Independent Review - Tax and Royalty Benchmark: Mining in the Northwest Territories

Submitted to:

Department of Industry, Tourism and Investment

Government of the Northwest Territories

31 March 2020

Submitted by:

Michael Doggett, PhD

Beach Meadows Resources Inc.

Review Content and Structure

This review focuses on the methodology, empirical results and conclusions presented in the final report **Tax and Royalty Benchmark: Mining in the Northwest Territories** prepared by PWC and presented to the Government of the Northwest Territories (GNWT) in March 2020. The review begins with general impressions and comments on the overall report, followed by a more detailed systematic critique of the individual sections and components, and ends with concluding comments.

General Overview

The authors of the PWC report provide a thorough examination of the competitive position of the NWT in terms of overall tax burden for selected mine models and comparative jurisdictions. Their report meets the Objective (section 5) and Scope of Work (section 6) outlined in the Request for Proposals (Event ID 0000003040) posted by the GNWT for this study.

The jurisdictions chosen for evaluation and comparison, although partially pre-determined to mirror the previous (2008) competitive tax study ("Two Ducks Report"), are appropriate for the deposit models and assumptions used in the study.

The approach of first analyzing fixed deposit models across various jurisdictions followed by the consideration of variable models with cost structures specific to each jurisdiction adds an extra level of detail to the evaluation that was not present in the Two Ducks Report.

The models developed in The Two Ducks report and subsequently reused in the PWC report could have been more economically robust in order to better mesh with minimum corporate investment criteria. Having said that, the competitive ranking of jurisdictions and overall conclusions of either study would not change with modified models.

The addition of indirect taxes to the evaluation further augments the findings by fully capturing the tax burden in the various jurisdictions. While these values vary considerably across the dataset of mining jurisdictions, it is highly useful to see them

enumerated by type of tax and jurisdiction. The addition of these extra charges to the original models developed in the Two Ducks Report negatively impacts the overall economic returns particularly in the low profitability scenarios.

The appendices and summaries of jurisdictional tax systems and the changes that have occurred since the Two Ducks Report in 2008 are clear, succinct and accurate. The presence of this material provides an extra level of confidence in the models and empirical results as well as a valuable resource for any future analysis.

Presentation of results for various tax components in reference to the median value of the distribution is useful in considering the broader competitive nature of the mining sector. A significant number of jurisdictions is shown to fall within 10% of the median value for most tax components. Thus, the distribution can be described with respect to a few outliers at either end bracketing more comparable values for most of the jurisdictions. Although not specifically requested in the RFP, the analysis of this distribution could easily be enhanced to provide additional metrics such as quartiles and standard deviation.

The use of average effective tax rates to illustrate the proportion of underlying value captured by government and industry is a good tool for assessing the fair return on mine development. Fair returns must balance the need for government to collect taxes and royalties and the incentive required for companies to assume the risks associated with capital-intensive mining projects. The authors correctly decline to specifically define what constitutes a fair return but show that the NWT collects less tax than two-thirds of competing jurisdictions under most scenarios evaluated under Phase 1 and Phase 2. They emphasize that it is essential for the NWT to remain competitive to sustain the economic contribution of mining which at 22% of gross domestic product (GDP) is higher than all but one of the other 20 jurisdictions in the study.

The conclusions reached are logical and supported by the findings presented in the study. Most comparative jurisdictions have made changes to their income or mining tax systems since the time of the Two Ducks Report. However, with respect to overall tax burden and most specific tax components, the NWT remains firmly in the large middle

grouping of comparative jurisdictions. For Phase 1 and Phase 2 results, the NWT is usually within the bottom third to bottom half of the distribution with respect to taxes collected.

The report gets to the heart of the competitive challenges faced by the mining sector in the NWT in Phase 3 of the study. Increased capital and operating costs associated with remote conditions in the NWT result in lower returns for both government and companies and/or the necessity for higher quality deposits. The authors rightly conclude that these underlying locational and infrastructure challenges cannot be overcome solely by altering mining tax policy.

Section by Section Review

Phase 1

Methodology

The procedure and models used in Phase 1 of the report mimicked those used in the 2008 Two Ducks Report. Common diamond and base metal models were assessed across jurisdictions with a range of tax and royalty structures and rates. Results were calculated at three scenarios designed to produce 10%, 15%, and 20% returns on investment on a pre-tax basis relative to the assumed 10% cost of capital.

As noted in the General Overview and acknowledged by the authors of the PWC study, it would have been preferable to have higher returns for the base case models. Maintaining continuity between the two studies was deemed to override any benefits associated with more robust models. In any case, the results and conclusions of the study would, in all likelihood, not be altered in any significant way. The authors acknowledge these shortcomings in the original and updated models but do not address them as this was not part of the defined scope of work.

Results

PWC has carried out a thorough analysis and discussion of results. Their report illustrates that most jurisdictions have made modifications to their tax and royalty systems since the 2008 Two Ducks Report was completed. The amount of tax and royalty collected relative to the underlying pre-tax value has gone up in some jurisdictions and

down in others. The key finding is that the relative position of the NWT with respect to competitive position and fair return has not changed in any significant way during the past dozen years. It sits at about the one third mark of the 21 jurisdictions analyzed in terms of taxes and royalties collected.

In carrying out the comparisons with the Two Ducks Report, PWC reinterpreted the original tax models for several jurisdictions resulting in modification of their tax and royalty payments. While disconcerting that errors were detected, it is the opinion of this reviewer that the conclusions of the original Two Ducks Report remain valid with only minor changing of competitive position among competing jurisdictions. The competitive position of the NWT – the prime outcome of the study – remains unchanged. Similarly, the conclusions drawn in the PWC study on the basis of comparison with the Two Ducks Report remain valid.

Phase 2

Methodology

The inclusion of four indirect taxes – property taxes, fuel taxes, payroll taxes, and carbon taxes – represents a significant contribution to the understanding of overall taxation levels in the mining sector.

As the authors point out, these taxes are primarily a function of the size of operation and will not vary with profitability. For the purposes of the PWC study, therefore, indirect charges represent fixed costs - similar to operating costs - across the three profitability scenarios for the diamond and base metal models. As a result, these fixed costs will have a relatively larger economic impact on the lower profitability scenarios. From the perspective of building on Phase 1 methodology with the inclusion of indirect taxes, however, the shortcomings of the underlying models are exacerbated. The assumption is made that indirect taxes were ignored in the Two Ducks Report. Because these taxes are treated as extra operating costs in the PWC model, the underlying profitability of the models before the application of income and mining taxes drops below the original pre-tax threshold returns of 10%, 15% and 20% for the low, medium and high return cases, respectively. As pointed out in the Phase 1 review above, these

models were already below the investment criteria thresholds of most mining companies.

Results

Individual indirect taxes as well as the aggregate impact are shown to vary significantly across the jurisdictions analyzed. The NWT falls in the bottom third to half of jurisdictions with respect to indirect taxes collected. With respect to total tax position, the competitive position of the NWT improves relative to competing jurisdictions with the inclusion of indirect taxes. The level of detailed information compiled and tabulated to allow the inclusion of indirect taxes in the study is impressive.

Phase 3

Methodology

As recognition of the inherent cost differences in building and operating mines in various jurisdictions, Phase 3 methodology relaxes the key assumption of the models used in Phase 1 and Phase 2 that the underlying pre-tax return is the same everywhere. The authors draw on costing information from reliable sources and make reasonable assumptions to model base metal and diamond cases where costs reflect locational aspects across the seven jurisdictions assessed. They provide detailed breakdowns and discussion of assumptions on specific cost inputs to support their analysis. Due to different pre-tax values in each jurisdiction, the authors change their evaluation focus from tax amounts collected to an analysis of overall costs including all direct and indirect taxes.

The jurisdictions evaluated in Phase 3 have primarily profit-based taxes meaning that as costs increase, the base for tax and royalty determination and the resulting tax and royalty payments will decrease. Therefore, higher costs in jurisdictions such as the NWT are shown to be partially offset by lower tax payments. Nonetheless, returns to investors are lower and, especially in the case of the base metal model used in the analysis, the project would not be sufficiently robust to entice investment under even high price scenarios.

Results

As anticipated, pre-tax values of the deposit models are significantly lower in the remote northern jurisdictions of NWT and Alaska than for the others. Because Alaska collects fewer taxes than NWT, the overall cost burden including taxes is higher in the NWT making it the highest in all jurisdictions for both diamond and base metal cases. The authors point out that the overall cost difference between the NWT and other jurisdictions is lower than the differences of costs before taxes. Again, this would be anticipated given that income taxes are profit-based and mining royalty rates are both profit-based and graduated in the NWT.

Fair Return

Fair return is discussed from the perspective of taxes collected/paid relative to economic measures of the projects prior to collection of taxes. In Phase 1 and Phase 2, fair return is measured as the discounted taxes paid/collected relative to the pre-tax net present value (NPV) using a 10% cost of capital. From a company perspective, the taxes paid divided by the pre-tax NPV represents the average effective tax rate. The authors use this metric in the comparison of the NWT to other jurisdictions. As the pre-tax NPV is the same in all cases in Phase 1 and Phase 2, the competitive position for each jurisdiction is the same whether measuring taxes paid or effective rate of taxation. The authors have addressed the question – all things being equal where do I get to keep the largest share of the total pre-tax value of the project?

In the Phase 3 analysis, all things are not equal because the models have been adjusted to reflect differential capital and operating costs by jurisdiction. Therefore, the underlying pre-tax net value is different in each jurisdiction. Regardless of these differences, the effective tax rate remains a legitimate comparative metric as the ratio of taxes to pre-tax value has meaning regardless of whether the pre-tax value varies across jurisdictions. The authors show the effective tax rate to provide continuity with Phase 1 and Phase 2 but also include a second fair return metric assessing taxes paid relative to overall sales revenue generated. The intention seemed to be to create a metric that once again had a constant value – in this case sales revenue. Although this

metric provides an additional competitive ranking tool, in my experience it is not one that would be used by companies in making investment decisions. Furthermore, the revenues in the base metal models may not be constant as no consideration is given to differences in downstream costs of transporting and treating concentrates.

Conclusions

The PWC report, "Tax and Royalty Benchmark: Mining in the Northwest Territories", represents an important step forward for the GNWT in understanding its competitive position for investment in the sector making the largest contribution to the economy of the NWT.

Notwithstanding several computational errors and unnecessarily low profitability in the original Two Ducks models, the PWC update reconfirms the results of the 2008 work. The NWT continues to fall in the lower third of competing jurisdictions in terms of mining royalties and overall taxation payments.

The current study makes three significant additional contributions:

1. Systematically evaluating the impact of indirect taxes on mining projects. Again, the NWT is strongly competitive relative to peer jurisdictions.
2. Capturing the underlying cost differentials for projects in different jurisdictions. Here, the NWT is shown to be at a major disadvantage. While this result is fully anticipated, the detailed approach to compiling comparative cost data is valuable.
3. Providing a better framework for the discussion of fair return on mines developed in the NWT.

Although PWC was not mandated to provide policy recommendations to the GNWT, the report gets to the heart of the competitive challenge faced by the mining sector in the NWT - higher capital and operating costs associated with remote locations. The authors rightly conclude that this challenge cannot be met solely through mining tax and royalty policy but must consider broader strategic initiatives related to infrastructure and

technology while maintaining a fair return to investing companies and to the people of the NWT.