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economic theory and  
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June 2010

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## Executive summary

The Australian Government has proposed a new resource super profits tax (RSPT) on the Australian mining industry.<sup>3</sup> The proposal, which represents a significant tax increase on the Australian mining industry, if implemented as proposed, can be expected in our opinion to have an adverse effect on Australian mining employment, mining investment, and the Australian economy.

- ▶ The proposed RSPT could result in many new Australian mining investment possibilities being deferred or curtailed, resulting in fewer jobs, reduced investment, and lower personal income tax revenue from workers both in the mining industry and in associated industries.
- ▶ The proposal would significantly increase the average tax rate applicable to mining activities in Australia, reducing the attractiveness of Australia for mining investment relative to other “mining” geographies.
- ▶ The proposal could raise the cost of capital required for both mining and non-mining Australian investments due to the increased political (sovereign) risk facing investors in Australian businesses, thereby reducing investment spending in Australia.
- ▶ The proposal can be expected to reduce the valuation of existing Australian mining companies resulting in lower personal income tax collections from capital gains and other taxes. Lower valuations of mining shares could also reduce investors’ portfolio values.

The proposal would also have the unintended consequence of increasing the volatility of Australian tax revenue. RSPT revenue would increase during high commodity price periods, but could be zero for extended periods during low commodity price periods.

Before making such a significant change, Australian policymakers and the public need additional analysis of the RSPT proposal to understand the potential policy risks. The Government’s modeler performed sensitivity analysis of business capital, but, we understand, never undertook sensitivity analysis of their key assumption that Australian mining activity and investment capital was completely immobile.

Given the flawed theory and application of a tax on “super profits” and the unrealistic assumption about the global mining industry (referred to above), additional sensitivity analysis is required. This should take into account both the short-run and long-run effects of the proposal and the reality of mobile mining investments.

The economic analysis relied on by the Government of the RSPT proposal concludes that introducing the RSPT “has no economic costs”<sup>4</sup>, making the assumption that “Because natural resources are location specific, these resource rents can be taxed without distorting economic activity.” The analysis claims that Australian mining will increase 6.6% in the long-run as a result of the proposed RSPT, the credit for state resource royalties and the two percentage point reduction in the corporate income tax rate.

We believe the proposed RSPT and the economic analysis rest on a flawed theory and application of “super profits” taxation and an unrealistic assumption about the immobility of mining investment.

### **A flawed theory and application of super profits taxation underlying the RSPT proposal**

Academic economists have argued that business profits can be separated into “normal” profits and “super-normal profits”. “Normal” profits are the minimum return necessary for a competitive firm to make their last dollar of investment. Thus, the conclusion is that taxing “super-normal” profits would have no adverse economic effects.

- ▶ The theory implies that “super-normal profits” could be taxed at 100% without any adverse economic effects.
- ▶ The theory could apply to other Australian businesses, not just resource industries.
- ▶ The theory assumes that companies don’t have alternative investment opportunities in other countries, if their Australian tax is increased. Australia accounted for only 13% of global mining exploration in 2009, so there are many alternative mining investment geographies.
- ▶ The theory assumes “normal profits” can be measured and separated from “super profits”. The theory argues that this separation is possible by providing the equivalent of 100% write-off of capital investment. Academic studies define “normal” profits as the risk-free return, with a government bond rate as a proxy. Used in this context, the government bond rate does not reflect nor compensate for the specific risks associated with investing in mining projects in Australia. Nor does it reflect each company’s specific cost of capital.

Businesses don’t consider a government bond rate as the hurdle rate for their long-term investments in risky projects, and different companies have different hurdle rates. This assumption is at odds with standard investment practice which demands that investments deliver returns commensurate both with the investors’ cost of capital and the risks associated with the investment.

### **An unrealistic key assumption about complete immobility of mining activity**

A sophisticated economic model’s results are only as good as its underlying assumptions. The model used by the Government incorporated a key assumption for the RSPT analysis that mining investment is completely immobile. We do not believe that critical assumption is realistic for the 21<sup>st</sup> century global mining industry.

- ▶ The model assumes for purposes of the RSPT (but not for its analysis of royalties or the corporate income tax) that value generated by the mining industry is based simply on natural resources, without taking account of experienced mining personnel, specialized mining equipment, or risk-taking mining-savvy management.
- ▶ The model assumes there are no foreign alternatives for Australian mining investments. With alternative mining opportunities around the world, mining capital (both tangible and intangible) is not immobile.
- ▶ The model ignores short-term and medium-term economic effects.
- ▶ The model ignores the effects of the RSPT proposal on existing mining investments.
- ▶ The model assumes the long-run so the possibility of companies deferring mining investment is not included. Deferral impacts could be significant and would be likely to result in lower Australian employment, investment and projected tax collections from the RSPT.
- ▶ The model assumes the RSPT can be implemented without affecting business investment decisions. The RSPT, as designed, would reduce “normal” profits and total profits from Australian mining, and thus is more than likely to adversely affect investment and employment in the Australian economy.

### **The need for additional analysis**

Policymakers need to understand the full potential impact of the imposition of a RSPT. Additional analysis is needed to examine:

- ▶ The short-term and medium-term economic and fiscal effects of the proposal
- ▶ The relative taxation of mining activity across countries
- ▶ The sensitivity of the model results to the mobility of mining activity between countries in both the short-run and the long-run
- ▶ The sensitivity of the model results to the mobility of mining activity over time
- ▶ The behavioral effects of companies to the specific implementation and design of the proposed “super profits” tax
- ▶ The volatility of the RSPT revenue over commodity price cycles
- ▶ The effect of reduced mining company valuations on other tax collections and investors
- ▶ The impact of the perceived increase in sovereign risk on future investment in Australia

Introduction of a new, untried tax on a critical sector of the Australian economy merits careful consideration and a complete analysis of the economic and fiscal effects.

## **A critique of the theory and modeling underlying the Australian resource super profits tax proposal**

The Australian Government has proposed a new resource super profits tax (RSPT) on the Australian mining industry. The RSPT would be a new federal 40% tax on a modified income tax base, in addition to the existing corporate income tax, with a tax credit for current levels of state mining royalties. Revenue from the proposed tax would be used to lower the corporate income tax rate from 30% to 28%, and finance changes to the superannuation tax rules and provide for a State Infrastructure Fund.

The proposal would significantly increase taxes on the Australian mining industry, and if implemented as proposed can be expected to have an adverse effect on Australian mining employment, mining investment, and the Australian economy. The proposal would significantly increase the average tax rate applicable to mining activities in Australia, reducing the attractiveness of Australia for mining investment relative to other “mining” geographies. The proposed RSPT could result in many new Australian mining investment possibilities being deferred or curtailed, resulting in fewer jobs, reduced investment, and lower personal income tax revenue from workers both in the mining industry and in associated industries.

The proposal could raise the cost of capital required for both mining and non-mining Australian investments due to the increased political (sovereign) risk facing investors in Australian businesses, thereby reducing investment spending in Australia. The proposal can be expected to reduce the valuation of existing Australian mining companies resulting in lower personal income tax collections from capital gains and other taxes. Lower valuations could also reduce investors’ portfolio values, including those of superannuation funds and Australia’s Sovereign Wealth Fund.

The proposed RSPT would also have unintended consequences of increasing the volatility of Australian tax revenue. RSPT revenue would increase during high commodity price periods, but could be zero for extended periods during low commodity price periods.

Before making such a significant change, Australian policymakers and the public need additional analysis of the RSPT proposal to understand the potential policy risks. Based on the key assumption that Australian mining activity and investment capital was completely immobile, the Government’s modeler did not perform sensitivity analysis on the potential for mining investors to redirect investment to other jurisdictions outside of Australia. We believe this is an unrealistic assumption about the global mining industry’s ability to redirect investment to other countries. Additional sensitivity analysis including both the short-run and long-run effects of the proposal taking into account mobility of mining investment is critical to inform the policy debate.

This paper briefly describes the RSPT and the Government’s economic analysis of the proposal, then identifies flaws in the theory and application of “super profits” taxation underlying the RSPT proposal, describes the unrealistic assumptions about the immobility of mining activity, and suggests additional economic and sensitivity analysis important for policymakers’ understanding of the trade-offs and economic effects of the proposal.

## The Government's economic analysis of the RSPT

The economic analysis relied on by the Government of the RSPT proposal concludes that introducing the RSPT "has no economic costs"<sup>5</sup>, making the assumption that "Because natural resources are location specific, these resource rents can be taxed without distorting economic activity." The analysis claims that Australian mining will increase 6.6% in the long-run as a result of proposed RSPT, credit for state resource royalties and the two percentage point reduction in the corporate income tax rate.

The economic analysis is based on a sophisticated detailed economic model of the Australian economy, used to analyze the economic distortions of Australia's existing taxes, as well as the proposed RSPT. The model is a long-term equilibrium model. In the case of mining operations, the long-run could be 50 years. Fifty years is two generations of Australians. A lot can happen in the short and medium-term on the adjustment to long-run equilibrium.

The modeling has not analyzed the adjustment process for the mining industry or the Australian economy in moving to the long-run. The economic effects during transitions to the long-run are especially important when the proposed tax change applies to both existing mining operations as well as future "green-field" investments.

Model results, however, are only as good as the underlying assumptions. As described below, the economic analysis rests on a flawed theory and application of "super profits" taxation, an unrealistic key assumption about the complete immobility of mining investment in a global economy, and the absence of a complete analysis of the proposal's economic and fiscal short-run, medium-run and long-run effects.

### A flawed theory and application of super profits taxation underlying the RSPT proposal

*"The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influence, are usually the slaves of some defunct economist."*

*John Maynard Keynes, The General Theory of Employment Interest and Money, 1935*

*It has long been recognized by tax policy specialists that a tax will not impact on investment decisions if it falls on the net cash flows, since any investment behavior that maximizes the present value of cash flows after tax will also maximize the present value of before-tax cash flows. This type of tax is often referred to as a Brown tax (after American economist Carey Brown)."*

*Australian Treasury, The Resource Super Profits Tax: a fair return to the nation 2010, p. 23*

*"The RSPT will not discourage investment."*

*Australian Treasury, The Resource Super Profits Tax: a fair return to the nation 2010, p. 1*

The academic notion of separating business profits into the minimum profit necessary to undertake an investment (a “normal” profit) and any excess (“super normal” profit) is an appealing notion. The theory suggests that “super normal” profits “can be taxed at up to 100% without causing any change in behavior, providing the economist’s ideal of a non-distorting tax.”<sup>6</sup> In practice, however, significant new tax revenues without any resultant economic costs should be viewed skeptically.

Considerations of alternative tax approaches to mining and other industries in any country involves trade-offs between economic distortions and growth, fairness, administrative and compliance costs, and revenue stability. Taxes operate at many margins in households’ and businesses’ decision making. As Professor Ben Smith of the Australian National University wrote in 1999: “The comparison between alternatives should not be based on any ‘near neutrality’ presumption about the Resource Rent Tax (RRT). The alternative taxing mechanisms need to be evaluated over all of the dimensions of decision making in which they may have distorting effects.”<sup>7</sup>

While conceptually appealing, the theory of “super profits” taxation has a number of limitations and caveats. This section briefly describes those important issues and their implications.

**1) The super profits taxation theory does not take into account alternative investment opportunities in other countries with more favorable tax rules.**

The theory of “super profits” taxation argues that a “super profits” tax would not change the relative ranking of investment projects, stating that “By only taxing super profits, the RSPT will not alter the pattern of returns to resource companies. These returns form the basis upon which they assess investment options and make production decisions. The RSPT will therefore not lead to a bias against investment in otherwise viable projects or the premature closure of some projects.”<sup>8</sup>

While a profits tax would not affect the relative ranking of expected after-tax returns from potential similarly-taxed investment projects within one country, it would alter the pattern of returns across similar investment opportunities in other countries. If Australia imposes the RSPT, it would lower potential after-tax returns on Australian projects compared to potential after-tax returns on similar resource investments in Brazil, Canada, China and other countries. As multinational firms make long-term investment decisions, less capital would be allocated to new investments in Australia. Even existing Australian mining activities may be affected given the level of ongoing sustaining capital investment required to retain the cost competitiveness, reliability and life extension of existing operations. Reduced investment in existing operations resulting from the RSPT can be expected to result in some earlier closures of operations.

Table 1 shows a hypothetical ranking of seven potential investment projects, ranked by their internal rate of return before and after imposition of an RSPT. The RSPT is assumed for purposes of this illustration to reduce the internal rate of return for the Australian projects by 15-20%.<sup>9</sup> The RSPT does not change the relative ranking to each other of the three Australian projects, but does change the initial ranking of Australian projects from first, second and fifth, to second, fourth and seventh when considered against similar projects in other countries.

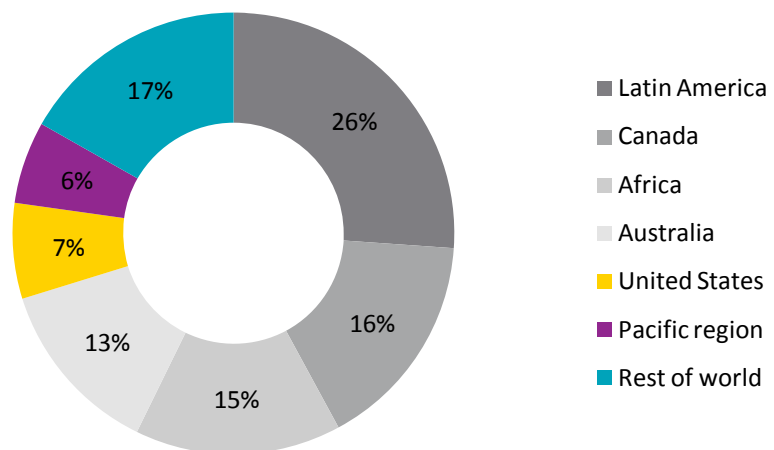
If the company's hurdle rate (minimum return necessary to make the investment) is 12.5%, without the RSPT all three of the Australian projects would be undertaken. With the RSPT, the lowest ranked Australian project would not be undertaken, since it falls below the company's hurdle rate.

Table 1. Alternative mining project rankings by after-tax rates of return with and without AU RSPT			
Ranking without AU RSPT		Ranking with AU RSPT	
Australian project #1	18.0%	Brazilian project #1	15.0%
Australian project #2	17.0%	Australian project #1	14.4%
Brazilian project #1	15.0%	Canadian project #1	14.0%
Canadian project #1	14.0%	Australian project #2	13.8%
Australian project #3	13.0%		
Company hurdle rate	12.5%	Company hurdle rate <sup>10</sup>	12.5%
Chinese project #1	12.0%	Chinese project #1	12.0%
Brazilian project #2	11.0%	Brazilian project #2	11.0%
		Australian project #3	<b>10.8%</b>

Given real world constraints on access to capital, some projects above the hurdle rate may not be undertaken, so with a RSPT, only three mining projects might be undertaken. In that case, a second Australian project may be postponed or not undertaken as a result of the RSPT.

Given the global nature of the mining industry, a substantial increase in taxes on Australian mining activity would cause companies to reevaluate the potential future of Australian mining investments. In 2009, mining exploration for base metals, diamonds and precious metals, totaled US\$7.3 billion, of which only 13% was in Australia, as shown in the figure below.

Mining exploration spend (2009) Total US\$7.29b



Source: Metals Economics Group in Exploration Review, Mining Engineering, 1 May 2010

Multinational mining operations are continuously making decisions between investments in multiple countries. The relative ranking of Australian projects vis-à-vis similar projects in other countries based on potential after-tax rates of return would be significantly affected by an Australian RSPT.

**2) The super profits taxation theory applies to the theoretical marginal (last dollar) of investment/production/extraction, not to large discrete mining investment projects.**

The impact of the RSPT on mining activity in Australia depends on the margin and time horizon being considered. For example, the Australian RSPT proposal report<sup>11</sup> includes an example in its appendix showing an existing project where the mining operation is deciding how much output to produce. The graphics show how a royalty reduces the revenue earned by the mine, and therefore lowers the level of output. In contrast, a profits tax does not affect the marginal decision of extracting an additional ton of minerals because it does not affect marginal revenue or costs. The example is illustrative of the theoretical thinking about the effects of the RSPT.

The example is correct for the limited situation of an existing mine and the decision to extract an additional ton of minerals in a single year without the need to invest any additional capital. After the investment in mining exploration and the investment in extraction-capacity infrastructure have been made, the optimal decision is to keep producing as long as revenue exceeds variable costs, ignoring substantial fixed costs and assuming no additional capital is required to sustain the operation at the current levels of volume and cost. In such a case, a new tax on close to 100% of the incremental profits would not affect the short-run marginal extraction decision. However, the 'wasting asset' nature of the mining industry is such that even existing operations require continued investment of capital to sustain output, maintain costs and reliability.

Furthermore, as explained above, the RSPT would lower the average rate of return on new capital investments in Australia and would affect the company's decisions on future investment in current operations and in new projects. The proponents of the RSPT argue that the tax is designed to avoid this disincentive effect on new or additional capital investment through deductions for capital investments equivalent to immediate expensing (100% first-year write-off). Some public finance economists argue generally that expensing of capital investment results in a zero effective marginal tax rate, and thus causes no adverse investment effects. Whether the statutory tax rate is 10% or 90%, they argue that the marginal tax rate on the marginal investment is zero, although the average tax rate on the entire project could be quite high.<sup>12</sup> In reality, the RSPT equivalent of immediate expensing would affect both the marginal tax on marginal investment and the average tax on an entire project, and thus would discourage future investment in Australian mining.

If companies making future investment decisions look at the total cost of the project relative to the expected future stream of revenue, then the average tax rate does matter and would affect new investment decisions. The Australian Government's analysis of the RSPT is inconsistent, when arguing that the RSPT will have no investment effect, and at the same time noting that average tax rates matter for cross-country tax comparisons. "Comparing resource taxation arrangements across countries is not straightforward. Meaningful comparisons should be based on effective "all in" rates (rates that include income tax as well as resource tax and royalties)."<sup>13</sup> This quote from the Australian Government is inconsistent with the modeling of the RSPT proposal.

The RSPT is expected to raise significant additional revenues (\$9 billion in FY2013-4), so clearly the effective “all in” tax rate for Australian mining projects would increase, lowering the potential after-tax returns for Australian projects relative to alternative investments in other countries.

The analysis of excess burden of existing Australian taxes for the Department of the Treasury emphasized that the inefficiency of a tax depends on the mobility and narrowness of its tax base.<sup>14</sup> We have already discussed the mobility of mining investment. With respect to tax base narrowness, in the case of the mining industry, the tax base in Australia is relatively small compared to multinational corporations’ global tax base and the mining tax base is relatively narrow compared to the overall Australian corporate tax base. A narrow tax base makes it easier for investors to shift to lower-taxed alternative investments.

**3) The theory assumes that “normal” profits can be separated from “super normal” profits, based on a risk-free rate of return, approximated by a government bond rate.**

“Resource super profits (or resource rents) are net returns that exceed a satisfactory return to investors, from the extraction and sale of resources.”<sup>15</sup> The question is, what is the minimum after-tax return necessary to undertake the investment?

The proposed RSPT attempts to provide the equivalent of 100% first-year write-off of capital investment in order to exempt the “normal” profit, and only tax “super profits.” The theory argues that immediate expensing of capital investments exempts the risk-free return, or “normal” or “satisfactory” return on the capital investment. Any return in excess of this “normal” return is defined to be part of the “super profits” tax base.

If 100% first-year write-off of capital investment is not provided, the academics argue that a government bond rate can be used to achieve the net present value equivalent of first-year write-off. Some academics believe a government bond rate represents the return which businesses require to make additional investments or that can be used to finance their investment projects.

In reality, businesses require the return from a proposed investment to exceed a hurdle rate. In each case the hurdle rate is dependent on the combination of the specific cost of capital of the business contemplating the investment and the relative risk of the investment itself.

The theory of the RSPT assumes that if the risk-free return, approximated by a government bond rate, falls for reasons unrelated to the mining industry, the mining company’s “normal” profits also decline, increasing its “super profits”, and increasing further their Australian taxes, despite the fact that their own hurdle rate may not have fallen.

Between November 1994 and December 1998, the Australian 10-year government bond rate fell from over 10.9% to 5.2%. This was shortly after the government bond rate rose from 6.6% to 10.9% in just six months, between January and June 1994.

In reality, the hurdle rate for a committed investment and for a business making long-term investments doesn’t swing from month-to-month, or even year-to-year.

As companies would not make major long-term business investment decisions using a government bond rate, then their decisions about what is a satisfactory return to investors is likely to be different than the assumptions used to design and model the RSPT proposal. Since businesses require a higher rate of return than the government bond rate, the tax base would include a portion of “normal” profits, then the RSPT would have a negative impact on mining extraction and investment, as these businesses would not make any investments which would not return at least their hurdle rate. In this case, businesses would react much differently to the RSPT than the Government or its modelers anticipate.

The long-term government bond rate is used to compensate for the delay in using net operating losses to reduce RSPT tax liabilities, and to achieve the equivalent of first-year write-off of capital investment. Again, if businesses have to finance the losses with their actual higher cost of funds, then we would not agree that the RSPT removes the new tax from capital investments. It would provide an investment disincentive.<sup>16</sup>

The RSPT uses a mechanism to provide companies with what some academics consider to be the equivalent of first-year write-off and refundability of net operating losses with a RSPT account increased annually at the government long-term bond rate. Harvard professor (and former U.S. Treasury Secretary) Lawrence Summers found that companies' valuation of depreciation deductions differed from the valuation suggested by finance and economic textbooks. The Summers' analysis of how companies value depreciation deductions suggests that companies' valuation of the future tax credits is likely to be different than the academics whose theory the Government is relying on.<sup>17</sup> Policymakers should not expect the effects of the RSPT to operate in the real world the same as the academics' theoretical world.

#### **4) The theory argues that super profits taxation can be implemented irrespective of the timing of capital recovery costs or a company's hurdle rate for investment.**

The “super profits” theory argues that “super profits” can be measured by giving the equivalent of immediate expensing of capital investment. If immediate expensing is not provided, then the theory argues that any alternative capital cost recovery method, plus interest, can be used, as long as it has the same net present value as immediate expensing. This would be true if the discount rate used by business is the same as that used in the proposal. As explained above, businesses require a higher rate of return than the government bond rate. Therefore, the proposal fails to provide the equivalent of expensing, and thus taxes some of the “normal” profit.

Another reason to believe that the Government and private sector valuations of future tax benefits are different is the Government's actual RSPT proposal. The Government has chosen to delay deductions of refunds of capital expenditure deductions, rather than allowing them when they occur.<sup>18</sup> If the Government truly believed the theory that the Government and companies should be indifferent about the timing of the RSPT liabilities and refunds, then it could address concerns by business about the potential inadequacy of the government bond rate by accelerating capital cost recovery and the refundability of losses.

#### **5) The theory assumes that “super normal” profits only come from immobile assets.**

The super profits taxation theory assumes that “super normal” profits come only from immobile factors of production. Immobile factors by definition are unable to escape high taxation.

In fact, in the mining industry, higher profitability occurs not only as a result of increases in commodity prices, but as a result of innovative production methods, economies of scale and advanced managerial talent. It is possible to earn higher levels of profitability from a similar mineral resource base due to company-specific advantages. Companies may invest less in research and development in improving mining productivity if the returns from those investments are more heavily taxed.

By assuming that mining activity is immobile, the RSTP proposal ignores not only the mobility of capital internationally, but also ignores activities relating to exploration, development, processing and extraction. While the mineral resources themselves may be immobile, the capital (financial and equipment) and the personnel with specialised mining knowledge are not immobile. High Australian effective tax rates would discourage the application of those non-mineral factors of production to the Australian mining industry. Boadway and Keen note that countries often “compete to attract some factors, such as managerial capacity, that is scarce in the aggregate but mobile between them...”<sup>19</sup>

**6) The super profits taxation theory requires that businesses are guaranteed that the tax rate will be constant for the entire life of the project, or the issue of political or sovereign risk.**

Some important caveats to the “super profits” tax theory have been dropped between the theory and its application in the modeling of the RSPT.

Bond and Devereux stress that the neutrality results require that the value of a given risky income stream is not affected by the introduction of the tax, which requires the tax rate applying to the project in the future is both known and constant. “A constant tax rate is a sine qua non for tax neutrality.”<sup>20</sup>

The Government emphasizes a “guarantee” of a tax credit for all mining expenditure under the RSPT.<sup>21</sup> “Under the RSPT, the Commonwealth will guarantee to contribute 40 percent of the investment cost (including as a cash refund in some circumstances) of a resource project.”<sup>22</sup> However, there is no guarantee of a constant tax rate applicable to projects undertaken during the RSPT. If the RSPT rate were to increase to 50 percent, the value of the credit would erode for then-existing projects, where prior expense deductions had only been taken at 40 percent. The Government’s “guaranteed” 40% also assumes the net present value is calculated using the government bond rate, not a business cost of capital.

The notion of a government guarantee in the policy area is often referred to in the context of sovereign or political risk. Businesses operate with some uncertainty about future policy rules, both tax and non-tax. However, the RSPT proposal represents a dramatic and fundamental shift from royalty taxation to “super profits” taxation of mining, applying even to existing projects. How certain can mining or other companies considering investing in Australia be about a constant tax rate for the life of their operation- necessary for neutral taxation - following the proposed application of a material change in tax regime to existing mining operations?

How much of a guarantee of certainty can mining companies have when the proposal states that “The RSPT value of losses will be refunded on a *reasonable* basis.”? (emphasis added) Will some losses be considered unreasonable because differences in the definition of the “super profits” taxed mining activity?

Uncertainty about the investment tax climate increases the cost of capital necessary for businesses to make investments in a country to compensate for the additional business risk. Significant tax changes that apply to existing investments can affect investors' perceptions about tax risk in Australia far into the future.

#### **7) The theory of super profits taxation could apply to other industries.**

Super profits taxation in the resource industry has some important policy implications for other industries. The idea of higher taxation of earnings above those minimally required to deliver the required return to investors from the activity could be applied to other industries. In fact, KPMG Econtech in their analysis of the current Australian tax system noted: "The following industries are identified as having "excess returns" that, for modelling purposes, are attributed to a fixed factor: coal, oil and gas, iron ore, non-ferrous metal ores, beer, banking, and non-bank finance."<sup>23</sup>

Boadway and Keen note that it is not only fixed factors where the super profits tax theory could apply. "In other sectors, rents may arise from fixed factors in the form of protected intellectual property rights, superior management, better locations, as well as from barriers to competition. Again, it is the sheer scale and potential persistence of such rents that marks out the resource sector."<sup>24</sup>

The Government analysis emphasizes the benefits to non-mining industries of the lower corporate income tax rate financed by the RSPT. Those benefits could be temporary in nature if the current academic idea of "super profits" taxation in addition to corporate income tax is expanded to other industries in Australia.

### **An unrealistic key assumption about complete immobility of mining activity**

*"Capital in general is highly mobile between countries, so crude oil excise and resource royalties are likely to reduce investment in the Australian mining industry."*

*"Company income tax has a high economic cost. It reduces the attractiveness of Australia as a destination for highly mobile international investment funds."*

*"Since the tax base for the RSPT will not shrink in response to the tax, activity in the mining industry will not be distorted, and there will be no economic costs associated with the RSPT."*

*"This outcome rests on the modeling assumption that the RSPT only taxes the economic rents earned from immobile factors, in this case mineral reserves. If only these rents are taxed, then the investment decisions of mining companies will not be distorted."  
KPMG Econtech, May 4, 2010, p. 3, 17 and 20.*

*"While a resource project is still in the design stage, the prospective tax base is highly sensitive to the anticipated tax regime: if investors feel it will be too onerous, they can simply not undertake the project."  
Boadway and Keen, 2009, p. 3.*

Many of the conclusions about the potential effect of the RSPT proposal rest on a detailed long-term general equilibrium model of the Australian economy.<sup>25</sup> The model used to analyze the Government's proposal includes 833 consumer products, 33 industry sectors and six factors of production. Despite all of the detail and sophistication, the model's results for the RSPT rest on one key assumption: the factors of production in the mining sector are completely immobile. We do not believe this assumption realistic in the mining industry or for the 21<sup>st</sup> century global economy.

Further analysis of the RSPT proposal is necessary for policymakers and the public to understand the importance of this assumption to the claimed model results. This section discusses four reasons why the assumption about the complete immobility of mining investment is not appropriate, at least in the short and medium term, if not the long-run.

**1) The modelling treats the Australian mining industry as if there are no alternative investment opportunities in other countries.**

The modeling of the RSPT assumes no possible shifting in the long-run of mining activity to other countries as a result of higher taxes on Australian mining activity. Given the presence of large multinational mining companies making significant investments in Australia and simultaneously in other countries, the lack of possible substitution or mobility of mining investment is unrealistic. A recent International Monetary Fund (IMF) working paper noted: "In a closed economy (taxing super-normal profits) should not distort investment, as normal profits are untaxed. In an open economy, however, in which multinationals decide on where to undertake their profitable discrete investments, the after-tax economic rent may be increasingly important."<sup>26</sup>

The economic modelers that found no economic effects of adopting the RSPT, in an earlier analysis of existing Australian taxes, discuss how resource taxes can have potential adverse effects on mining exploration, and how companies rank projects by their expected overall profits. "Resource taxes have the potential to have a distortionary effect on exploration activities. This distortion is associated with the risks involved in mineral exploration activity. When firms choose which site to explore, they have limited information on the actual nature and content of the site to be explored, and must take into account the risks of exploring in different areas. Usually, the firm will have to consider multiple exploration projects with differing expected economic rents. The firm will rank these projects based on their expected economic rents after adjusting for their risks, and choose the projects with the expected economic rent."<sup>27</sup>

The Treasury's initial analysis of the economic effects of resource taxes is correct, but their later analysis of the RSPT needs to be extended as described in the prior section, to the international environment in which many multinational mining companies currently operate.

**2) The modelling inconsistently treats mining as if it is simply immobile natural resources for purposes of analyzing the RSPT, not the investments in exploration, development and extraction-capabilities.**

Mining activity is described as being completely immobile in the analysis of the long-term economic effects of the RSPT. However, the same analysts and model treat mining as including both mobile capital and labor, in addition to immobile natural resources, for purposes of analyzing resource royalties and corporate income tax. This inconsistent treatment is not explained.

In the analysis of resource royalties, the analysis states: "The mobility of the factors producing mining output is also important for understanding the incidence of resource royalties and crude oil excise. As with company income tax, capital owners will not bear the incidence. Instead, it will be passed on to the immobile factors ... in the loss of rent income. For mining, natural resources are an important immobile factor, and bear much of the incidence. To a lesser extent, the rural land used by the mining industry also bears some of the incidence."<sup>28</sup>

The minerals in Australia are immobile, but their discovery, development and subsequent extraction is dependent on the provision of mobile capital and specialized mining personnel. The modeling of the RSPT, similar to the graphical presentation of a single existing project and the decision to extract an additional ton of minerals, ignores the prerequisites of exploration and development before any minerals are extracted. See figure below of states of mining activity.

#### Stages of mining activity



The economic modeling needs to recognize the interdependency of extraction with the prior exploration and development. Without exploration and development, there would be no Australian extraction of minerals, and no RSPT revenue or state royalties, from the projects foregone for alternative opportunities in other countries or deferred for later consideration.

### **3) The RSPT modelling to date has been only of the long-run effects, not the important short-term and medium term effects of the RSPT proposal.**

The KPMG Econtech model used by the Government for its analysis is a long-term model, so it does not provide any analysis of the economic effects during the initial years of the proposal or the medium term.

For mining projects lasting 50 years or more, and with mining exploration and development taking several years to complete, the short-term and medium term effects of the RSPT proposal could be very different than the long-term effects.

An important dimension of mobility that is missed in only modeling the long-term effects is the decision by businesses to defer or extend investments. The proposal is estimated to raise \$12 billion in additional revenue from the mining sector in its first two years. If the RSPT results in the deferral or cancellation of significant current or future exploration and development projects, reducing mining activity could result in lower individual income and GST collections immediately.

It is important to note that given the stages of mining activity, the additional \$3 billion of revenue expected in the first year and additional \$9 billion in the second year from the new RSPT will likely come from existing mining activities, rather than new activities. This compares to \$8.3 billion of state mining royalty revenues in FY 2008-9 and \$8.1 billion of mining corporate income tax receipts in FY2007-8. Thus, the RSPT is a significant, unexpected change in the Australian mining tax system, which raises uncertainty about future tax changes (sovereign risk). Given that the theory of "super profits" taxation doesn't provide any grounds for setting the rate at 40%, and could be used to justify even higher rates, investors in Australian mining companies may make adjustments for the probability of even higher Australian taxes and greater tax uncertainty.

The academic economists have a term for resource tax systems that are not neutral, and which only apply to the extraction stage. The term is a “quasi-rent” tax. Quasi-rents are rents whose existence derives from a previous outlay of sunk costs. “A resource tax system that aims to be efficient should tax full rents, not quasi-rents. This may be difficult to do if a tax is applied only at the extraction stage, since by then only successful resource discoveries will be pursued.”<sup>29</sup>

Since the RSPT during its initial years is partly a “quasi-rent” tax on existing mining investments, during the short-term it is not neutral and any short-term modeling should reflect the distortions created by the proposed new tax.

Based on the quote at the beginning of this section, the economic modelers analyzing the RSPT proposal have treated the RSPT not as a pure “rent” tax, but as a “quasi-rent” tax that only falls on minerals after they have been identified and the extraction capability has been developed. Their analysis doesn’t reflect the RSPT falling on highly mobile exploration and development investment. As Boadway and Keen note, “While a resource project is still in the design stage, the prospective tax base is highly sensitive to the anticipated tax regime: if investors feel it will be too onerous, they can simply not undertake the project.”<sup>30</sup>

**4) The model assumes that “normal” profits can accurately be separated from “super profits” and that “super profits” have no bearing on economic decisions of a firm.**

The modeling assumes that the academic theory that “super profits” can be separated from “normal” profits, and that taxing “super profits” has no economic effects. Some of the “super profits” tax would fall on the minimum necessary return to make additional investments, when done on a new project basis or even ongoing sustaining investments in existing projects.

The analysis prepared for the Government on the long-term effects of the RSPT has an important caveat not reflected in any of their sensitivity analyses - that *“while the principles of the tax are known, the implementation would also be important and needs to be taken into account in a final assessment of the reasonableness of the modelling assumption that the RSPT has no economic inefficiency cost.”*<sup>31</sup>

If the RSPT affects “normal” profits, and the tax on “super profits” has some affect on investment decisions, then the both the short-term and long-term modeling should reflect some adverse investment effects on Australian mining as a result of the proposal. While providing a federal tax credit for the existing level of state royalties would have some positive effect on mining activity, the imposition of the RSPT would have an offsetting negative effect on Australian mining that should be quantified both for its short-run and long-run effect.

## **The need for additional analysis of the RSPT**

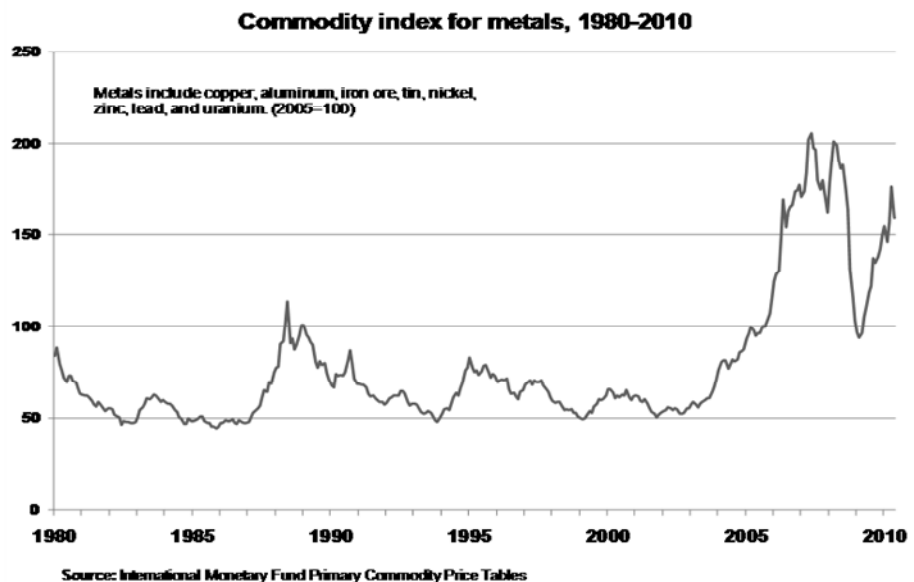
*“It should be noted that the modeled analysis is sensitive to assumptions used, particularly the degree of capital mobility. However, differing assumptions would only affect the size of the efficiency gains and not their direction. In the long run, the assumption of perfect capital mobility is likely to hold as used in the KPMG Econtech modelling.”*  
*Australian Treasury, p. 13-14*

*“The policy involves the introduction of a new broad Resource Super Profits Tax (RSPT). The modeling of this new tax is subject to greater uncertainty than the modelling of existing taxes. One reason for this is that, while the principles of the tax are known, the implementation would also be important and needs to be taken into account in a final assessment of the reasonableness of the modelling assumption that the RSPT has no economic inefficiency cost.”*

*KPMG Econtech, May 4, 2010, p. 5*

As described in the prior section, the RSPT proposal has significant theoretical and practical issues that raise serious questions about the claim of the RSPT having no economic effects on the Australian mining employment, investment and industry. Further, the economic modelling relied on by the Government in the analysis of the RSPT rests on a key assumption of zero mobility of mining activity, for which no sensitivity analysis was provided. The claimed short-term revenue from the RSPT proposal is also questionable given the expected industry responses to the new tax.

Substituting a “super profits” tax for a royalty tax regime would also increase the volatility of revenue from the industry, and may lead to large accumulated balances of future tax credits. A detailed revenue analysis of the RSPT proposal over the next ten years, and also modeled over prior commodity price cycles, would be important to enable policymakers to understand the full potential impact of the imposition of such a tax. The figure below shows the extreme volatility in metal commodity price over the past 30 years. The volatility of the RSPT revenue will mirror the volatility of commodity prices.



We recommend that additional analysis be done of the following issues:

- ▶ The short-term and medium-term economic and fiscal effects of the proposal
- ▶ The relative taxation of mining activity across countries
- ▶ The sensitivity of the model results to the mobility of mining activity between countries in both the short-run and the long-run
- ▶ The sensitivity of the model results to the mobility of mining activity over time
- ▶ The behavioral effects of companies to the specific implementation and design of the proposed “super profits” tax
- ▶ The volatility of the RSPT revenue over commodity price cycles
- ▶ The effect of reduced mining company valuations on other tax collections and investors
- ▶ The impact of the perceived increase in sovereign risk on future investment in Australia

Introduction of a new, untried tax on a critical sector of the Australian economy merits careful consideration and a complete analysis of the economic and fiscal effects.

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- <sup>3</sup> Commonwealth of Australia, *The Resource Super Profits Tax: a fair return to the nation*, May 2010, p. 9.
- <sup>4</sup> KPMG Econtech, "The Treasury: CGE Analysis of the Part of the Government's AFTSR Response, 30 April 2010 (extended 4 May 2010), p. 4.
- <sup>5</sup> *Ibid*, p. 4.
- <sup>6</sup> Boadway, Robin and Michael Keen, "Theoretical Perspectives on Resource Tax Design," Queen's Economics Department Working Paper No. 1206, 1-2009.
- <sup>7</sup> Smith, Ben, "The Impossibility of a Neutral Resource Rent Tax," *Working Papers in Economics and Econometrics* No. 380, September 1999, p. 27.
- <sup>8</sup> Commonwealth of Australia, *op. cit.*, p. 19.
- <sup>9</sup> Mineral Council of Australia/KPMG, *Potential financial impacts of the Resource Profits Tax on new mining projects in Australia*, June 1, 2010, p. 25.
- <sup>10</sup> A company's hurdle rate, its weighted average cost of capital, both debt and equity, might be affected by a proposed tax change, due to higher taxes on equity or expensing of exploration investments. It is unlikely that multinational corporations would change their global hurdle rate to reflect one country's tax change.
- <sup>11</sup> Commonwealth of Australia, *op. cit.*, p. 37-43.
- <sup>12</sup> Neubig, Tom, "Expensed Intangibles Have a Zero Effective Tax Rate...NOT!", *Tax Notes*, September 10, 2007.
- <sup>13</sup> [http://www.futuretax.gov.au/documents/attachments/10\\_Fact\\_sheet\\_Resource\\_Profit\\_Tax\\_Final.pdf](http://www.futuretax.gov.au/documents/attachments/10_Fact_sheet_Resource_Profit_Tax_Final.pdf), p. 10
- <sup>14</sup> KPMG Econtech, *CGE Analysis of the Current Australian Tax System: Final Report*, March 26, 2010, p. 2
- <sup>15</sup> Commonwealth of Australia, *op. cit.*, p. 13.
- <sup>16</sup> Garnaut, Ross, "The New Australian Resource Rent Tax," *The University of Melbourne*, May 20, 2010, p. 10
- <sup>17</sup> Summers, Lawrence H., "Investment incentives and the discounting of depreciation allowances," in *The Effects of Taxation on Capital Accumulation*, ed. by Martin Feldstein, pp. 295-304.
- <sup>18</sup> The proposal provides for 100% first year expensing of exploration investments, but delayed capital cost recovery for other mining investment.
- <sup>19</sup> Boadway and Keen, *op. cit.*, p. 56.
- <sup>20</sup> *Ibid*, p. 59.
- <sup>21</sup> Commonwealth of Australia, p. v, 13, 23 and 26.
- <sup>22</sup> *Ibid*, p. 13.
- <sup>23</sup> KPMG Econtech, March 2010, p. 36.
- <sup>24</sup> Boadway and Keen, *op. cit.*, p. 4.
- <sup>25</sup> KPMG Econtech, May report
- <sup>26</sup> Klemm, *op. cit.*, p. 3.
- <sup>27</sup> KPMG Econtech, March 2010, p. 86.
- <sup>28</sup> KPMG Econtech, March report, p. 58.
- <sup>29</sup> Boadway and Keen, *op. cit.*, p. 5.
- <sup>30</sup> *Ibid*, p. 3.
- <sup>31</sup> KPMG Econtech, May 2010, p. 5.

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