

December 2015

## MARGINAL EFFECTIVE TAX AND ROYALTY RATE FOR METAL MINING BY PROVINCE IN CANADA

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In our 2013 paper on Canadian mining taxation, “Repairing Canada’s Mining-Tax System to Be Less Distorting and Complex” (hereafter “our 2013 mining paper”), Table 1 provides an overview of Canada’s corporate income tax (CIT) and metallic-mining royalty provisions by province and Table 2 the marginal effective tax and royalty rate (METRR) by province and by asset type. These two tables (hereafter the “original” Table 1 and Table 2) cover the statutory tax and royalty provisions up to the end of year 2012.

Since 2013, the Federal Government and several provincial governments announced some major changes that have or will have significant impact on the METRR for metallic-mining industry across provinces.

This addendum provides an update of the original Tables 1 and 2, as published in our 2013 mining paper, by incorporating all the implemented budget changes since 2013. Table 1A is the update of the original Table 1, and Table 2A the update of the original Table 2. Along with these two updated tables, Section 1 below provides a summary of major budget changes *announced* by the governments since 2013, and Section 2 explains the METRR impacts of these major changes by comparing Table 2A with the original Table 2.

Note that all our METRR calculations, as presented in our 2013 mining paper and this report, do not cover any provincial “tax holiday” provisions. Information on such tax holidays are presented as “other provisions” in the bottom row of Table 1 in our 2013 paper and Table 1A in this report. For example, in Ontario, a mining tax exemption on up to \$10 million of profit during an exempt period is available for each new mine; the exempt period for a non-remote mine is three years, and that for a remote mine is ten years.

## 1. MAJOR TAX CHANGES ANNOUNCED IN THE GOVERNMENT BUDGETS SINCE 2013

Table 1A provides a summary of the statutory tax and royalty provisions by province in Canada up to September 2015. The main annual tax changes that were relevant to the mining industry and announced in the government budgets since 2013 are the following:

### 2013:

- A. The federal budget proposed that pre-production development expense, which is currently treated as Canadian exploration expenditures (CEE) and fully expensed, be treated as Canadian development expenses (CDE), which are deductible on a 30-per cent declining-balance basis. The transition period for this change is 2015 - 2017: In 2015, only 20 per cent of the pre-production development expenses are treated as CDE and the remaining 80 per cent still as CEE; by 2018, all such expenses will be treated as CDE.<sup>1</sup>
- B. The Federal budget proposed to phase out the accelerated capital cost allowance (ACCA) up to 100 per cent that is currently available for assets used in new mines or eligible mine expansions. The phase-out period for this ACCA is 2017-2020. After 2020, all mining assets will be depreciated at a 25-per cent annual allowance on a declining-balance basis.<sup>2</sup> This proposed change does *not* affect our METRR calculation for 2015.
- C. Quebec introduced a new mining tax regime that features two radical changes:<sup>3</sup>
  - A two-tier tax with a 1-per cent rate applying to output value at the mineshaft up to \$80 million and 4 per cent in excess of the threshold.
  - A three-tier progressive mining tax – with rates of 16 per cent, 22 per cent and 28 per cent—based on profit margins, respectively, up to 35 per cent, between 35 and 50 per cent, and above 50 per cent.
- D. British Columbia raised its CIT rate from 10 to 11 per cent.
- E. New Brunswick raised its CIT rate from 10 to 12 per cent.

### 2014:

- F. Quebec reduced its resource investment tax credit for all exploration expenses (along with over thirty other business tax credits) by 20 per cent from the previous 15-38.75 per cent to 12-31 per cent.<sup>4</sup>

### 2015:

- G. Ontario replaced its resource tax credit with an allowance for royalty and mining tax paid for CIT purposes.
- H. Alberta raised its CIT rate from 10 to 12 per cent.
- I. Quebec announced that, from 2017 to 2020, its CIT rate will be gradually reduced by 0.4 per centage points to 11.5 per cent in 2020.

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<sup>1</sup> Refer to Government of Canada, Budget 2013, Annex 2 (<http://www.budget.gc.ca/2013/doc/plan/anx2-eng.html>), under the heading, “Business Income Tax Measures.”

<sup>2</sup> Ibid.

<sup>3</sup> Refer to Government du Québec (2013, “A New Mining Tax Regime Fair for All.” [http://www.finances.gouv.qc.ca/documents/autres/en/AUTEN\\_NewMiningTaxRegime.pdf](http://www.finances.gouv.qc.ca/documents/autres/en/AUTEN_NewMiningTaxRegime.pdf)

<sup>4</sup> Refer to <https://www.mern.gouv.qc.ca/english/mines/fiscal/fiscal-incentives-resources.jsp>

**TABLE 1A CORPORATE INCOME TAX AND METALLIC-MINING ROYALTY PROVISIONS BY PROVINCE, AS OF OCTOBER 31, 2015**

	BC	AB	SK	MB	ON	PQ	NB	NS	N&L
<b>CORPORATE INCOME TAX PROVISIONS:</b>									
<b>Common features:</b> federal tax rate = 15 per cent; CEE (Canadian exploration expenses) are fully expensed, except in BC and Quebec where additional tax credit is provided, varying according to certain criteria; CDE (Canadian development expenses) is depreciable at 30 per cent on declining balance, except in Quebec where CDE is fully expensed; the post-production mining assets are currently categorized as Class 41 and depreciated at a 25-per cent capital-cost allowance (CCA) rate, with an accelerated capital-cost allowance (ACCA) of 100-per cent for class 41a concerning mine expansions in excess of five per cent of sales <sup>1</sup> and provincial mining tax/royalty is deductible for CIT purposes. There is also a tax incentive provided through flow-through shares <sup>2</sup> that benefits junior resource companies, which is excluded in this study, which focuses only on large corporations.									
<b>Provincial Rate</b>	11%	12%	12%	12%	11.5%	11.9%	12%	16%	14%
<b>Special provincial provisions</b>	A refundable tax credit of 20% (30% in pine-beetle areas) is provided for exploration expenses. <sup>3</sup>					- CDE fully expensed, - Refundable ITC of 12% to 31% for Quebec exploration expenses.			
<b>MINING ROYALTY/TAX PROVISIONS</b>									
<b>Tax rate - First Tier (mostly based on net revenue except for N&amp;L)</b>	2% on net current proceeds (fully credited against the second-tier tax).	1% of pre-payout sales.	N/A	N/A	N/A	N/A	2% on revenue net of processing and transport costs (exemption for the first 2 years).	2% of net revenue if greater than 15% of net income.	15% of profit net of a royalty allowance equal to the greater of 20% of profit and the non-Crown royalties.
<b>Tax rate - Second Tier (mostly based on profit except for N&amp;L)</b>	13%	12% on revenues net of accumulated costs.	10% (5% on sales up to 1m oz for precious metals or 1m mt for base metals).	Up to 17% (through a multi-tier rate schedule).	10% (5% in remote areas).	16%	16% on net profits exceeding \$100k.	15% of net income if greater than 2% of net revenue.	20% on the total royalty allowance net of royalties actually paid.
<b>Exploration expenses</b>	Expensed	Expensed	150%	Expensed, but 150% for off-site exploration exceeding the 3-year average.	Expensed	Expensed (125% for the north)	150% (except mineral rights that are expensed).	100% for the first 3 yrs, then 30%.	Expensed
<b>Development expenses</b>	Expensed	Expensed	150%	20%	Expensed	Expensed	Expensed	100% for the first 3 years, then 30%.	Over life of mine.
<b>Depreciation</b> (S.L. signifies straight-line depreciation. Otherwise, declining balance depreciation is applied.)	Additional super allowance of 33% for new mines and expansions that begin commercial production by Dec 31, 2019.	15% S.L.	100%	20%	30% S.L. or 100% of new mine assets. Processing assets: 15% S.L.	30%	Minimum of 5% to 100% for new mines or mine expansion, and 33% for other assets.	100% for the first 3 years, then 30%.	25% (100% for new mine or expansion) with the half-year convention.

	BC	AB	SK	MB	ON	PQ	NB	NS	N&L
<b>Processing allowance (in addition to depreciation allowance for processing assets)</b>	None	None	None	20% of original cost of assets (milling, smelting and refining) Up to 65% of profits.	Asset original cost -8% milling -12% smelting -16% refining -20% North Ont. Up to 65% of profit.	Asset original cost -7% milling -13% smelting -13% refining Up to 55% of profit.	Asset original cost -8% milling -15% smelting -15% refining Up to 65% of profit.	Asset original cost -8% milling -10% smelting -8% refining Up to 65% of profit.	Asset original cost -8% milling -15% smelting -8% refining Up to 65% of profit.
<b>Financing Allowance for carry-forwards</b>	125% of bank rate to Cumulative Expenditure Account balance.	None	None	None	None	None	8% of un-depreciated base	None	None
<b>Reclamation contributions</b>	Deductible	Deductible	Deductible	Deductible	Deductible	Deductible	Deductible	N/A	Deductible
<b>Other Provisions</b>		10% allowance in lieu of overheads.	10-yr holiday; 150% of pre-production expenses recovered before royalties paid.	New mine holiday until payback is achieved.	No tax for first 3 years or \$10 million (10 years for remote locations.)	Mine-by-mine approach for duties. Refundable tax credit for losses.	15% R and D tax credit.		Max \$2M/yr credit for 10 years.

Notes:

1. This ACCA provision will be phased out over the period of 2017-2020.
2. Flow-through shares enable exploration and development deductions to be transferred to shareholders. A federal investment tax credit is provided equal to 15 per cent of exploration expenditures. Credit rates by province are BC (20 per cent), Manitoba (20 per cent or 30 per cent), Ontario (five per cent) and Saskatchewan (10 per cent). Credits reduce available exploration deductions
3. This "mining exploration tax credit" will expire on December 31, 2016 ([http://www.sbr.gov.bc.ca/documents\\_library/bulletins/cit\\_006.pdf](http://www.sbr.gov.bc.ca/documents_library/bulletins/cit_006.pdf)).

Source:

PWC, Tax facts and figures, Canada 2015, and its 2014 version, [www.pwc.com/ca/taxfacts](http://www.pwc.com/ca/taxfacts).

Ernst & Young, Tax Alert – Canada, <http://www.ey.com/CA/en/Services/Tax/Tax-Alerts>.

Natural Resources Canada, Tables on the structure and rates of main taxes, <http://www.nrcan.gc.ca/mining-materials/taxation/mining-taxation-regime/8890>, and Mining-specific tax provisions, <http://www.nrcan.gc.ca/mining-materials/taxation/mining-taxation-regime/8892>.

Various provincial government websites such as that of the Ontario Ministry of Finance.

## 2. METRR IMPACTS OF THE MAJOR TAX CHANGES SINCE 2013

Table 2A is an update of the original Table 2 in our 2013 mining paper. By following the order of all the announced statutory tax changes listed in Section 1 above and comparing METRRs between Table 2A and the original Table 2 for the “base case,” below are the main findings:

- A. The federal reclassification for pre-production development expense (PPDE) to be treated as CDE rather than CEE has been phased in starting in 2015, with only 20 per cent of PPDE to be reclassified from CEE to CDE. Note that this reclassification of PPDE *does not* change the METRR for CEE and CDE individually but the aggregated METRR for the mining industry as a whole. More specifically, given that the METRR for CEE (which can be fully expensed) is consistently lower than that for CDE (which is entitled to a 30-per cent annual allowance), reclassifying PPDE from CEE to CDE is expected to raise the aggregated METRR for the

mining industry as a whole. Furthermore, the wider the METRR gap between CEE and CDE, the more evident is the impact of this asset reclassification on the aggregated METRR. Therefore, the aggregated METRR impact of this change varies among provinces depending on the METRR gap between CEE and CDE.<sup>5</sup>

- B. The federal phasing out of the mining ACCA over the period of 2017-2020 does *not* affect our METRR calculation for 2015.
- C. Quebec's new mining tax regime introduced in 2013, combined with a 20-per cent reduction in its resource tax credit tabled in 2014, raised its METRR by about 3.4 per centage points, from the previous 4.6 per cent to 8.0 per cent. (Its aggregated METRR of 8.7 per cent includes the impact of the federal reclassification of PPDE from CEE to CDE as pointed out in Point A above.)
- D. The METRR for BC increased only 0.6 per centage points, from -9.0% to -8.4%, partly due to the increase in its CIT rate from 10 to 11 per cent.
- E. The METRR for New Brunswick increased by 1.1-per centage points largely due to a two-per centage-point increase in its CIT rate from 10 to 12 per cent.
- F. Quebec's 20-per cent reduction in its resource tax credit for all exploration expenses contributed to its METRR increase, as mentioned in point C above.
- G. The METRR for Ontario increased 3.6 per centage points from the previous 2 per cent to 5.6 per cent, mainly due to the replacement of the previous excessive resource tax credit with an allowance for mining tax and royalty.
- H. Alberta's METRR increased by 0.7-per centage points mainly due to the 2-per centage-point increment in its CIT rate from 10 to 12 per cent.
- I. Quebec's announced CIT rate reduction over the period of 2017-2020 does *not* affect our METRR calculation for 2015.

As a memorandum item, the bottom panel of Table 2A also provides a METRR comparison between 2012, 2015 and 2020 for the "base case." As that panel shows, due to all the announced statutory tax changes listed above, the METRR for the mining industry has been visibly higher for most provinces for 2015 compared to 2012; the METRR for mining in all provinces will be significantly higher after 2020 when the two announced federal changes concerning mining taxation (refer to Point A and B above) have been fully phased in, assuming there are no other further tax changes relevant to mining taxation. Note that Quebec's METRR after 2020 also includes a very minor downward impact of its announced 0.4-per centage-point reduction in the provincial corporate income tax rate.

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<sup>5</sup> For example, our simulations show that, other things being equal, this METRR impact for Quebec is about 0.7 per centage points but only about 0.2 – 0.3 per centage points for other provinces. This simulation is consistent with the observation drawn from Panel C, "CIT only," in Table 2A, where the METRR gap between CEE and CDE appears to be the widest in Quebec (i.e., 18-per centage points) and ranges from only 6- to 7-per centage points for other provinces.

**TABLE 2A EFFECTIVE TAX AND ROYALTY RATE FOR METAL MINING BY PROVINCE AND BY TYPE OF ASSETS, 2015**

<b>A. Base Case</b>	<b>BC</b>	<b>AB</b>	<b>SK</b>	<b>MB</b>	<b>ON</b>	<b>QC</b>	<b>NB</b>	<b>NS</b>	<b>NF</b>
Depreciable assets	5.2	19.7	27.9	42.7	8.4	27.6	8.8	10.6	13.4
Land	13.6	13.9	13.3	15.4	13.1	17.0	15.1	17.3	16.3
Inventory	14.1	14.4	13.8	15.9	13.6	17.5	15.6	17.8	16.9
Aggregate/excl. E&D	8.1	18.2	24.1	36.6	10.0	24.9	11.0	12.9	14.5
CEE	-32.9	4.4	-7.9	-3.3	-2.4	-20.6	2.8	-2.8	-2.6
CDE	-24.0	10.7	-0.8	7.9	4.1	2.3	17.3	5.3	7.8
Aggregate	<b>-8.4</b>	<b>13.2</b>	<b>11.3</b>	<b>20.9</b>	<b>5.6</b>	<b>8.7</b>	<b>9.7</b>	<b>7.4</b>	<b>8.7</b>
<b>B. Excl. PST</b>	<b>BC</b>	<b>AB</b>	<b>SK</b>	<b>MB</b>	<b>ON</b>	<b>QC</b>	<b>NB</b>	<b>NS</b>	<b>NF</b>
Depreciable assets	-36.7	19.7	10.0	25.8	8.4	27.6	8.8	10.6	13.4
Land	13.6	13.9	13.3	15.4	13.1	17.0	15.1	17.3	16.3
Inventory	14.1	14.4	13.8	15.9	13.6	17.5	15.6	17.8	16.9
Aggregate/excl. E&D	-16.0	18.2	11.2	23.1	10.0	24.9	11.0	12.9	14.5
CEE	-32.9	4.4	-7.9	-3.3	-2.4	-20.6	2.8	-2.8	-2.6
CDE	-24.0	10.7	-0.8	7.9	4.1	2.3	17.3	5.3	7.8
Aggregate	<b>-22.0</b>	<b>13.2</b>	<b>4.0</b>	<b>13.3</b>	<b>5.6</b>	<b>8.7</b>	<b>9.7</b>	<b>7.4</b>	<b>8.7</b>
<b>C. Incl. only corporate income taxes</b>	<b>BC</b>	<b>AB</b>	<b>SK</b>	<b>MB</b>	<b>ON</b>	<b>QC</b>	<b>NB</b>	<b>NS</b>	<b>NF</b>
Depreciable assets	7.1	7.5	7.5	7.5	7.3	7.5	7.5	9.5	8.5
Land	10.3	10.7	10.7	10.7	10.5	10.7	10.7	12.8	11.7
Inventory	10.7	11.2	11.2	11.2	11.0	11.2	11.2	13.3	12.2
Aggregate/excl. E&D	8.2	8.7	8.7	8.7	8.4	8.6	8.7	10.7	9.6
CEE	-28.0	-2.5	-2.5	-2.5	-2.4	-16.4	-2.5	-2.8	-2.6
CDE	-20.6	3.7	3.7	3.7	3.6	1.6	3.7	4.4	4.1
Aggregate	<b>-6.4</b>	<b>4.8</b>	<b>4.8</b>	<b>4.8</b>	<b>4.7</b>	<b>0.6</b>	<b>4.8</b>	<b>5.9</b>	<b>5.4</b>
<b>D. Incl. only provincial mining taxes</b>	<b>BC</b>	<b>AB</b>	<b>SK</b>	<b>MB</b>	<b>ON</b>	<b>QC</b>	<b>NB</b>	<b>NS</b>	<b>NF</b>
Depreciable assets	-64.2	12.8	0.0	20.1	-1.5	21.0	-3.7	-4.3	1.3
Land	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Inventory	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aggregate/excl. E&D	-37.6	9.3	0.0	14.9	-1.0	15.7	-2.6	-3.0	0.9
CEE	0.0	6.7	-5.2	-0.9	0.0	0.0	5.3	0.0	0.0
CDE	0.0	6.7	-5.5	3.9	0.0	0.0	13.3	0.0	3.5
Aggregate	<b>-21.1</b>	<b>8.1</b>	<b>-2.3</b>	<b>8.8</b>	<b>-0.6</b>	<b>8.8</b>	<b>2.2</b>	<b>-1.7</b>	<b>1.1</b>
<b>Memorandum:</b>	<b>BC</b>	<b>AB</b>	<b>SK</b>	<b>MB</b>	<b>ON</b>	<b>QC</b>	<b>NB</b>	<b>NS</b>	<b>NF</b>
2012	-9.0	12.5	11.0	20.6	2.0	4.6	8.6	7.1	8.4
2015	<b>-8.4</b>	<b>13.2</b>	<b>11.3</b>	<b>20.9</b>	<b>5.6</b>	<b>8.7</b>	<b>9.7</b>	<b>7.4</b>	<b>8.7</b>
Post-2020*	0.7	20.4	17.7	26.7	13.8	17.4	19.3	17.0	17.8

\* Assuming no further tax changes and the announced federal tax changes are fully phased in.

## APPENDIX

### THE METALLIC-MINING METRR MODEL

This appendix describes the underlying methodology used to build the METRR model for metallic-mining sectors in nine Canadian provinces: British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia and Newfoundland and Labrador. Despite excessive complexity and great diversity among these nine provinces in their mining-tax structures, and allowances provided under the provincial income tax systems, we are able to build a generic METRR model that is capable of capturing *all* the provincial systems. This is a big leap forward from our 2013 mining paper, thanks to Ontario's 2015 Budget that brought its corporate income tax base for mining industry in line with all the other provinces by replacing its resource tax credit with an allowance.

The next section outlines the structure of this generic METRR model. And Table A1 provides tax parameters for individual terms appearing in our METRR model.

#### GENERIC MODEL FOR COST OF CAPITAL

The following equations were used for estimating the cost of capital, inclusive of taxes, for each type of investment expenditure.

*Exploration:*

$$(1) \quad (P_T - C_T)' f_t' = (1+r)^{(T-t)} (1 - \phi_p - \tau^* Z_m) / [(1-g/PCM)(1 - \tau^*)]$$

Where

$\phi_p$  = combined provincial investment tax credit (ITC) for qualifying exploration and development expenses and ranges from zero to over 20 per cent [For example,  $\phi_p$  captures Quebec's refundable tax credit, ranging from 15 per cent to 38.75 per cent depending on the corporation's status, the type of resource and the location of expenditures, under the income tax.]

$\tau^* = \tau(1+r)^{-(T-t)}$ , with  $T-t = 4$  being the time span between starting exploration and the commencement of production and  $T-t = 2$  being that for development (hence  $\tau^*$  has different values for exploration and development)

$Z_m$  = present value of the tax allowances including the super allowance under the mining tax

$g$  = the first-tier mining tax that is based on gross revenue.

PCM = profit margin = 15 per cent, adopted from NRCAN website.

Note that by ignoring Quebec's super allowance for its north, this generic equation for exploration may be equally applied to the Quebec regime.

*Development:*

$$(2) \quad (P_T - C_T)' f_t' = (1+r)^{(T-t)} ((1 - \phi_f - \phi_p)(1 - u_f Z_f - u_p Z_p) - \tau^*(1-u)Z_m) / [(1-g/PCM)(1 - \tau^*)(1-u)]$$

Note that  $Z_m$  expenses for development may differ from those for exploration and depreciable capital assets. And  $\phi_p$  includes 50 per cent of the federal Atlantic Investment Tax Credit (AITC) for the Atlantic provinces.

Also note that the term  $(1 - u_f Z_f - u_p Z_p)$  rather than  $(1 - uZ)$  is used here to accommodate Quebec's system in which, the depreciation allowance for development under the provincial income tax is different from that under the federal income tax (i.e., 100 per cent versus 30 per cent)

*Depreciable assets:*

$$(3) \quad -C_K = (\delta + R - \pi) \{ (1 - uZ) (1 - \phi_p) - \tau(1 - u) Z_m \} / (1 - u)(1 - \tau)$$

Again, depending on the province,  $Z_m$  may differ from expenses for exploration and development, and  $\phi_p$  includes AITC for the three Atlantic provinces despite the fact that it is a federal ITC.

*Processing (milling, smelting, and refining):*

$$(4) \quad -C_K = (\delta + R - \pi) \{ (1 - uZ) (1 - \phi_p) - \tau(1 - u)(Z_m' + Z_m^*) \} / (1 - u)(1 - \tau)$$

where  $Z' = a/(R+a)$  with  $a =$  mining-royalty depreciation rate for processing assets and  $Z^* = \Lambda/R$  being the present value based on one dollar of capital invested in processing assets giving a stream of deductions based on a rate of the original cost without being reduced by depreciation.

Note that, smelting and refining are manufacturing activities according to the North America Industry Classification System. As shown in the latest Ontario input-output table (i.e., the Make Table), the processing activity within the mining industry is almost exclusively for concentration, for which the capital assets are typically subject to a straight-line annual depreciation allowance under the mining tax. That is,  $Z' =$  sum of  $a/(1+R)^n$  with  $n = 1 \dots 7$  and  $a = 15$  per cent for the first six years and 10 per cent for the final year. The present value of the processing allowance is  $V = m[1 - X]/R$  with  $X = 1/(1+R)^T$  where  $m =$  processing allowance,  $R =$  nominal discount rate,  $T =$  life of asset.

## MARGINAL EFFECTIVE TAX AND ROYALTY RATES

Marginal effective tax and royalty rates are estimated by taking the difference between (risk-adjusted) gross ( $R_g$ ) and net ( $R_n$ ) rates of return to capital as a share of the gross rate of return:  $T = (R_g - R_n)/R_g$ .  $R_g$  is estimated by subtracting depreciation from the value of marginal product. (Note: given the deductibility of losses under corporate and mining taxes, the cost of risk is reduced by corporate income and royalty tax rates so that  $T$  is independent of risk costs).



## MAIN PARAMETERS

Table A1 presents all the parameters required for the METRR calculation

**TABLE A1 INPUT DATA FOR THE MINING METRR MODEL**

	BC	AB	SK	MB	ON	QC	NB	NS	NF
Corporate income tax rate	0.26	0.27	0.27	0.27	0.265	0.269	0.27	0.31	0.29
Federal corporate income tax rate	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Provincial corporate income tax rate	0.12	0.12	0.12	0.12	0.115	0.11.9	0.12	0.16	0.14
Inflation rate	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Nominal interest rate on bonds	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
Debt-asset ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
G7 personal tax rate on interest	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
G7 personal tax rate on equity income	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Nominal cost of equity financing (net of risk)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Provincial ITC for CEE/CDE	0.20	None	None	None	None	0.12	None	None	None
Statutory mining-tax rate	0.13	0.12	0.10	0.17	0.10	0.16	0.16	0.15	0.16
No. of years taken for exploration and development, of which:	4	4	4	4	4	4	4	4	4
No. of years taken for development	2	2	2	2	2	2	2	2	2
The pre-payout minimum mining tax	None	0.01	None	None	None	None	0.02	0.02	None
Price-cost margin: $PCM=(P-C)/P$	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Royalty rate as a per centage of $PCM: g/PCM$	NA	0.07	NA	NA	NA	NA	0.13	0.13	NA
<b>Allowance under Mining tax</b>									
For CEE	1.00	1.00	1.50	1.04	1.00	1.00	1.50	1.00	1.00
For CDE	1.00	1.00	1.50	0.20	1.00	1.00	1.00	1.00	0.10
For depreciable assets	1.33	0.15	1.00	0.20	1.00	0.30	1.00	1.00	1.00
For depreciable assets (processing)	1.33	0.15	1.00	0.20	0.15	0.30	1.00	1.00	0.25
Additional processing allowance	0.00	0.00	0.00	0.20	0.08	0.07	0.08	0.10	0.08
<b>Allowance under corporate income tax</b>									
Federal allowance for CDE	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Provincial allowance for CDE	0.30	0.30	0.30	0.30	0.30	1.00	0.30	0.30	0.30
<b>Aggregated capital weight by asset type</b>									
Depreciable assets	36.8%								
Processing	2.4%								
Land	0.2%								
Inventory	16.8%								
Aggregate-excluding E&D	56.2%								
Canadian exploration expenses	27.5%								
Canadian development expenses	16.3%								
Aggregate-including E&D	100.0%								