Industry

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Metals & Mining Strategy

Equity

Royalties, Riches and Taxes

- **The heaviest royalty region is…?** — Russia with a weighted average royalty of 5.5%. Australia is the next highest region with a 5.2% average royalty. Most countries' royalties are in the 3-5% range with the exception of Canada and South Africa who have average royalties closer to 2-2.5%. Whilst Russia has a high royalty rate, its corporate tax rate is closer to 20% compared to Australia at 30%. Thus in an all-in basis Australia is already one of the most heavily taxed resource countries.

- **Who relies on mining?** — Of all the major mining regions, the Indonesian economy generates the greatest proportion of its GDP from the mining sector with a contribution of 10.5%. Other heavily mining focused regions are South Africa (8.7% of GDP), Australia (7.7%) and Chile (7.5%).

- **Where the risk is** — Continued strong metal prices and budget deficits are likely to put continued pressures on royalty and tax rates for natural resources companies. Globally regions such as Canada and South Africa where royalty levels are lower than average would appear to be at risk from potential increases. Similarly regions where mining is a high proportion of GDP (Indonesia, Russia and Chile) could be targeted to increase revenue.

- **We don't see significant 'Henry' Risk in Australia** — We do not believe the Henry tax review is aimed at adding another level of tax burden on the miners. Our industry expert indicates that this is a means of standardizing and simplifying a confusing State based royalty scheme. Domestically we would see the discount iron ore royalties paid by the majors under upwards pressure in WA, gold prices in WA rise and potentially copper rates across the country increase. **Overall Australian royalties/taxes are already some of the highest in the world and further increases could curtail investment in and the competitiveness of our resource sector.**

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Figure 1. Value, contribution and royalties of Top 5 mining regions

Country	Value of resources - ex energy (US$bn)	Mining Sector contribution to GDP	Average Royalty (weighted by resource base)
South Africa	2494	8.7%	2.5%
Russia	1636	10%	6.4%
Australia	1588	8%	4.9%
Canada	1000	4.3%	2.0%
Brazil	726	1.3%	3.1%

Source: USGS, Ernst & Young and Citi Investment Research and Analysis

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

Royalties on the rise

With the current strong commodities environment and generally weak domestic economies for most countries, their in-situ natural wealth (i.e resources in the ground) become a valuable source of income generation for governments. With China continuing to import metals in large volumes, more and more countires and the governments are looking to increase their fiscal position from the boom. As such many of the historic tax breaks for capital investment in regions are disappearing and the lenient royalty and tax structures are also diminishing.

We are also seeing regions lift royalties and taxes on a short term basis to meet funding requirements. The most recent case is the lifting in the corporate tax and royalties for the Chilean copper mines to help fund the government's budget for the rebuilding following the recent earthquake. The corporate tax rate will increase 3 percentage points next year and in 2012 the rate will be 1.5 points higher than it is now

Against that backdrop we have attempted to assess which countries are more blessed with natural resources than others, which countries economies are more reliant on natural resources and thus where royalty rates may increase.

The table below looks at the 'average' royalty level by region for the worlds top mining countries.

Figure 2. 'Average' country royalty

Country	Average Royalty (weighted by resource base)	Average Royalty (weighted by 2009 production levels)
Russia	5.50%	6.40%
Australia	5.20%	4.90%
Chile	5.00%	5.00%
USA	3.20%	2.40%
Brazil	3.10%	3.10%
China	3.10%	3.00%
Peru	3.00%	3.00%
Sth Africa	2.50%	2.70%
Canada	2.00%	2.00%

Source: USGS, Ernst & Young and Citi Investment Research and Analysis

The analysis indicates that overall **Australian royalties/tax are already some of the highest in the world and further increases will severely curtail investment in and the competitiveness of our resource sector.** Clearly the risk on royalties comes from South Africa, Canada and the USA.

Global royalty levels

Gathering global royalty data is a difficult exercise given how much royalties can vary in a country on a state by state level as well as whether a royalty is on revenue or profit based tax. In our analysis we have attempted to gather royalties on a revenue basis and when the royalty varies on a state basis (or indeed a sliding scale on price) we have tried to determine an average. The table below looks at the key countries' royalty levels for the major commodities. Appendix 1 has a series of charts looking at the data in more detail. The data below highlights the 'headline' royalties in the countries and not the concessional royalties that may have been granted historically to induce investment in developing regions.

Figure 3. Royalty snapshot by country and commodity

	Bauxite	Copper	Gold	Iron Ore	Nickel	Zinc	PGM	Potash	Coal
South Africa			2%	6%			3%		3%
Russia	6%	8%	6%	5%	8%			4%	4%
Australia	2%	3%		5%	8%	3%			7%
Canada		2%	2%		2%	2%		2%	
Brazil		5%	2%	3%	3%	3%		3%	3%
China	7%	5%	0%	3%					
Chile			3%					7%	
USA	5%	3%	1%		2%	1%		2%	13%
Peru		3%	3%			3%			
Kazakhstan	4%								
Indonesia		1%							14%

Source: Ernst & Young and Citi Investment Research and Analysis

We have also attempted to determine an 'average' country royalty to analyse how the various regions compare from a total royalty perspective. To do this we have taken a weighted average of the royalties by commodity and the dollar value of export of that commodity on a country by country basis. We have also weighted the royalties by the dollar value of their reserve value by country.

Figure 4. 'Average' country royalty

Country	Average Royalty (weighted by resource base)	Average Royalty (weighted by 2009 production levels)
Russia	5.50%	6.40%
Australia	5.20%	4.90%
Chile	5.00%	5.00%
USA	3.20%	2.40%
Brazil	3.10%	3.10%
China	3.10%	3.00%
Peru	3.00%	3.00%
Sth Africa	2.50%	2.70%
Canada	2.00%	2.00%

Source: USGS, Ernst & Young and Citi Investment Research and Analysis

Whilst the analysis is crude, it does provide a relatively decent overview of the relative royalty level on a country by country basis. On the analysis Russia has the highest level of royalty rate which is a surprise. Australia's royalty rate is also quite high on a global basis dragged up by the high level of iron ore and coal royalties in the country.

Royalties only paint part of the picture of the total tax payable in a region. Corporate tax along with VAT/GST also increase the tax burden of miners in various regions. The corporate tax payable by region obviously varies massively on a company by company basis given the amount of tax losses etc. The table below purely looks at the 'average' royalty and headline corporate tax rate for those regions to give a clearer perspective of the total tax burden of the producers.

Figure 5. Total tax burden

Country	Average Royalty (weighted by 2009 production levels)	Headline corporate tax	Total tax burden
USA	2.40%	35%	37.4%
Brazil	3.10%	34%	37.1%
Australia	**4.90%**	**30%**	**34.9%**
Sth Africa	2.70%	29%	31.7%
Peru	3.00%	27%	30.0%
China	3.00%	25%	28.0%
Russia	6.40%	20%	26.4%
Canada	2.00%	20%	22.0%
Chile	5.00%	17%	22.0%

Source: USGS, Ernst & Young and Citi Investment Research and Analysis

On an all-in pre VAT/GST basis Australia has the 3rd highest total tax burden of all the major mining regions. Only Brazil and USA have higher tax burdens that are marginally ahead of Australia. Canada, Chile and Russia all pay below 30% total tax for their natural resources sector and as such we would expect any hikes in global royalty regimes to focus on those regions.

The importance of mining

The final piece of the puzzle in determining the potential for a country to shift the landscape of their mining royalties/taxes is the importance of the sector to the economy. If mining is c1-2% of GDP, then a hike in taxes is unlikely to do much for the countries budget/deficit. On the flip side is if mining is c10% or above of GDP then it is a sizeable industry and an increase in the royalty or tax burden would add significant amounts of revenue to the budget. However you don't want to squeeze the stone dry as too much tax interference could destroy the competitive landscape of the mining industry in the country.
The table below looks at the contribution of mining to GDP for the large commodity reserve base countries.

Figure 6. Mining sector contribution to GDP

Country	Mining Sector contribution to GDP	Value of resources - ex energy (US$bn)
Indonesia	11%	227
Russia	10%	1636
Sth Africa	9%	2494
Australia	8%	1588
Chile	8%	661
Peru	6%	328
Canada	4%	1000
USA	2%	613
Brazil	1%	726
China	n/a	717
India	n/a	296
Kazakhstan	n/a	292

Source: USGS, Ernst & Young and Citi Investment Research and Analysis

Thus if all parts of the puzzle are combined (see table below) the regions we believe are most susceptible to an increase in mining royalties/taxes are regions where there are low levels of royalties compared to the global average and mining is a high contributor to the budget. Thus Chile, Peru, Canada and South Africa would be the regions most at risk.

Figure 7. Taxes and royalties

Country	Value of resources - ex energy (US$bn)	Mining Sector contribution to GDP	Average Royalty (weighted by resource base)
Sth Africa	2494	9%	2.7%
Russia	1636	10%	6.4%
Australia	1588	8%	4.9%
Canada	1000	4%	2.0%
Brazil	726	1%	3.1%
China	717	n/a	3.0%
Chile	661	8%	5.0%
USA	613	2%	2.4%
Peru	328	6%	3.0%
Indonesia	227	11%	10.0%

Source: USGS, Ernst & Young and Citi Investment Research and Analysis

Clearly the data above indicates that Australia mining sector is already relatively high payer of total resource tax when compared to its global peers. Whilst it is a large contributor to the tax base an increase in royalties is likely to reduce the attractiveness of investing in and expanding mining operations in Australia.

Who's at risk?

On our analysis we believe that there is a strong possibility of elevating royalties in Chile, Peru, Canada and South Africa. Whilst our analysis does not cover much of the African continent (due to lack of data) we believe that regions such as West Africa, Zambia and the DRC may also be at risk from rising royalties. The table below looks at the exposure of earnings that companies have in the various 'at risk' regions.

Figure 8. Geographic split of revenue

	Canada	South Africa	West Africa	Other Africa	Zambia/DRC	Chile
BHP Billiton	2%	6%				16%
Rio Tinto	22%	2%				5%
Aquarius		100%				
Platinum Australia		100%				
Lihir			8%			
Equinox					100%	
Riversdale				100%		

Source: Citi Investment Research and Analysis

Clearly the most 'at-risk' companies are the Australian companies with assets in Africa. However we believe that much of the risk of royalty rate increases is already incorporated in to sovereign risk discount applied to the companies. Interestingly BHPB and RIO would not be immune from potential royalty increases outside of Australia.

Henry Tax Review

As our analysis above indicates the Australian mining sector is already relatively high payer of total resource tax when compared to its global peers. Any further taxing burden could reduce the attractiveness of investing in Australia, ultimately reducing production. The high coal and iron ore prices should contribute significantly more revenue to the Government coffers without the need to increase the tax burden. For instance the increase in iron ore prices from c$60/t to c$120/t should add c$1.2bn in to the budget.

Thus based on the above we continue to believe that the Henry Tax review is about simplifying the royalty/tax structure within Australia rather than adding a new burden of tax. Below is an extract from our report 'Henry Review – Replacement Tax not Added Tax' (1 Feb 2010).

- **Proposal as we understand it**: Our industry expert has indicated that the proposed resources rent tax is a tax aimed at replacing both the revenue based royalties and the current corporate tax rate. It is not intended to be a tax on top of the current tax rate. Essentially a straight 40% tax rate will replace the 2-8% royalties and the 30% corporate tax rate.

- **But no one really knows**: Given that the review has yet to be finalized and made public, the exact structure and intention of the report are not definitively known by the market. Thus any sensitivity analysis on profit impact is just hypothesis.

- **Timing**: Unlikely to be even formally considered until after an election (so not until end of 2010). To pass the legislation through could take a further 6-12 months, so a 2011 start date is the absolute earliest time frame. However given the amount of debates between the State and Federal Governments, we don't believe that any major tax reform will be likely before 2012 at the earliest.

- **Process**: To remove the State royalties and move to a blanket Federal tax rate a Head of Government conference would be needed. The States would agree to hand over power in return from a proposal from the Commonwealth stating how the tax generation would be spread. Upon this the bill would need to be passed through the House of Representatives and then to the Senate. We see a 2 year minimum turnaround time for this process.

- **What if a disagreement?**: The Federal Governement has no powers to remove the States royalties. Therefore if a State decides to not sign any agreement, Royalties could still be in existence in their regions. Thus we could be in a farcical position where some states have approved the change and others haven't, significantly increasing the complexity of the tax system. Exactly what the Henry review is trying to avoid.

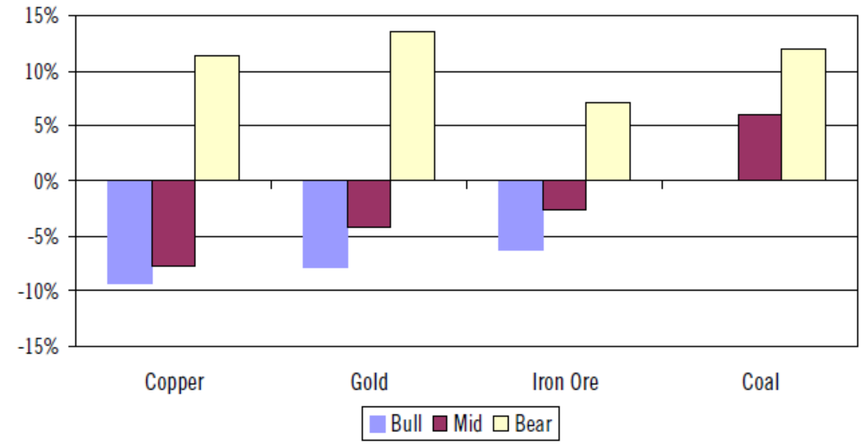
- **Tax could be both good and bad**: Removing the revenue based royalties and raising the tax rate increases the tax paid by companies in boom years. It also increases the tax from higher margin businesses relative to their peers. As such the better assets are taxed more heavily than the worst one. Exactly what you want from a resources tax and what was NOT provided under the old system. The new structure would also reduce the tax burden on companies in poor commodity price environments as a tax would be off profit rather than revenue.

- **Higher royalty businesses to fare relatively better than lower royalty ones**: Industries such as coal where the royalty rates are already c6-8% will suffer less of a correction in total tax paid levels than low royalty industries such as gold and copper (both royalties c3%).

More tax in the good years

Moving away from a revenue based royalty to a higher level of corporate tax is likely to see increased tax in the boom years, but provide tax relief in the lean years when revenue is low. To provide a sense of how earnings could change under a new tax structure we have created some generic mines for the copper, gold, iron ore and coal sector. The mines' size, costs and D&A are all generally reflective of the 'industry average mine'. Under the various commodities we run a bull, mid cycle and bear case scenario through the current tax system and the potential tax system (which assumes a blanket 40% tax and no royalties). Looking at the earnings change line at the bottom of the tables provides an indication of where earnings could move to under the proposal.

Figure 9. Potential EPS impact on commodity sectors of 40% tax rate (bull, medium, bear commodity case scenarios)



Source: Citi Investment Research and Analysis

The data also indicates that in periods of mid cycle to base case commodity prices, the new tax system is actually advantageous to the profitability of miners as the tax is not based on revenue.

Higher margin businesses are also more susceptible to a higher level of earnings downgrades under the potential changes as the table below indicates for the copper industry.

Figure 10. Earnings impact of potential tax change on copper industry at various EBITDA margins

EBITDA Margin	Earnings impact
70%	-9.3%
60%	-7.7%
50%	-6.9%
40%	-3.8%
30%	1.0%

Source: Citi Investment Research and Analysis

Impact on companies

An exact impact on companies is impossible to give given that we do not know some of the finer points of the potential plans such as deductions for capex and exploration. The year that the plan becomes instigated and the prevailing commodity price environment at the time would also be major factors in calculating any downgrades. We have tried to rank the companies into groups where we see the largest impact relative to their peer group.

Referenced companies:
(AQP.AX; A$7.48; 1H); (AWC.AX; A$1.65; 3H); (BHP.AX; A$42.00; 1M); (CEY.AX; A$4.52; 2M); (EQN.AX; A$4.49; 2H); (ERA.AX; A$16.25; 2H); (FMG.AX; A$4.89; 1H); (ILU.AX; A$4.80; 1H); (LGL.AX; A$3.97; 2H); (MCC.AX; A$16.04; 2M); (NCM.AX; A$34.52; 1M); (OZL.AX; A$1.19; 1M); (PDN.AX; A$3.86; 1H); (PLA.AX; A$1.03; 2H); (PNA.AX; A$0.56; 1H); (RIO.AX; A$76.40; 1M); (RIV.AX; A$9.56; 2S); (WHC.AX; A$5.64; 1M)

Figure 11. Potential impact on earnings

0% Change	Low (<2%)	Medium (2-5%)	High (c5%-10%)
Aquarius	Lihir	Fortescue	Oz Minerals
Equinox	Whitehaven	Newcrest	Iluka
PanAust	Centennial	Alumina	
Platinum Australia	Macarthur	ERA	
Riversdale		BHP	
Paladin		RIO	

Source: Citi Investment Research and Analysis

Offshore assets such as Paladin, PanAust and Aquarius provide protection against any changes in the Australian royalty rate. However given their emerging market exposure they are not immune from changes in political, economic or ownership issues in the regions they operate in.

An interesting side point from the potential tax changes in Australia is should the discount rate spread between emerging market assets/companies to Australian assets narrow given a change in tax systems in Australia?

Impact on Investment

As mentioned we believe that the Henry tax review is about simplifying the Australian tax system, not adding an extra layer of tax burden for the miners. The table below looks at Australia's total tax burden for the mining industry (royalties + corporate tax) assuming base case, our view of the Henry Review and the 'wrong' case scenario where there is a 40% resources rent tax on top of the corporate tax and revenue based royalties.

Figure 12. Total tax burden

Region	Total Tax Burden
Australia - Post Henry - RRT	58%
Australia - Post Henry	40%
USA	37%
Brazil	37%
Australia - Current	35%
Sth Africa	32%
Peru	30%
China	28%
Russia	26%
Canada	22%
Chile	22%

Source: Citi Investment Research and Analysis

As the table shows, a straight 40% tax for the miners will take Australia to the top of the tax burden list. If a 40% RRT were also added, the total tax payable for the miners would move to c58%. That's more than 1.5x USA and Brazil which are the next most heavily taxed regions. At that level of tax burden we believe it is fair to say that investment in the Australian resources sector would start to diminish, and so too would job creation. As the work we did in the '*The Richest Country in the World is…*' report (26 April 2010) highlights, there are plenty of other regions in the world with plentiful natural resources.

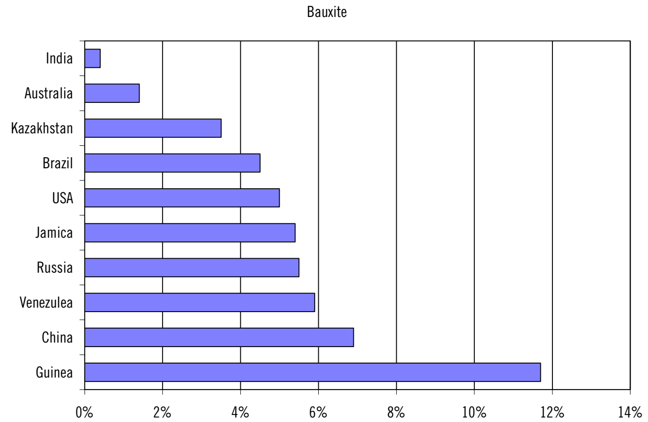
Figure 13. Top 15 Countries reserve position (US$bn)

	Total	Bauxite	Copper	Gold	Iron Ore	Nickel	Zinc	PGM	Potash	Other
Sth Africa	2494	0	0	151	37	49	0	2258	0	-1
Russia	1636	6	71	125	794	87		222	324	7
Australia	1588	186	85	146	737	344	20			70
Canada	1000	0	28	25	62	54	14	11	792	14
Brazil	726	57		50	505	60			54	0
China	717	23	106	48	408	15	58	0	36	23
Chile	661		564	50					2	45
USA	613	1	123	75	119		25	32	16	222
Ukraine	516				510				5	1
Peru	328		222	35			34			37
India	296	23			255		18			0
Kazakhstan	292	11	63		187		30			1
Mexico	240		134	35	23		25			23
Indonesia	227		109	75		42				1
Guinea	222	222								0
Total		529	1505	815	3637	651	224	2523	1229	443

Source: Citi Investment Research and Analysis

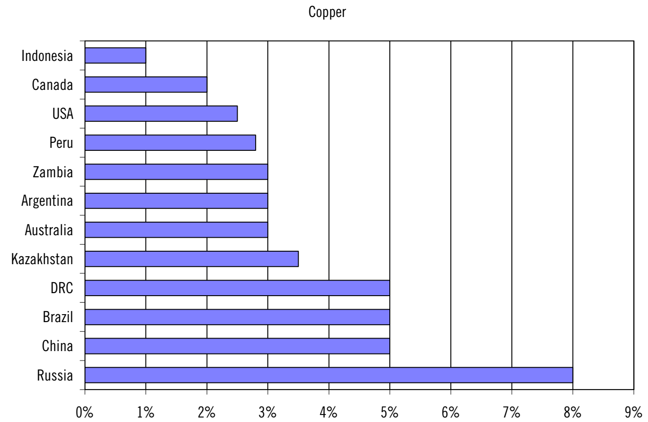
Appendix 1 – Royalty charts

Figure 14. Global bauxite royalties



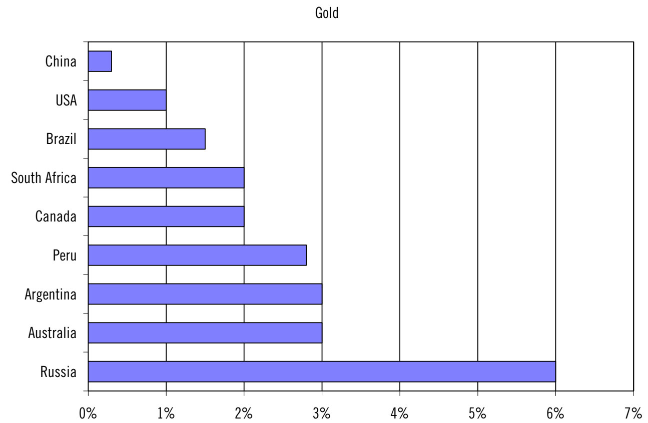
Source: IIBRAM, Ernst & Young, Citi Investment Research and Analysis

Figure 15. Global copper royalties



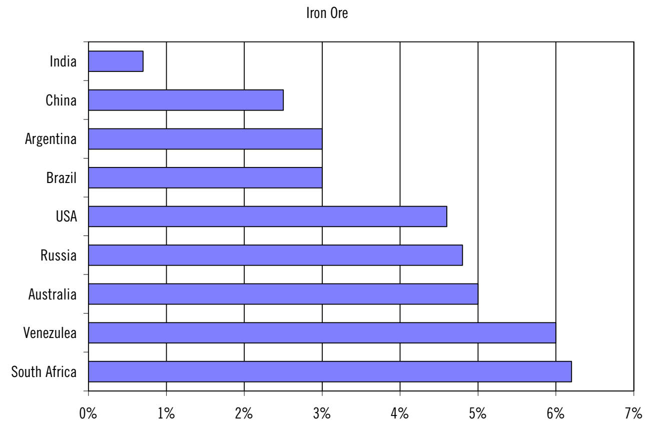
Source: IIBRAM, Ernst & Young, Citi Investment Research and Analysis

Figure 16. Global gold royalties



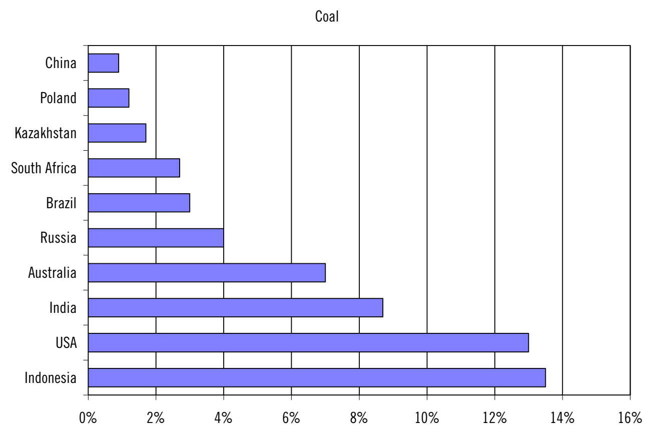
Source: IIBRAM, Ernst & Young, Citi Investment Research and Analysis

Figure 17. Global iron ore royalties



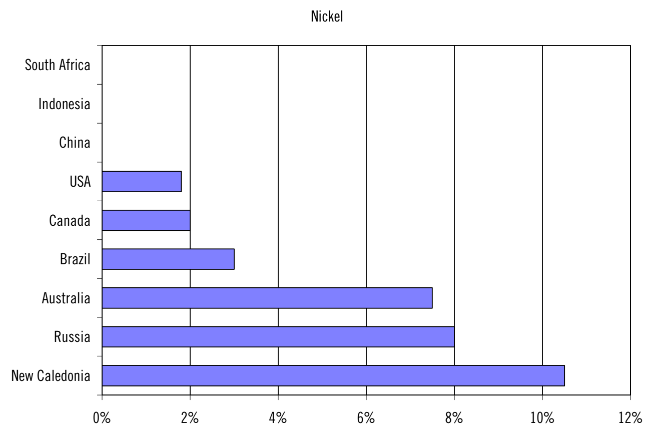
Source: IIBRAM, Ernst & Young, Citi Investment Research and Analysis

Figure 18. Global coal royalties



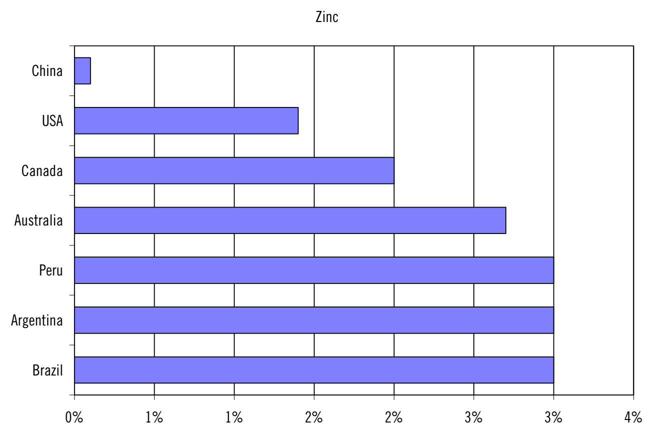
Source: IIBRAM, Ernst & Young, Citi Investment Research and Analysis

Figure 19. Global nickel royalties



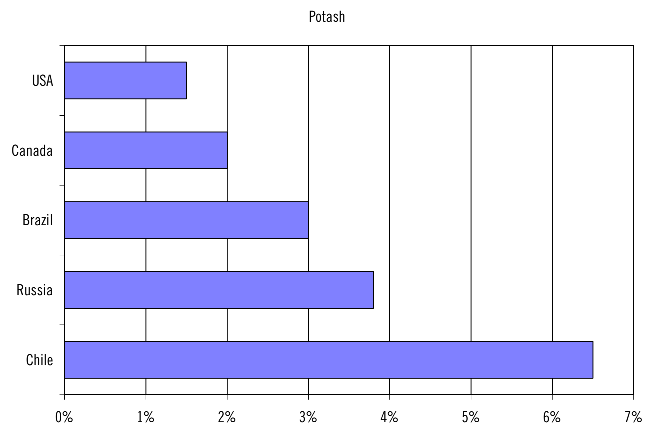
Source: IIBRAM, Ernst & Young, Citi Investment Research and Analysis

Figure 20. Global zinc royalties



Source: IIBRAM, Ernst & Young, Citi Investment Research and Analysis

Figure 21. Global potash royalties



Source: IIBRAM, Ernst & Young, Citi Investment Research and Analysis

Appendix A-1

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Rohini Malkani has in the past worked with the India government or its divisions in her personal capacity.

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