on this

front. Instead, it's primarily a political problem. An expert panel will not solve that political challenge. However, a citizens' panel could.

A citizens' panel, like that use by BC to investigate electoral reform (Warren and Pearse 2008), or the City of Edmonton used to support its Energy Transition Strategy (Hanson 2018), can be used to identify common ground. It is a mechanism whereby a representative group of Albertans come together and in a structured, facilitated way, are provided information about a key policy decision(s) and given an opportunity to dig into the trade-offs and authentically deliberate those trade-offs in order to come to some form of agreement. At the very least, they develop a much greater level of engaged consideration than one might get from citizens when compared to the fleeting engagement of a poll or a focus group. This is a helpful mechanism when dealing with particularly fraught political questions.

In BC, the citizens' assembly recommended a new electoral system for BC. It ultimately failed because the way the government set up the process to decide on its recommendation – a referendum requiring 60% approval and a simple majority in 60% of the ridings – inherently biased the status quo. But the assembly itself was able to come to an agreement and deliver a thoughtful recommendation. Similarly in Edmonton, the citizens' panel was able to come to 92% agreement on some key policy recommendations. This level of support was critical in giving Edmonton's city council the confidence it needed that to back the panel's recommendations and sell it to the public. The real challenge here, in other words, is how the inputs of citizen panels are actually used by elected officials.

While I wouldn't recommend placing full fiscal policy decision making in the hands of a citizens' panel – budgets are inherently political documents and elected officials are politically

accountable for those decisions – one could help provide political cover for a an otherwise fraught policy decision. Like the Edmonton Citizens' Panel, a resource revenue panel could weigh in on things like whether to raise existing taxation levels introduce a sales tax or find other revenue sources such as repatriating the carbon tax revenue from Ottawa. The citizens could deliberate on the trade-offs of those policy proposals without having to worry about their political career hanging in the balance. They could grapple with the trade-offs and come to recommendations on what to do, despite being 'tax averse' as pollster Janet Brown's data so consistently indicates. With those kinds of recommendations having been deliberated on and recommended by citizens, elected officials would have more political support for recommending an increase in revenues than they would otherwise.

With the volatile revenue removed from the budget, meanwhile, the final question revolves around what to do with it. The principle of the Heritage Fund would remain in place, as the government would only use the annual interest generated each year (less any amount required to inflation proof the principal) and distribute that to Albertans. So long as the resource revenue is being saved in the Heritage Fund, this allotment would continue to grow.

Given that distributing it through the tax system has primarily benefitted future descendants, I propose a new formula. First, Alberta should take 50% of the annual interest from the Heritage Fund and use it to create an annual dividend for its citizens. This would be a small amount initially (approximately $500M per year or $125 per capita) but would grow over time along with the Heritage Fund itself. It would also help offset the taxation increases needed to stabilize Alberta's revenue streams. This would preferable, in my view to using the funds to keep income taxes artificially low because it would be a more equitable means of distribution. All

Albertans would benefit regardless of their socio-economic status. Eligibility requirements could be established to prioritize current Albertans over newcomers, such as pro-rating the dividend by 20% for each year of residency in Alberta, which means they'd qualify for the full dividend after five years. As a direct distribution mechanism, it would benefit both future descendants and future residents, as existing Albertans would receive the dividend while the saving in the Heritage Fund would effectively defer those dividends to future residents.

A dividend system could distribute resource wealth in two ways: an equal payment to every Albertan, or a means tested approach whereby dividend payments are adjusted based on household income, with lower-income households receiving a higher dividend than high-income households. My preference would be for the former over the latter for several reasons. First, I view the natural capital as owned by all Albertans, and so it should be distributed to them equally. Second, and more importantly, I prefer simpler policy tools and objectives over more complicated ones. For example, I prefer a simpler progressive taxation system over one with numerous exemptions, as those most likely to benefit from those exemptions are the ones able to afford help to exploit them. Even if the exemptions are geared to support lower-income households, the more complicated the tax system is the less likely those households can make use of those exemptions. Finally, as described in Chapter 5, where instituting a progressive tax system exacerbated the inequitable distribution of resource wealth through the tax system, I would seek to avoid similar unintended consequences that could arise from mixing policy objectives. I would not recommend using a resource dividend system to address social inequality. Other tax-based policy instruments would be better suited to address that policy objective.

The remaining 50% of the Heritage Fund's annual interest income would be invested in both physical and human capital. This could be earmarked specifically for physical capital investments that provide a long-term economic benefit, such as the current push to expand high speed internet connectivity to rural areas, or for things like expanding the existing Alberta Heritage Fund Scholarship program and building, expanding, or upgrading educational facilities. Whatever these investments are, the intergenerational benefits expected of them should be clearly identified.

By allocating resource wealth in this manner, the money would be more equitably distributed both within the present generation and to both future populations of residents and descendants. Direct dividends, rather than tax cuts, ensure an equal payout to each Albertan regardless of their socioeconomic status, which improves on the unequal distribution we currently see while still staying true to Alberta's individualistic political culture.

In this way, Premier Klein's often criticized "Ralph Bucks" were a preferable distribution mechanism. The issue there was that it was an ad hoc payment people could not plan for. Stable and reliable distribution of Alberta's resource wealth, on the other hand would allow families to plan for and make better use of the revenue. For example, a family could take the annual dividend and flow it entirely into their children's RESP contributions, thus ensuring the transfer of those funds to future descendants. But consistency in the policy is needed for Albertans to make these sorts of plans.

Moreover, the dividend system would also serve a natural policy entrenchment function. Even if this system were enshrined in legislation, another government could easily undermine it if it felt it was in their interest to do so, much like the way legislated election dates are often

ignored if the governing party feels it has an advantage. But as the dividend payments grew the more difficult it would become to roll back this system. Making the payments more visible, either through monthly payments or mailing the cheques rather than using direct deposits, would help further protect this overall regime. The government of the day would still have 50 per cent of the money to direct towards physical and human capital investments.

Direct dividends could thus be used to benefit future descendants. The program would expand as the Heritage Fund grew while investments in physical and human capital would create other lasting benefits to future descendants and future residents, both by increasing their earning power and quality of life.

6.7 Epilogue

As this dissertation ends, it is worth discussing a couple of outstanding issues. The first and most obvious is the fact that while this is a dissertation that focused on the intergenerational issues pertaining to Alberta's oil and gas resources, it did not get too deep into the environmental liabilities associated with them, such as orphaned wells or tailing ponds of the oil sands. In other words, it focused on the benefits of the resource without paying adequate intention to the attendant costs. This was done to keep the scope of the project within manageable boundaries, not to diminish the importance of these environmental liabilities. A more thorough analysis of the intergenerational issues pertaining to Alberta's non-renewable resources must undoubtedly incorporate both the costs and the benefits to get a better sense of their impacts on future generations. This dissertation can serve as a starting point for that work.

There are also significant methodological challenges that arise when trying to account for environmental liabilities that depend on various hypothetical scenarios. For example, the

financial liability of orphaned wells presumes a full return to the natural state that existed prior the well being installed. The cost of reclamation is predicated on the land being returned to that original state. But other options exist. In many cases, there are wells that are inactive which are still potentially productive but not currently economic. With the development of EOR previously inactive wells can be returned to a productive status, which helps explain why so many are not entirely decommissioned or reclaimed. Who knows what technological innovation might come that could make those wells economic again?

Alternatively, imagine you have small section of industrial-grade land. Rather than remove the gravel, electrical wiring, and all other infrastructure, perhaps these small pads could be easily converted to other uses such as solar panel farms. Rather than being returned to a purely natural state, these areas could be more easily and cheaply converted to other productive uses. This would fundamentally alter the orphan well liability question for Alberta.

The tailings ponds are another matter. In this case, Alberta's oil sands were approved under the hope that tailings pond reclamation techniques would be perfected in the future. This is clearly proving to be difficult, as the effectiveness of reclamation techniques continues to be "unproven" and "unknown" (Riley 2020). Calculating the liability of such unknowns is challenging, to say the least. However, when compared to what is saved in the Heritage Fund, the range of those clean up estimates ($30B - $260B) dramatically exceeds what is available in the Heritage Fund ($18.7B as of March 31, 2022).

The second issue is that while this dissertation is primarily focused on the historical period from 1971 – 2006, Alberta is currently in the midst of another very substantial roller-coaster apex that could rise even higher over the next several years. The Russian invasion of

Ukraine and OPEC's ongoing program of supply cuts has driven prices higher than they might otherwise be, while an oil industry battered by COVID-19 has focused on returning cash to shareholders rather than investing in new production. This has led to a dramatic increase in resource revenue the likes of which Alberta has never seen and one that already led to the "largest swing in provincial budget balances in Canadian history" (Fletcher 2023). Between Budget 2020 (the year of the pandemic when oil prices when negative) and Budget 2023, Alberta's resource revenue swung from $3B to $27B. Yet on February 28, 2023, the Alberta government announced a meagre surplus of $2B for the 2022/23 fiscal year, thanks largely to as a significant amount of pre-election spending. The revenue rollercoaster just keeps running.

The third and final issue here is that this dissertation is focused who benefits from Alberta's resource wealth, differentiating between separate populations of future generations. At the most fundamental level, this is a question of who counts as a "true Albertan." For those wanting to prioritize future descendants and the policies that direct funds to that group, the answer is that Albertans that have 'always lived here' are more worth than the 'invaders', to use Cosh's blunt language. But what goes unsaid is that the Albertans Cosh would prioritize are themselves the invading settler. After all, treaties with Indigenous Peoples in Canada did not account for subsurface mineral rights. Indeed, Indigenous interpretation of the treaties was that they agreed to share the land "to the depth of a plow" (Krasowski and Wheeler 2019, XVI, 95, 158, 214). Under this interpretation, Indigenous Peoples in Canada, due to the legacy of colonization, have been historically excluded from benefiting from resource wealth created in Alberta in that past and to this day. Economic reconciliation, to compensate for the historical

injustice of resource extraction, is a fundamental component of understanding true intergenerational justice.

But a more systematic change is underway, as the ever-accelerating energy transition threatens to bring forward the day when global demand for oil peaks — and then begins its permanent and irreversible decline. Not surprisingly, investment in the oil sands is declining (as it is in most other basins) as the long-term bets required to make projects successful are not nearly as certain as they were in the mid-2000s. Combined with the high oil prices, this lack of investment is causing a large number of oil sands projects to enter the post-payout phase of the generic royalty regime. With their capital costs covered, the royalty rate will increase dramatically and, so long as oil prices remain high, the revenue received by the province will increase even more so. One estimate suggested that if oil prices stay at $100 a barrel through 2023, 80% of Alberta's oil sands production could be operating under post-payout royalty conditions (Tertzakian and Forrest 2022). With an already unprecedented increase in provincial revenues in the rear-view mirror, Alberta is poised to realize even bigger financial windfalls. What to do with this short lived and unprecedented bump in revenue should preoccupy the province for some time. Time will tell whether the province more adequately addresses intergenerational concerns than it has in the past. But if Alberta's history is any indication, the outlook is not great.

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APPENDIX 1-A: Cited Freedom of Information and Privacy Act Documents

- Freedom of Information and Protection of Privacy (FOIP) Act Request: 2016-G-0149
- Freedom of Information and Protection of Privacy (FOIP) Act Request: 2019-G-0075
- Freedom of Information and Protection of Privacy (FOIP) Act Request: 2016-G-0138

Actual Table from memo displayed in Table 1 from Alberta Energy (1995a):

Table 1: Comparison of Crown Agreements in Place

Projects Covered by Crown Agreements	Royalty Regime	Status of Off-lease Natural Gas
Integrated Mining, Extraction and Upgrading Projects (Royalty paid on synthetic crude oil)		
Syncrude	50% of deemed net profits.	[redacted]
Suncor	Greater of 5% of gross production or 30% of net profits.	
Thermal In Situ (Royalty paid on bitumen)		
	Pre-Payout % of Gross	Post-Payout Greater of % of Gross or % of Net
Esso Cold Lake	1% to 5% ramp up	5% or 30%
Amoco Elk Point Amoco Lindbergh Murphy Lindbergh Shell Peace River	1% to 5% ramp up	5% or 30%
Amoco Wolf Lake	1% and 5%	5% or 32%
[redacted]		
Primary In Situ (Royalty paid on bitumen)		
Koch Reita Lake Suncor Burnt Lake	5% flat	5% or 30%

s.16(1)(a)(ii) (b)(c)(i)(iii)

s.16(1)(a)(ii) (b)(c)(i)(iii)

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APPENDIX 3-A: Resource Revenue Plan Hearing Presenters

Resource Revenue Plan Hearing Presenters								
#	Presenter	Date	Time	Not enough	Support	Mixed	Opposed	Comments
1	City of Edmonton	23-May-72	9:00 AM		X			Municipalities should receive 1/3 of revenues
2	Canadian Petroleum Association	23-May-72	9:30 AM				X	Harmful to industry, increase production costs cause well abandonment
3	Paddon Hughes Development Co. Ltd	23-May-72	11:30 AM				X	Harmful to smaller independent oil companies
4	Alberta Federation of Labour	23-May-72	2:00 PM			X		Supports taxation of reserves, opposed exploratory incentive system. Advocated government get involved in the oil exploration as Feds do with Panarctic Oils
5	Chevron Standard Ltd.	23-May-72	3:00 PM				X	Negatively affect ROI
6	Communist Party of Canada	23-May-72	3:30 PM	X		X		Disagreed with position paper, advocated for higher royalty rate of $1/barrel (given $0.50 is doubling rates to 33% (see Fairview Consortium) this

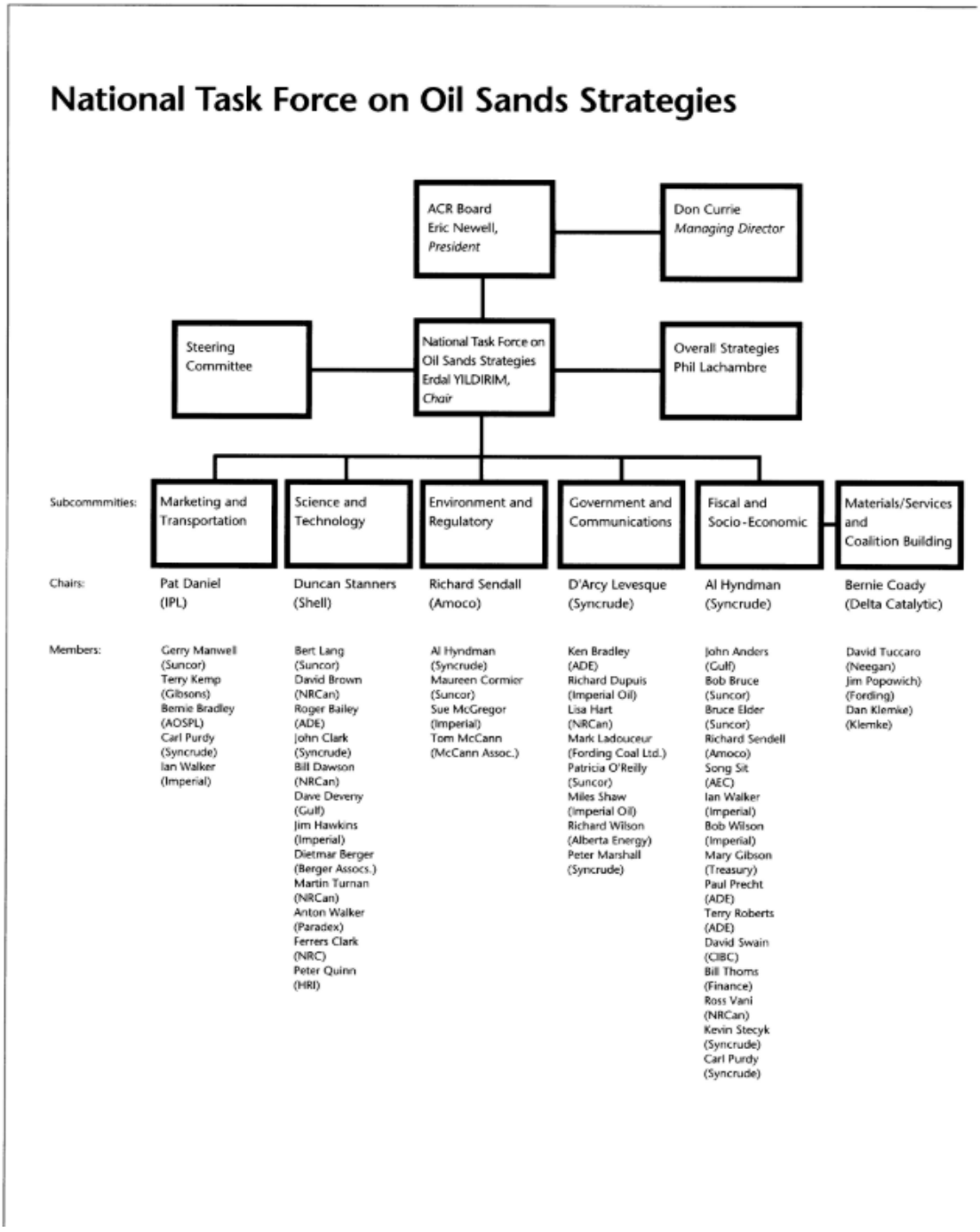
								proposal is asking for 66% royalty rate)
7	Calgary Metro Council of NDP	23-May-72	4:00 PM	X				Advocated for higher revenue goal of $190 million (rather than $50-$90 million).
8	Hewitt Oil (Alberta) Ltd.	23-May-72	4:30 PM				X	Increased costs = increased prices for consumers
9	Committee for an Independent Canada	23-May-72	5:00 PM			X		Support for more revenue from oil industry but rejected tax as encouraging too rapid production of existing reserves.
10	Dome Petroleum Ltd.	23-May-72	8:00 PM				X	Would reduce employment, revenue to gov, economic life, etc.
11	Indian Association of Alberta	23-May-72	8:30 PM		X			Give some funds to the Indian Education Centre
12	Husky Oil Corporation	23-May-72	9:00 PM				X	Reduce exploration and discourage development of reserves
13	Fairview Consortium	23-May-72	9:30 PM	X				Go further - increase rates but no less that 50cents barrel or double present royalty ceiling to 33-1/3%
14	Forest Oil Operations	23-May-72	10:00 PM				X	Investor confidence will be shaken

	Ltd.							
15	Independent Petroleum Association of Canada (IPAC)	24-May-72	9:00 AM				X	reduction in exploration = reduction in employment; suggested Sales
16	Unifarm of Alberta	24-May-72	11:00 AM	X				Could increase revenues more than $90 million
17	Canadian Association of Oilwell Drilling Contractors	24-May-72	2:00 PM				X	Result in reduction of funds for exploration and unemployment, need exploration incentives if taxes increase.
18	Pacific Petroleum Ltd.	24-May-72	3:00 PM				X	Would force companies to look for opportunities elsewhere.
19	Union Oil Company of Canada Ltd.	24-May-72	3:30 PM				X	Oil companies shouldn't be singled out for taxation.
20	Bluemount Resources Ltd.	24-May-72	4:00 PM				X	Opposition expressed
21	B.P. Oil & Gas Ltd	24-May-72	4:30 PM				X	Opposition expressed
22	Petrofina Canada Ltd.	24-May-72	5:00 PM				X	Longer implementation schedule, freehold land exempt, gain revenues from all industry not just oil
23	Town of Drayton	24-May-72	8:00 PM			X		Concerned of marginal well abandonment

	Valley							
24	Canadian Occidental Petroleum	24-May-72	8:30 PM				X	Existing rates are sufficient.
25	Ballinderry Explorations ltd.	24-May-72	9:00 PM				X	Would negatively affect development of industry
26	Liberal Party of Alberta	24-May-72	9:30 PM		X			More public hearings, concern that tar sands excluded
27	Canus Petroleum Ltd.	24-May-72	10:00 PM				X	Critical and would negatively affect development
28	Energy Resources Group – University of Alberta	25-May-72	8:45 AM		X			Concerned reserve tax would yield declining revenue; suggested royalty rates applied to a stipulated price rather than wellhead price.
29	Alberta Teachers' Association	25-May-72	9:00 AM		X			Oil revenue should increase as costs drop and prices rise.
30	Canadian Institute of Mining and Metallurgy	25-May-72	10:00 AM			X		Plan would be complicated to administer and suggested raising existing taxes
31	Anderson Explorations	25-May-72	10:30 AM				X	Bad for small companies
32	Students' Union of the University of	25-May-72	11:00 AM				X	Investor confidence will be harmed, exploration could decline.

	Alberta							
33	Amoco Canada Ltd.	25-May-72	11:30 AM				X	Early abandoned wells, investor confidence shaken, etc.
34	Calgary Chamber of Commerce	25-May-72	2:00 PM			X		Explore options for investment in Alberta; reduce government spending.
35	Voyageur Petroleum	25-May-72	2:30 PM				X	reserves tax would reduce exploration in the province; companies making 'significant exploration contributions' should be compensated
36	National Farmers' Union, Reg. 7 & 8	25-May-72	3:00 PM	X				Revenue goal insufficient; coordinate oil policy with 4 western provinces
37	Fairview Junior High School	25-May-72	4:30 PM	X				Expressed concern for future generations.

APPENDIX 3-B: National Task Force on Oil Sands Strategies Members



Source: National Task Force on Oil Sands Strategies (1995, 50)

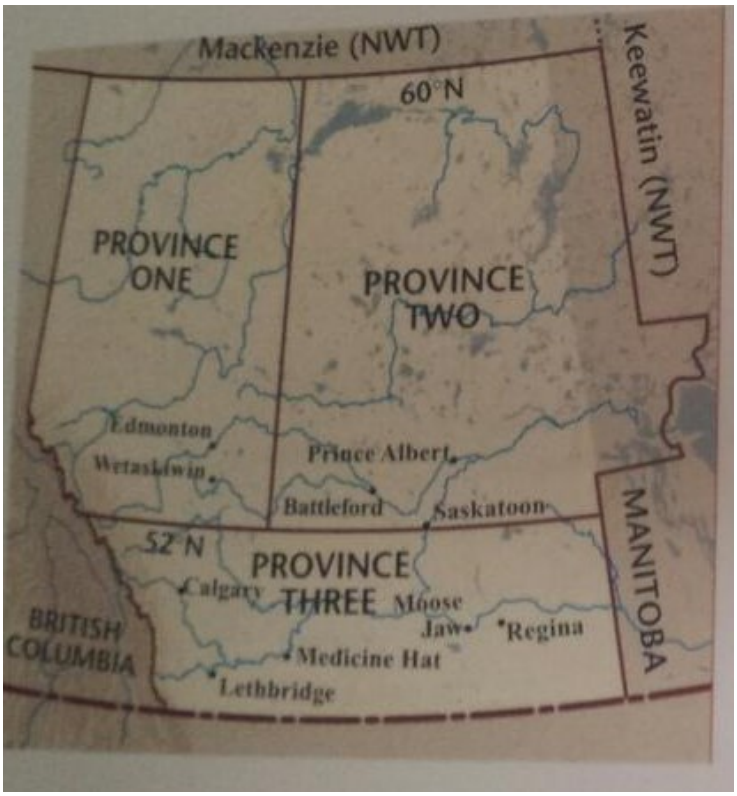
	Working Group	Name	Organization
1	Chair	Erdal Yilidirim	
2	Environment and Regulatory	Al Hyndman	(Syncrude)
	Fiscal and Socio-Economic	Al Hyndman	(Syncrude)
3	Science and Technology	Anton Walker	(Paradex)
4	Marketing and Transportation	Bernie Bradley	(AOSPL)
5	Materials/Services and Coalition Building	Bernie Coady	(Delta Catalytic)
6	Science and Technology	Bert Lang	(Suncor)
7	Science and Technology	Bill Dawson	(NRCan)
8	Fiscal and Socio-Economic	Bill Thoms	(Finance)
9	Fiscal and Socio-Economic	Bob Bruce	(Suncor)
10	Fiscal and Socio-Economic	Bob Wilson	(Imperial)
11	Fiscal and Socio-Economic	Bruce Elder	(Suncor)
12	Fiscal and Socio-Economic	Carl Purdy	(Syncrude)
	Marketing and Transportation	Carl Purdy	(Syncrude)
13	Materials/Services and Coalition Building	Dan Klemke	(Klemke)
14	Government and Communications	D'Arcy Levesque	(Syncrude)
15	Science and Technology	Dave Deveny	(Gull)
16	Science and Technology	David Brown	(NRCan)

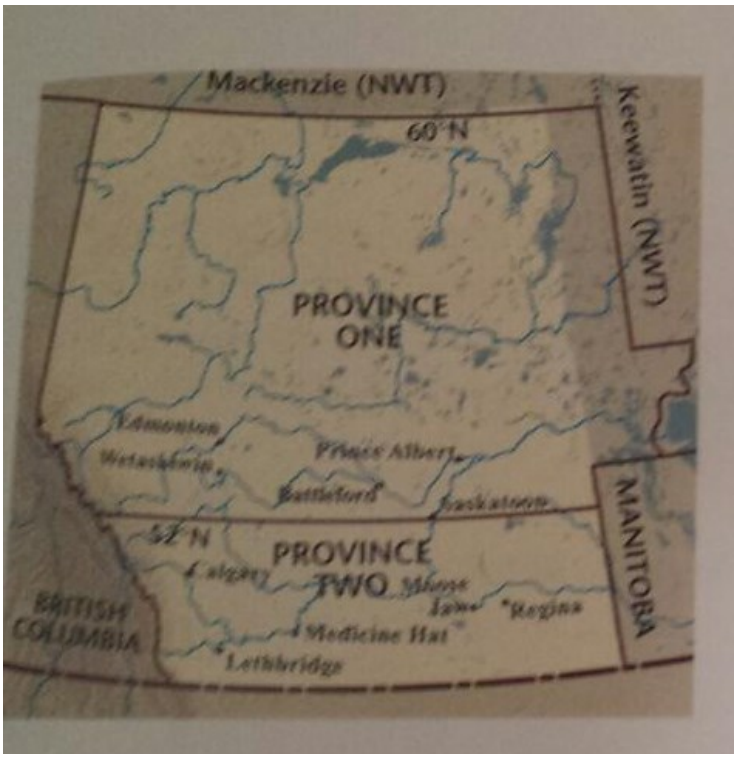
17	Fiscal and Socio-Economic	David Swain	(CIBC)
18	Materials/Services and Coalition Building	David Tuccaro	(Neegan)
19	Science and Technology	Dietmar Berger	(Berger Assocs.)
20	Managing Director	Don Currie	
21	Science and Technology	Duncan Stanners	(Shell)
22	President	Eric Newell,	Syncrude
23	Science and Technology	Ferrers Clark	(NRC)
24	Marketing and Transportation	Gerry Manwell	(Suncor)
25	Fiscal and Socio-Economic	Ian Walker	(Imperial)
[redacted]	Marketing and Transportation	Ian Walker	(Imperial)
26	Science and Technology	Jim Hawkins	(Imperial)
27	Materials/Services and Coalition Building	Jim Popowich	(Fording)
28	Fiscal and Socio-Economic	John Anders	(Gulf)
29	Science and Technology	John Clark	(Syncrude)
30	Government and Communications	Ken Bradley	(ADE)
31	Fiscal and Socio-Economic	Kevin Stecyk	(Syncrude)
32	Government and Communications	Lisa Hart	(NRCan)
33	Government and Communications	Mark Ladouceur	(Fording Coal Ltd.)

34	Science and Technology	Martin Turnan	(NRCan)
35	Fiscal and Socio-Economic	Mary Gibson	(Treasury)
36	Environment and Regulatory	Maureen Cormier	(Suncor)
37	Government and Communications	Miles Shaw	(Imperial Oil)
38	Marketing and Transportation	Pat Daniel	(IPL)
39	Government and Communications	Patricia O'Reilly	(Suncor)
40	Fiscal and Socio-Economic	Paul Precht	(ADE)
41	Government and Communications	Peter Marshall	(Syncrude)
42	Science and Technology	Peter Quinn	(HRI)
43	Overall Strategies	Phil Lachambre	
44	Government and Communications	Richard Dupuis	(Imperial Oil)
45	Environment and Regulatory	Richard Sendall	(Amoco)
[redacted]	Fiscal and Socio-Economic	Richard Sendell	(Amoco)
46	Government and Communications	Richard Wilson	(Alberta Energy)
47	Science and Technology	Roger Bailey	(ADE)
48	Fiscal and Socio-Economic	Ross Vani	(NRCan)
49	Fiscal and Socio-Economic	Song Sit	(AEC)
50	Environment and Regulatory	Sue McGregor	(Imperial)

51	Marketing and Transportation	Terry Kemp	(Gibsons)
52	Fiscal and Socio-Economic	Terry Roberts	(ADE)
53	Environment and Regulatory	Tom McCann	(McCann Assoc.)

APPENDIX 3-C: Alternate Provincial Boundaries





APPENDIX 4-A: Heritage Fund Historical Summary of Operations (millions)

		Transfers To the Fund			Transfers (From) the Fund					
Fiscal Year	**Income (Loss) (a)**	**Revenue Allocation**	**New Deposits**	**Advanced Education Endowment (b)**	**Income Transfers (c)**	**Project Expenditures (Capital Projects Division)**	**Fund Equity, at cost**	**Per Capita Fund Equity**	**% Growth (Loss) in value**	
1976-77	$88	$2,120	-	-	-	-$36	$2,172	$1,162	-	
1977-78	$194	$931	-	-	-	-$87	$3,210	$1,648	41.80%	
1978-79	$294	$1,059	-	-	-	-$132	$4,431	$2,191	32.99%	
1979-80	$343	$1,332	-	-	-	-$478	$5,628	$2,684	22.49%	
1980-81	$724	$1,445	-	-	-	-$227	$7,570	$3,455	28.73%	
1981-82	$1,007	$1,434	-	-	-	-$349	$9,662	$4,217	22.06%	
1982-83	$1,482	$1,370	-	-	-$867	-$296	$11,351	$4,790	13.58%	
1983-84	$1,467	$720	-	-	-$1,469	-$330	$11,739	$4,904	2.39%	
1984-85	$1,575	$736	-	-	-$1,575	-$228	$12,247	$5,116	4.31%	
1985-86	$1,667	$685	-	-	-$1,667	-$240	$12,692	$5,278	3.18%	
1986-87	$1,445	$217	-	-	-$1,445	-$227	$12,682	$5,213	-1.25%	
1987-88	$1,353	-	-	-	-$1,353	-$129	$12,553	$5,143	-1.34%	
1988-89	$1,252	-	-	-	-$1,252	-$155	$12,398	$5,047	-1.87%	
1989-90	$1,244	-	-	-	-$1,244	-$134	$12,264	$4,909	-2.73%	
1990-91	$1,337	-	-	-	-$1,337	-$150	$12,114	$4,755	-3.14%	

1991-92	$1,382	-	-	-	-$1,382	-$84	$12,030	$4,641	-2.40%
1992-93	$785	-	-	-	-$785	-$84	$11,946	$4,538	-2.22%
1993-94	$1,103	-	-	-	-$1,103	-$71	$11,875	$4,452	-1.88%
1994-95	$914	-	-	-	-$914	-$49	$11,826	$4,379	-1.64%
1995-96*	$1,046	-	-	-	-$1,046	-	$11,826	$4,325	-1.24%
1996-97	$932	-	-	-	-$756	-	$12,002	$4,325	0.00%
1997-98	$947	-	-	-	-$922	-	$12,027	$4,250	-1.73%
1998-99	$932	-	-	-	-$932	-	$12,027	$4,149	-2.39%
1999-00	$1,169	-	-	-	-$939	-	$12,257	$4,151	0.06%
2000-01	$706	-	-	-	-$706	-	$12,257	$4,080	-1.71%
2001-02	$206	-	-	-	-$206	-	$12,257	$4,008	-1.76%
2002-03	-$894	-	-	-	-	-	$11,363	$3,632	-9.37%
2003-04	$1,133	-	-	-	-$1,133	-	$11,363	$3,570	-1.72%
2004-05	$1,092	-	-	-	-$1,092	-	$11,363	$3,509	-1.71%
2005-06	$1,397	-	$1,000	$750	-$1,015	-	$13,495	$4,063	15.79%
2006-07	$1,648	-	$1,000	$250	-$1,365	-	$15,028	$4,392	8.11%
2007-08	$824	-	$918	-	-$358	-	$16,412	$4,670	6.33%
2008-09	-$2,574	-	-	-	-	-	$13,838	$3,848	-17.60%
2009-10	$2,006	-	-	-	-$2,006	-	$13,838	$3,761	-2.27%
2010-11	$1,080	-	-	-	-$720	-	$14,198	$3,804	1.14%
2011-12	$798	-	-	-	-$344	-	$14,652	$3,867	1.65%
2012-13	$1,316	-	-	-	-$1,155	-	$14,813	$3,823	-1.13%

2013-14	$2,109	-	-	-	-$1,916	-	$15,006	$3,769	-1.41%	
2014-15	$1,678	-	-	-	-$1,468	-	$14,961	$3,664	-2.81%	
2015-16	$1,238	-	-	-	-$1,029	-	$15,170	$3,660	-0.09%	
2016-17	$2,333	-	-	-	-$2,151	-	$15,352	$3,659	-0.04%	
2017-18	$1,787	-	-	-	-$1,557	-	$15,582	$3,674	0.42%	
2018-19	$937	-	-	-	-$563	-	$15,956	$3,712	1.04%	
2019-20	$1,318	-	-	-	-$1,031	-	$16,243	$3,723	0.30%	
2020-21	$1,354	-	-	-	-$1,208	-	$16,389	$3,711	-0.34%	
2021-22	$1,952	-	-	-	-$1,247	-	$17,094	$3,847	3.67%	
2010-11	$1,080	-	-	-	-$720	-	$14,198	$3,804	1.14%	

*The fiscal year the Heritage Fund was reformed.

APPENDIX 4-B: Calculated Estimate of Heritage Fund Value with 100% saving rule and 30% saving rule (millions).

Fiscal Year	Net Income (Loss)	Fund Equity (at cost)	Calculated Return	Estimated Interest (100% savings)	**Estimated Accumulated Total (100% Savings)**	30% NRRR	Estimated 30% Return	**Estimated 30% Accumulated Total**
1976-77	$88	$2,172	4.05%	$91	**$2,335**		$91	**$2,335**
1977-78	$194	$3,210	6.04%	$324	**$5,680**	$908	$196	**$3,434**
1978-79	$294	$4,431	6.64%	$591	**$9,501**	$1,027	$292	**$4,689**
1979-80	$343	$5,628	6.09%	$839	**$14,613**	$1,316	$377	**$6,568**
1980-81	$724	$7,570	9.56%	$1,788	**$20,482**	$1,408	$748	**$8,574**
1981-82	$1,007	$9,662	10.42%	$2,479	**$26,269**	$1,424	$1,000	**$10,599**
1982-83	$1,482	$11,351	13.06%	$3,707	**$32,097**	$1,031	$1,540	**$13,333**
1983-84	$1,467	$11,739	12.50%	$4,324	**$38,923**	$1,323	$1,864	**$16,779**
1984-85	$1,575	$12,247	12.86%	$5,298	**$46,492**	$1,438	$2,335	**$20,490**
1985-86	$1,667	$12,692	13.13%	$6,244	**$53,787**	$1,332	$2,810	**$24,205**
1986-87	$1,445	$12,682	11.39%	$5,797	**$56,671**	$498	$2,685	**$26,250**
1987-88	$1,353	$12,553	10.78%	$5,918	**$60,829**	$766	$2,782	**$28,596**
1988-89	$1,252	$12,398	10.10%	$5,903	**$64,363**	$642	$2,814	**$30,677**
1989-90	$1,244	$12,264	10.14%	$6,297	**$68,375**	$672	$3,034	**$32,947**
1990-91	$1,337	$12,114	11.04%	$7,312	**$73,564**	$806	$3,555	**$35,761**
1991-92	$1,382	$12,030	11.49%	$8,012	**$77,753**	$607	$3,938	**$38,217**
1992-93	$785	$11,946	6.57%	$4,783	**$77,577**	$655	$2,353	**$38,156**
1993-94	$1,103	$11,875	9.29%	$7,132	**$83,916**	$845	$3,513	**$41,335**
1994-95	$914	$11,826	7.73%	$6,270	**$87,395**	$1,013	$3,076	**$42,874**
1995-96*	$1,046	$11,826	8.84%	$7,514	**$92,470**	$836	$3,687	**$45,367**
1996-97	$932	$12,002	7.77%	$6,969	**$96,715**	$1,210	$3,389	**$47,035**
1997-98	$947	$12,027	7.87%	$7,437	**$101,883**	$1,133	$3,599	**$49,300**
1998-99	$932	$12,027	7.75%	$7,575	**$105,321**	$710	$3,669	**$51,013**
1999-00	$1,169	$12,257	9.54%	$9,855	**$113,191**	$1,395	$4,738	**$54,416**
2000-01	$706	$12,257	5.76%	$6,602	**$121,230**	$3,176	$3,085	**$56,645**
2001-02	$206	$12,257	1.68%	$2,035	**$123,095**	$1,868	$935	**$56,569**
2002-03	-$894	$11,363	-7.87%	-$10,086	**$118,105**	$2,139	-$4,545	**$53,227**
2003-04	$1,133	$11,363	9.97%	$13,660	**$150,659**	$2,303	$6,103	**$67,312**
2004-05	$1,092	$11,363	9.61%	$14,207	**$162,042**	$2,923	$6,268	**$71,492**
2005-06	$1,397	$13,495	10.35%	$17,075	**$182,022**	$4,304	$7,484	**$79,777**
2006-07	$1,648	$15,028	10.97%	$19,720	**$199,542**	$3,678	$8,618	**$87,204**
2007-08	$824	$16,412	5.02%	$9,646	**$201,768**	$3,307	$4,176	**$87,345**
2008-09	-$2,574	$13,838	-18.60%	-$37,953	**$166,084**	$3,575	-$16,135	**$70,609**
2009-10	$2,006	$13,838	14.50%	$30,850	**$243,661**	$2,030	$13,160	**$103,940**
2010-11	$1,080	$14,198	7.61%	$16,884	**$238,843**	$2,528	$7,152	**$101,181**
2011-12	$798	$14,652	5.45%	$12,741	**$246,680**	$3,491	$5,330	**$103,193**
2012-13	$1,316	$14,813	8.88%	$21,577	**$264,450**	$2,334	$9,004	**$110,356**
2013-14	$2,109	$15,006	14.05%	$35,750	**$290,117**	$2,873	$14,918	**$121,059**

2014-15	$1,678	$14,961	11.22%	$29,726	**$294,765**	$2,684	$12,399	**$122,948**
2015-16	$1,238	$15,170	8.16%	$21,941	**$290,797**	$837	$9,174	**$121,588**
2016-17	$2,333	$15,352	15.20%	$41,655	**$315,759**	$929	$17,551	**$133,046**

APPENDIX 4-C: Hansard May 17, 1976:

MR. CLARK: Mr. Chairman, I apologize for being out when we started the discussion. Mr. Premier, I think at least three questions flow rather logically, and I'd like to pose them to you. The first question deals with, how did the government arrive at the 30 per cent, Mr. Premier? What was the government's thinking? I suppose one could say, why not 30 per cent or why not 20 per cent. Can you give us some sort of indication of the government's reasoning for having 30 per cent?

MR. LOUGHEED: With regard to the 30 per cent, it's a judgment decision. We looked at the situation relative to the return, the speed at which the production was occurring, the decline in reserves of oil, but the somewhat improvement in natural gas. We looked at the fact that we are at present the largest spending province per capita in Canada, in terms of our overall budgetary requirements. We therefore said that some portion should be set aside for the future. We looked at the matter of one-third. We looked at the other more complicated formula that worked out in terms of the incremental oil revenues; but natural gas revenues were increasing. We thought it would be a lot clearer to the public to have as simple a form as we could. We came to the judgment decision collectively that 30 per cent of today's revenues from depleting natural resources should be set aside for the future citizens of this province, and that 70 per cent be used for current revenues. We felt it was much better in terms of public awareness and understanding of the fund, much better in terms of our overall position, to have something of that nature. It was a judgment decision, taking many factors into consideration.

APPENDIX 5-A: Hypothetical Tax Bracket distribution of non-renewable resource revenue.

Data sources:

1. CANSIM 202-0408: Distribution of total income, by census family type, 2011 constant dollars, annual
2. CANSIM 204-0001: Tax Filer data
3. Alberta Energy Resource Revenue Workbook: http://www.energy.alberta.ca/AU/Royalties/Documents/Revenueworkbook.xls

Calculations

1. Determine population of each tax bracket but calculating tax bracket percentage (202-0408) by tax filer numbers.
2. Estimate individual taxes by calculating median income of tax bracket by tax rate. Flat tax system is 10% for all brackets. Progressive tax system started at 10% for $20,000-$39,999 and increase 2% per bracket. For example, the tax bracket $20,000-$39,999 has income tax calculated as 10% of $30,000, while the $40,000-$59,999 bracket has income tax calculated as 12% of $50,000.
3. Multiply tax bracket filer numbers by individual tax amount in each bracket. Calculate income tax paid per bracket as a percentage of total.
4. Using net non-renewable resource revenue (total non-renewable resource revenue plus/minus Heritage deposits/withdrawals) determine non-renewable funded tax break as a similar percentage of total and calculate per-capita based on tax filer numbers.