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Alberta’s Oil Sands Royalty Regime

Does it Make Economic Sense?

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Introduction

Alberta's oil sands industry is experiencing a period of tremendous growth. There are many reasons for this, among them the demand for oil, as well as oil being at $50/bbl, both directly related. Another reason for this growth is the fact that Alberta changed its royalty regime in 1997. Currently, companies must pay royalties of 25% of net revenues, unless they invest in capital projects. If so, then only 1% of net revenues must be paid until the cost of the capital project plus some small return is recouped. Though many people have criticized the Alberta government for this approach, this report will explore whether this regime makes economic sense, and will attempt to determine if the loss of royalties resulting from capital investment is recouped through extra revenue and decreased expense resulting from increased employment. This report will also try to weigh the level of global competition for investment, and determine if Alberta's regime is necessary to attract global corporations. At $50/bbl, some of these points may seem insignificant, but the conclusions will also be weighed when profits for oil sands producing firms are not so high.

Alberta's royalty regime

Alberta's royalty regime is defined as follows. The basic elements of the regime include:

- A minimum 1% royalty payable on all production
- Royalty on production equivalent to 25% of net project revenues after the developer has recovered all project costs, including research and development costs, and a return allowance (after “payout”)
- The return allowance is set at the government of Canada Long-Term Bond Rate
- All projects cash costs including capital, operating, and research and development are 100% deductible in the year incurred
- No gross up of operating and capital costs
- No gas royalty waivers

Source: (Alberta Department of Energy: “Alberta's Oil Sands: Update on the Generic Royalty
According to the government of Alberta, the main purpose of a consistent royalty regime for oil sands was to provide an equal footing for better competition. In this case, that would mean that rules were created that would apply to all members, and would thus give future investors a clearer idea of future earnings and costs.

Under the previous royalty system, each company had negotiated an individual agreement with the government, or Crown. For example, producers were subject to their own agreement. This made sense in the early stages of the sector, according to Alberta’s Department of Energy, when each producer felt their project to be different. Also, regulators were inexperienced with the oil sands, as were the producers to some extent, so the agreements might have been based on previous agreements with conventional oil producers. As the regulators learned more about the process, as did the producers, and as the industry entered a new stage of maturity, it made sense to make changes to the regime.

While a more consistent regime is advantageous to the members to all stakeholders (cost savings on bureaucracies and information sharing, as well as future cost forecasting), not everyone was happy with Alberta's royalty regime. Some criticized it for being too lenient (See “Giving Away the Alberta Advantage”), citing that Alberta's royalties were far too generous when compared with Norway and Alaska. In light of the recent events on the global world market, and oil trading consistently around and above $50US/bbl, many have suggested that Alberta's government should increase its royalty rates to reflect this new reality. Seeing that this $50 barrel is a recent event, and that the price of oil was as much as $30 less only a few years ago may be the reason that the government is reluctant to change their royalty strategy at this juncture. Such changes might lead companies to become reluctant in their expansion plans as constant changes would lead to an inability to forecast earnings in future years, as well as create a distaste for investment in Alberta, as constant royalty regime change could lead to a feeling of instability in the marketplace.
The main part of the oil sands royalty is based on 25% of net revenues of the project after payout. Through this feature Alberta is sharing risk, and is participating with the developer whose return is linked to the project's success. Only when a developer's cumulative project revenues exceed cumulative costs, including a return on investment equal to the long-term bond rate, does Alberta participate in a significant royalty. (Alberta Department of Energy: “Alberta's Oil Sands: Update on the Generic Royalty Regime.”)

This method was chosen to account for the high cost, and high-risk nature of the oil sands. At the time, oil sands companies faced higher barriers to development than other types of petroleum producers. With oil trading at a low relative to today, it did not seem appropriate for the government to add a significant production based royalty to the companies. Such an approach seemed to be too large a burden. The Parkland Institute has argued the opposite, saying that the government has been too lenient on conventional oil and gas producers, citing higher royalties in Alaska and Norway. However, due to the high risk and capital cost of investment, as well as the uncertainty of those numbers, it did not attack too greatly into Alberta’s Oil sands policy. One should point out that the oil sands do have lower exploration costs, and that the resource boundaries can be reasonably assumed, as opposed to more conventional oil. This along with the decreasing costs may lead further credence to the Parkland Institute’s argument into the future.
Country risk

Given the increasing global marketplace, and the finite amount of capital, there appears to be a growing consciousness among governments that they are becoming more and more involved in competition for investment. Stories abound about governments giving grants and subsidies to corporations to locate their businesses in a specific zone. Take Ontario and its subsidies to new car manufacturing plants or Canada to their generous tax breaks for movie companies to film north of the Canadian/American border. Though somewhat different, the same type of system exists in the mining and oil sector. Although not as mobile or easily distributed like some businesses, mining and oil companies do have choices on where they can invest. Although they can't move an ore body or resource to a more desired location, they do have the power to choose the areas where they want to explore and develop their resources. Alberta is no different from other governments in that it has to compete with other governments to get corporations to invest in the province.

Although many would like to believe that there is no limit to the depth of an energy firm's pockets, the truth is that energy firms are like every other consumer and weigh many factors before investing in a certain climate. Some of those factors include political stability, type of ore body, tax structure, government etc. In the same way that Ontario provides subsidies to car manufacturers, Alberta's royalty regime acts as a subsidy for resource companies to invest in the province. According to the Fraser Institute Alberta is one of the highest ranked places in the world in terms of political stability, regulation consistency, etc., yet except recently, investments in Alberta's oil sands region was slow if not stagnant. Corporations had found reason to invest in other places even though these places might have been more politically unstable. According to the Fraser Institute, states such as Venezuela scored much lower on the scale of political instability, regulation consistency, etc., yet has found investment from companies such as Exxon. The threat of global competition is real. What does this say about Alberta? It indicates that investors are or at least were unwilling to invest in the cost heavy development of Alberta's oil sands. Therefore Alberta must be willing to provide incentive to corporations to invest their capital in the province. The royalty regime put forth in 1996 is such an
incentive. $30 billion was invested in Alberta from 1994 to 2003. $80 billion more has been announced by industry for the period 2004-2020.

**Investment**

*Since the announcement of the generic oil sands royalty regime in 1995, industry has already announced plans to invest an additional $19 billion in the oil sands over the next 8 years.*

This saying was taken from Alberta Department of Energy's document “Alberta's Oil Sands: Update on the Generic Royalty Regime.” The $19 billion figure does not represent recent additional investment from CNRL ($10 billion), UTS and Exxon Mobil. This investment also has to take into context the oil price of the time, which was at approximately $15/bbl.

**Future Investment over Current Profits?**

Is this the only trade off? Future investment over current profits? If that were the case, then it would be a simple IRR calculation to determine the future profits of the expansion versus the lost royalties today. While accounting for certain assumptions and investigating Syncrude's UE-1 project, we can see that the government will not recover the equivalent amount of royalties.

Using Syncrude's UE-1 project as an example.

**Estimated costs and assumptions**

- **Project Capital Cost:** $7,800,000,000
- **Production under no expansion:** 87.5 Mbbls/year
- **Production after expansion:** 122 Mbbls/year
- **NetBack per barrel:** $33.28
- **Canada Long Term Bond Rate:** 4.36%

In Nominal Dollars, Syncrude would have cumulatively paid more in royalties under no expansion until approximately the 8th year.
At a discount rate equal to the Canada Long Term Bond Rate, Alberta, in the long run (ie 10 years) is still better off giving Syncrude the incentive to expand.

At a 10% discount rate, the royalties Alberta receives from a non-expanded Syncrude are higher than those from a Syncrude that has expanded. This is for a 10 year period. Beyond that, the expanded project would eventually surpass a Syncrude that didn’t expand.

As one can see, at netbacks of $33/bbl, present gains are substituted for future ones. Even at a discount rate equivalent to the Bank of Canada Long Term Bond Rate, the expansion scenario will generate more revenue for the province in the long run. However, at a 10% discount rate, over a ten year period, the province would be better off not allowing the expansion to occur, or would be better off with a different royalty regime. The question then is at what discount rate does it seem appropriate for Alberta to base its royalty regime. One would think that an investment at a 10% yield over 10 years is acceptable, considering that the investment and monies will stay in Alberta.

These results seem to favour the royalty rate of 1% for capital investment as an acceptable trade off to the 25% royalty rate. However, one must take into account the sensitivity of the assumptions. For
example, changes to the netback/production and capital investment would drastically alter the conclusions proposed in this report. More specifically the revenue to capital investment ratio will drastically alter the results. Obviously if a company is profiting less, the longer it will take to pay back its capital investment and thus continue to pay the 1% royalty rate.

However, it would be short sighted to look at Syncrude and Syncrude alone as a measure of Alberta’s royalty regime. Although it serves as an example, ignoring the growth of the industry as of late would leave this investigation incomplete.

**Growth of Industry and Capital Projects**

There has been an unprecedented growth in Alberta’s oil sands region. As the graph shows, the amount of commitment to bitumen production has grown tremendously.

To assume that this is purely the result of Alberta’s more streamlined royalty regime would be foolish, but it did play a part. With the increase in oil prices as of late, and a new global realization that there is a strong probability that they will remain high, more and more investment has been taking place. The largest spike in production seems to take place between 2006 and 2010, which seems to indicate that the large oil price as of late (and the confidence that it will stay high) has had more to do with the increase in attention to Alberta’s oil sands, than did the change to the Alberta Oil Sands Royalty Regime.

To try and account for the increase in oil price, one way to look at the increased investment as a result
of royalty regime changes would be to direct attention to the increase in surface mining activity vs in-situ production projects. Since surface mining projects are much more capital intensive, companies have more to gain from the change in royalty regime. Starting with 2004 as a baseline, forecasted capital costs and increases to production were used to calculate potential royalties for Alberta at $10/bbl, $20/bbl and $30 bbl profit. The results were as follows:

<table>
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<tr>
<th>Year</th>
<th>Cum. Royalty Income ($Billions)</th>
<th>Expansion</th>
<th>No Expansion</th>
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<tr>
<td>1</td>
<td>1</td>
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At $10/bbl profit, expansion is favoured over no expansion, increasing Alberta’s royalty revenue by more than $4 billion over 10 years.

At $20/bbl profit, expansion is favoured, as it would increase Alberta’s revenue by more than $6 billion over 10 years.
At $30/bbl profit, capital investment is paid off much more quickly, and Alberta more quickly sees the benefit of its investment in the oil sands.


In every case, at a 10% Discount Rate, Expansion is favoured in the long run. Even at $10/bbl profit, the operating royalties of producing companies is enough to offset the initial lag in royalty payment from developing operations. Since most projects have an expected life of +30 years at current production rates, it is advantageous to Alberta to allow the current royalty regime to continue. Syncrude has reported that its decision to expand its operations was in part due to the new royalty regime, however this was done when oil was trading at less than $20/bbl. However it was due to the expansion at Syncrude and Suncor, that allowed other corporations to better assess the costs of expanding their operation and served as a benchmark on which to measure success. Even accounting for the $50/bbl price of oil, Alberta’s royalty regime may have directly or indirectly advertised the capability of developing the oil sands, which has led to the current increased investment.

**Personal Income Tax Revenues**

Syncrude reported that its UE-1 construction project produced 23,000 person years in direct construction employment. It also reported that it produced 100,000 person years of employment directly and indirectly.

Looking at data in the construction industry in the wood buffalo region, wages fluctuate between $25/hr to $50/hr. Many of these occupations include journeymen, electricians, foremen, labourers etc. Because one cannot assume to know the distribution of income that all the employees made on the construction of the UE-1 project, we’ll have to guess. Because foremen typically earn the higher wage
and labourers in the lower range of wages, and the fact that there are more labourers than foremen, it may be safe to assume that the wage is $30/hr. It is most likely higher than this, but this will serve as an adequate wage.

Alberta currently offers approximately $14 k in tax credits and has a flat tax rate of 10%. Looking at the data, we can estimate the addition to Alberta’s taxes as the multiplication of the person years to the wage, multiplied by the tax rate. So at 10% of $30/hr for 23,000 person years, Alberta would stand to generate 138 million in extra tax dollars. However, this is flawed as we have not taken into account the $14 k in tax credits as well as other tax breaks that are available to employees in Alberta, such as RRSP additions, Northern Living Allowance etc. But suppose this $138 million is correct. Is it sufficient to account for the lost royalties in the short term? The quick answer is no, as the royalties paid out at 1% of net revenue vs. 25% account for over a billion dollars in royalty income. However, a more objective approach would be to divide Alberta’s personal income tax revenue by the amount of people employed in Alberta. This is still flawed because one should account for part time employees as well as full time employees. There is also the notion that workers working up and around Fort McMurray probably make more money on the average. However, this methodology will be used. Using this methodology, in 2004, every employed person on average added $2642.58 to Alberta’s personal tax income. Using this average, by multiplying the person years employed at Syncrude, we find that only $60.9 million is generated in extra personal income tax for the province.

Using the statistic that 100,000 person years of employment directly and indirectly, it would be expected that $264.2 million in personal income tax is generated in the province, assuming all of this revenue stays in the province. Since only 10% of the economic contribution leaves the province, it may be safe to assume that the Syncrude project added $230 million in personal income tax revenue to the government of Alberta.

Since over the two years of production at current oil prices, Syncrude would have paid an additional $1.4 billion in royalties, it is hard to reason that the increases in personal income tax offsets the lost royalties, as was the objective of the outset of this report to prove.
In 2004, the procurement of goods and services for Syncrude’s project was $3.388 billion. If we assume that again, 10% of this income left the province, and that each company producing these goods and services made priced their products with a 15% return, then under Alberta’s corporate tax regime, the province could expect to generate an extra $52.59 million dollars in corporate tax revenue, not nearly enough to account for the lost royalties.

All this data was calculated at current profit levels. What if a profit margin of $10/bbl was looked at? All of a sudden, the difference between a 25% royalty rate and a 1% royalty rate is only $423 million over two years. At this profit level, which would have been expected only a few years ago, the revenue generated through taxes is much closer to that lost from the decrease in royalties. Actually at a profit level of approximately $8.50/bbl, the benefits of income taxes offset the decrease in royalty revenues. Anything above that, eclipses this equality, and at current profit levels, by a large amount.

**GDP**

Alberta's GDP is the strongest in Canada and has continued to outgrow the rest of the provinces. *In 1990, Alberta and Ontario's GDP per capita were, respectively, 117% and 112% of the national level. By 2003, Alberta's GDP per capita was 140% of the national level, while Ontario's had dropped to just 105%.*

Currently Alberta's GDP per capita is the highest in the country and continues to move farther away from the rest of the provinces. Accounting for much of this GDP growth is the increase in Natural Gas prices, which has steadily improved the Government's royalty incomes. However, the boom in the Oil Sands should not be discounted either. The current natural gas revenues are partially paying for the construction of the oil sands projects since it is the royalties being generated from natural gas resources that accounts for approximately 1/5th of Alberta’s budget revenue. When more and more oil sands companies enter the 25% royalty payment regime, this revenue will complement rising NG royalties and replace depleting NG and conventional oil stocks.

As GDP is an indicator of economic wealth, it would suggest that Alberta is fast outpacing the rest of the country. In truth Alberta’s real GDP per capita is far outpacing the two largest populations in
Canada, Ontario and Quebec.

Source: Stats Quebec

Alberta’s Real GDP per Capita starting increasing again in 2002, close to the time when the Oil Sands expansion started to increase. Part of this increased expansion is due to the incentives provided by Alberta’s royalty regime. As Real GDP per capita continues to increase, Alberta will continue to be able to provide low cost incentive to producers, and with increased royalties in the future, will be able to offer lower taxes to its citizens.

Amidst all this, the multiplier effect of direct investment must not be ignored. As companies like Syncrude and Suncor continue to expand, and with more companies proposing to invest in the province, the GDP will multiply due to increased spending power of the public and further investment by the government from increased royalties.

The multiplier effect must be brought into effect. For every dollar invested, there may be assumed a multiplied effect of 3. So an 8 billion dollar investment by Syncrude would have a 24 billion dollar effect on GDP. Again, assuming a multiplier effect of 3, the 80 billion dollar investment mentioned earlier, will contribute to a 240 billion effect on GDP. The multiplier effect of 3 is assumed in this scenario.
Unemployment

Alberta is currently the leading province in employment rates. From the figure taken below, it can be seen that the Alberta unemployment rate fell well before 1996/1997 when the oil sands royalty regime changed, so it must be concluded that the change is a result of other circumstances. In May 2002, the unemployment rate stood just above 6%. As of March 2005, Alberta’s unemployment rate was 3.5% This low rate is due very much to increases in investment in the oil sands. So, the direct investment in oil sands has had an effect on the reduction of unemployment, in spite of the fact that Alberta has a positive net population migration into the province. These effects are difficult to measure, but are considered positive, so Alberta’s royalty regime has participated in lowering the unemployment rate in the province. Again, though difficult to measure, it is a positive benefit and should not be discounted when weighing the economic benefit of the regime.

The increase in the permanent workforce has not been taken into account as of yet. If we consider that Syncrude will hire 500 more permanent employees, CNRL is expecting 3000 employees, and Imperial (Kearl Lake) the same, then these along with the other projects will account for approximately 15,000 more permanent jobs at least. This does not include contractors or other consultants and specialists. At the assumed personal income tax per employee estimated earlier, we see an increase in tax revenue to $40 million every year.

Changes to be made?

As The Parkland Institute reported, Alberta has a much lower royalty rate than other states such as Norway or Alaska. The Parkland Institute suggested that the government should adopt a system that would allow companies to earn a certain rate of return while the government received the rest for the use of its resource. But this method is inefficient and prone to over reporting of costs and misuses of capital. This is also not in line with the direction that Alberta’s fiscal policy is heading. Given that the oil price stays at the high levels currently being experienced, and that companies continue to invest in the oil sands, it would make sense for the government to increase its royalty rates, so as to participate in a higher oil price as well as reduce the risk that it currently accepts on behalf of the producer.
Conclusion

Economics is above all a study of measurement, and in this particular case, a measurement of incentives. Nothing is done without incentives. What is the government’s incentive in having a royalty regime that allows company’s to produce and remove the province’s resources at no cost? It was shown that Alberta’s story is very much one of short term pain for long term gain. By allowing corporations the ability to produce while paying virtually no royalties, the government has opened the door for massive investment. In the long run, Alberta’s royalty regime is economically sound and, if assumed to be the main factor for the increased investment, is a smart investment. Although, it can be argued that in a world of $50 oil, these incentives are hardly necessary, and the royalties should be increased, Alberta may want to exercise caution in changing its royalty regime as the price of oil is volatile, and constant changes to the royalty regime may stifle investment in the future. After all, it was shown that at lower profit levels, the royalty regime will still generate revenue in the long run, plus compensate the loss of royalties with increased tax revenue in the short run. However, once investment and new capital growth have stabilized, the government may want to revisit its royalty regime. As a very wise professor at the University of Toronto once said, “Mines are where you find them.” These corporations won’t be able to move their deposits, but they won’t stay forever and when the oil dries up, the public will question whether the government really did utilize its resources to their greatest utility.
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