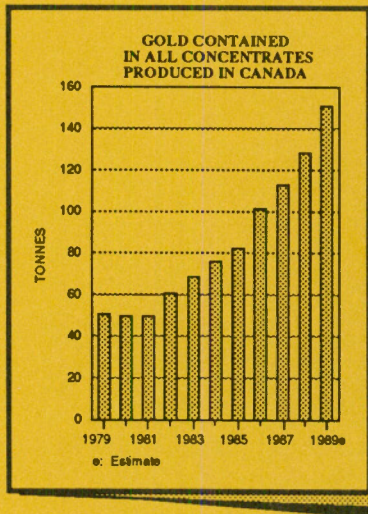


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# CANADIAN MINERAL INDUSTRY



Energy, Mines and  
Resources Canada

Hon. Jake Epp,  
Minister

Energie, Mines et  
Ressources Canada

L'hon. Jake Epp,  
Ministre

Canada

**THE ENERGY OF OUR RESOURCES**

**THE POWER OF OUR IDEAS**



# **CANADIAN MINERAL INDUSTRY**

## **MONTHLY REPORT**



Energy, Mines and  
Resources Canada

Énergie, mines et  
Ressources Canada



## **PREFACE**

This publication is prepared in the Mineral Policy Sector of the Department of Energy, Mines and Resources. It is compiled from many sources using the best information available to us. This report is intended to be a general review of the more important current developments that affect, or may affect, the Canadian mineral industry. It should not be considered an authority for exact quotation or an expression of the official views of the Government of Canada.

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## THE CANADIAN MINERAL INDUSTRY FOR FEBRUARY

The following constitutes a brief summary of the Canadian mineral industry based on information that became available in February.

### ECONOMIC TRENDS

Table 1 provides a comparison of the volume of production of Canada's leading minerals for the months of November and December 1989, the corresponding months a year ago and the year-to-date totals.

Table 2 provides information on Canada's Gross Domestic Product at factor cost by industry at 1981 prices. The data are also annualized and seasonally adjusted.

The annual rate shown for any given month is calculated by multiplying the figure for that month by 12. It is important to note, however, that if a particular month has been influenced by special factors such as a strike, the annualized data will reflect this bias.

Factor cost refers to output that is valued exclusive of excise taxes and duties, and provincial and municipal sales taxes. Factor cost does, however, include subsidies and other taxes that are not a function of the level of output or sale.

Seasonally adjusted data represent time-series data from which the effects of repetitive and clearly defined seasonal fluctuations have been removed. Such a practice permits the isolation of trends in the economy that might otherwise be obscured. Seasonal factors include such items as climate, trade practices and social institutions such as Christmas and Easter.

The GDP data are subject to ongoing revision.

Gross Domestic Product at factor cost, at 1981 prices, increased 0.2% in December, following a 0.5% gain in November and a 0.3% decline in October. Output in December stood 2.0% above the level of the corresponding month of last year; the increase in output was 1.5% for goods-producing industries and 2.3% for services-producing industries.

Table 3 shows the prices of selected metals for October, November and December 1989.

Table 4 provides information on Census Value Added for the nonfuel mining industries for the years 1982 to 1988. The preliminary estimate for 1988 indicates an overall increase of about 33% over 1987.

Table 5 provides the time-series data on census value added for the mining and mineral manufacturing industries.

Tables 6 and 7 provide the preliminary estimates for the principal statistics of the nonfuel mining industry by type of mine and by region. The principal statistics include such data as the number of establishments, the number of employees, the value of production and related production costs. Costs include salaries and wages, materials and supplies, and fuel and electricity.



Tables 8, 9 and 10 present the principal statistics of the mineral manufacturing industries from a variety of perspectives.

Table 11 provides historical data on employment, salaries and wages in the mineral manufacturing industries.

Tables 12 and 13 provide data pertaining to the number of strikes and lockouts by industry group, and also more specifically, for the mining and mineral manufacturing industries. These tables are updated versions of Tables 4 and 5 published in the September 1989 issue of this publication.

Tables 14 and 15 show research and development expenditures for mining-related industries from 1983 to 1989 inclusive. These tables are identical to Tables 10 and 11 published in the December 1989 issue of this publication except for the addition of the "Metal fabricating" category.

TABLE 1. CANADA, PRODUCTION OF LEADING MINERALS

		1988			1989			Percentage Changes		
		November	December	Total 12 Months	November	December	Total 12 Months	December 1989 December 1988	December 1989 November 1989	12 months 1989 1988
(000 tonnes except where noted)										
<b>Metals</b>										
Copper		69.7 <sup>r</sup>	66.8 <sup>r</sup>	758.5 <sup>r</sup>	73.9 <sup>r</sup>	73.1	721.9	9.5	-1.1	-4.8
Gold	kg	11 506.3 <sup>r</sup>	13 637.7 <sup>r</sup>	134 812.6 <sup>r</sup>	13 991.3	12 618.7	156 778.9	-7.5	-9.8	16.3
Iron ore		3 739.8	3 963.7	39 933.9 <sup>r</sup>	3 920.0	3 563.1	39 474.0	-10.1	-9.1	-1.2
Lead		22.6 <sup>r</sup>	25.0	351.1 <sup>r</sup>	16.3	16.3	275.7	-35.0	-0.3	-21.5
Molybdenum	t	1 307.0 <sup>r</sup>	1 305.0 <sup>r</sup>	13 535.2 <sup>r</sup>	1 093.0	1 115.0	13 654.3	-14.6	2.0	0.9
Nickel		19.5	19.1 <sup>r</sup>	198.7 <sup>r</sup>	17.8	17.9	196.2	-6.2	0.7	-1.3
Silver	t	127.3 <sup>r</sup>	126.2 <sup>r</sup>	1 443.2 <sup>r</sup>	111.0	130.5	1 284.9	3.4	17.6	-11.0
Uranium <sup>1</sup>	t	993.7 <sup>r</sup>	1 044.4 <sup>r</sup>	12 065.8 <sup>r</sup>	618.0	680.0	10 742.2	-34.9	10.0	-11.0
Zinc		103.9 <sup>r</sup>	90.8 <sup>r</sup>	1 370.0 <sup>r</sup>	76.8	98.0	1 298.2	7.9	27.6	-5.2
<b>Nonmetals</b>										
Asbestos		59.9 <sup>r</sup>	59.5 <sup>r</sup>	710.4 <sup>r</sup>	60.6	53.6	705.8	-9.9	-11.6	-0.6
Clay products	\$000	18 141.2 <sup>r</sup>	12 051.8 <sup>r</sup>	196 724.4 <sup>r</sup>	12 079.6 <sup>r</sup>	7 109.0	195 165.7	-41.0	-41.1	-0.8
Gypsum		969.0 <sup>r</sup>	808.6	9 511.6 <sup>r</sup>	837.6	685.9	8 699.7	-15.2	-18.1	-8.5
Potash K <sub>2</sub> O		632.9 <sup>r</sup>	735.9 <sup>r</sup>	8 154.4 <sup>r</sup>	491.4	649.8	7 074.1	-11.7	32.2	-13.2
Cement		1 059.9	718.5	12 036.2 <sup>r</sup>	1 028.5 <sup>r</sup>	652.8	11 831.6	-9.1	-36.5	-1.7
Lime		220.9 <sup>r</sup>	215.9 <sup>r</sup>	2 518.0 <sup>r</sup>	206.4	191.7	2 551.3	-11.2	-7.2	1.3
Salt		984.1	1 143.6 <sup>r</sup>	10 687.2 <sup>r</sup>	1 077.2	1 062.6	11 139.6	-7.1	-1.4	4.2
<b>Fuels</b>										
Coal		6 077.1 <sup>r</sup>	6 294.7 <sup>r</sup>	70 643.7 <sup>r</sup>	..	..	..	..	..	..
Natural gas	million m <sup>3</sup>	10 296.0 <sup>r</sup>	11 147.0 <sup>r</sup>	113 714.0 <sup>r</sup>	..	..	..	..	..	..
Crude oil and equivalent	000 m <sup>3</sup>	8 417.0 <sup>r</sup>	8 538.0 <sup>r</sup>	100 290.0 <sup>r</sup>	..	..	..	..	..	..

<sup>1</sup> Tonnes uranium (1 tonne U = 1.2999 short tons U<sub>3</sub>O<sub>8</sub>).<sup>r</sup> Revised; .. Not available.

Note: Percentage changes are calculated on the basis of actual production figures as opposed to the rounded figures as shown.



**TABLE 2. CANADA, REAL GROSS DOMESTIC PRODUCT AT FACTOR COST BY INDUSTRY, IN 1981 PRICES, MONTHLY  
(SEASONALLY ADJUSTED AT ANNUAL RATES)**

Industry Sector	1988	1989		Percentage Change December 1989 December 1988	
	December	October	November		December
	(\$ million)				
Total Economy	408 145.5	413 720.2	415 637.4	416 331.1	2.0
Primary Industries					
Agriculture	8 811.9	10 049.8	9 923.7	9 971.3	13.2
Forestry	2 995.5	2 726.3	2 653.2	2 753.8	-8.1
Fishing and Trapping	827.0	601.0	579.6	553.7	-33.0
Mines, Quarries and Oil Wells	23 202.5	22 944.0	23 184.1	23 004.5	-0.9
Mining Industries	8 447.7	8 367.2	8 322.8	8 266.3	-2.1
Gold Mines	1 751.5	2 091.9	2 077.5	2 022.2	15.5
Iron Mines	588.5	631.7	624.5	650.9	10.6
Other Metal Mines	3 744.4	3 451.6	3 455.6	3 431.2	-8.4
Nonmetal Mines	895.4	788.4	802.8	804.0	-10.4
Asbestos Mines	228.0	219.4	218.2	214.6	-5.9
Mineral Fuels					
Coal Mines	1 118.3	1 060.0	1 021.6	1 013.2	-9.4
Crude Petroleum and Natural Gas	13 046.4	12 929.1	13 153.2	12 950.7	-0.7
Secondary Industries					
Manufacturing	78 299.3	78 550.1	78 955.5	79 109.7	1.0
Non-durable Manufacturing	33 210.8	33 475.4	33 520.9	33 508.4	0.9
Durable Manufacturing	45 088.5	45 074.7	45 434.6	45 601.3	1.1
Primary Metal Industries	6 402.6	6 110.7	6 126.3	6 059.1	-5.4
Primary Steel Industries	2 432.8	2 315.4	2 377.8	2 313.0	-4.9
Steel, Pipe and Tube Industry	407.7	479.7	477.3	479.7	17.7
Iron Foundries	456.1	366.7	345.1	329.5	-27.8
Smelting and Refining	2 387.1	2 250.8	2 244.8	2 260.4	-5.3
Nonmetallic Mineral Products	2 351.7	2 341.1	2 334.0	2 359.0	0.3
Clay Products Industry	131.8	106.3	112.3	117.1	-11.2
Cement Industry	304.5	298.5	292.5	282.9	-7.1
Ready-mix Concrete Industry	463.2	416.9	397.8	406.1	-12.3
Construction Industry	31 744.7	32 513.9	32 635.1	32 463.0	2.3
Transportation and Storage	19 434.6	19 605.9	19 719.9	19 225.7	-1.1
Communications	13 104.7	14 351.0	14 479.4	14 568.2	11.2
Other Utilities	11 474.9	11 219.4	11 338.6	12 003.4	4.6
Wholesale Trade	25 504.7	25 035.3	25 258.3	25 609.5	0.4
Retail Trade	26 540.6	26 149.8	26 426.2	26 433.4	-0.4
Finance, Insurance and Real Estate	59 781.3	61 491.8	61 788.0	61 807.5	3.4
Community, Business and Personal Service	41 646.7	42 743.0	42 877.6	43 116.8	3.5

TABLE 3. METAL PRICES - 1989

	October	November	December
<b>Copper</b>			
Electrolytic, U.S. producer f.o.b. refinery, cents (U.S.)	130.259	116.709	107.816
Electrolytic, COMEX, 1st pos. plus 5¢, cents (C.)	130.532	111.450	108.250
Electrolytic, LME Grade A Settlement, cents (U.S.)	129.790	117.538	109.704
<b>Lead</b>			
New York, cents (U.S.)	41.800	40.250	38.000
Montreal, cents (C.)	51.500	48.000	44.500
LME cash, cents (U.S.)	34.072	31.385	32.220
<b>Silver</b>			
New York, cents (U.S.) per troy oz.	513.273	548.310 <sup>r</sup>	552.275
Toronto, cents (C.) per troy oz.	605.710	642.595 <sup>r</sup>	652.480
<b>Zinc</b>			
St. Louis, H.G., cents (U.S.)	79.948	76.922	72.330
Montreal, Electrolytic, cents (C.)	94.500	88.875 <sup>r</sup>	85.500
LME cash, cents (U.S.)	71.789	65.103	65.785
<b>Tin</b>			
New York, dealers, cents (U.S.)	371.611	319.111	316.500
Metals Week, composite, cents (U.S.)	477.136	418.800	413.339
<b>Gold</b>			
London, p.m., US\$ per troy oz.	366.884	394.261	409.385
<b>Mercury</b>			
New York, dealers, US\$ per flask	267.619	285.714	290.000
<b>Nickel</b>			
New York, dealers, cathode (U.S.)	4.701	4.445	3.940
LME cash, US\$	4.729	4.442	3.996
<b>Antimony</b>			
New York, dealers, cents (U.S.)	94.000	85.524	81.000
<b>Platinum</b>			
New York, refined, US\$ per troy oz.	600.000	600.000	600.000
<b>Cadmium</b>			
New York, dealers, US\$	5.810	5.267	5.220
<b>Aluminum</b>			
LME cash, cents (C.)	96.878	91.678	86.202
LME cash, cents (U.S.)	82.555	78.748	74.408
<b>Cobalt</b>			
Shot/cathode/250 kg., US\$	8.400	8.400	8.400
U.S. spot cathode, US\$	7.670	7.517	7.550
<b>Tungsten</b>			
LMB ore, low, US\$/MTU	46.000	44.000	43.000
<b>Molybdenum</b>			
M.W. dealer oxide, US\$	3.091	2.739	2.486
<b>Uranium</b>			
Nuexco, US\$ U <sub>3</sub> O <sub>8</sub>	9.600	9.550	9.400

Average U.S. Exchange Rate for October = 1.1735, November = 1.1642, December = 1.1585.

<sup>r</sup> Revised.

Note: Prices are per pound unless otherwise stated.



**TABLE 4. CANADA, CENSUS VALUE ADDED, TOTAL ACTIVITY<sup>1</sup>, NONFUEL MINING INDUSTRIES, 1982-88**

	1982	1983	1984	1985	1986	1987	1988 <sup>P</sup>
	(\$ million)						
<b>Metallic Minerals</b>							
Nickel-copper-zinc	1 144.9	1 567.3	2 008.1	1 868.5	1 712.9	2 391.5	4 710.5
Gold	566.2	693.6	660.8	635.3	975.3	1 307.2	1 324.3
Uranium	600.1	496.9	772.5	813.1	802.0	898.3	832.5
Silver-lead-zinc	351.1	294.2	465.7	275.3	332.2	562.0	721.6
Iron	761.4	644.6	681.4	817.1	713.8	787.2	667.8
Miscellaneous metal mines	73.7	33.2	72.1	65.4	54.5	84.6	95.5
<b>Total</b>	<b>3 497.4</b>	<b>3 729.8</b>	<b>4 660.6</b>	<b>4 474.7</b>	<b>4 590.7</b>	<b>6 030.8</b>	<b>8 352.2</b>
<b>Industrial Minerals</b>							
Potash	488.5	455.4	717.1	428.8	396.4	578.9	845.6
Sand and gravel	75.6	90.3	104.9	132.9	220.0	306.5	350.8
Stone	109.4	119.5	160.1	207.5	277.6	331.3	326.4
Miscellaneous nonmetals	183.5	201.8	240.5	226.8	289.1	267.9	276.8
Asbestos	267.3	254.9	252.7	217.6	157.1	147.6	138.0
Peat	41.1	43.0	47.1	63.0	74.6	93.5	76.9
Gypsum	26.6	35.1	40.2	50.7	56.6	67.2	57.5
<b>Total</b>	<b>1 192.0</b>	<b>1 200.0</b>	<b>1 562.6</b>	<b>1 327.3</b>	<b>1 471.3</b>	<b>1 792.9</b>	<b>2 072.0</b>
<b>Nonfuel mining industry</b>	<b>4 689.4</b>	<b>4 929.8</b>	<b>6 223.2</b>	<b>5 802.0</b>	<b>6 062.0</b>	<b>7 823.7</b>	<b>10 424.3</b>

<sup>1</sup> Total activity includes sales and head offices.<sup>P</sup> Preliminary.

Note: Totals may not add due to rounding.

TABLE 5. CANADA, CENSUS VALUE ADDED, TOTAL ACTIVITY, MINING AND MINERAL MANUFACTURING INDUSTRIES<sup>1</sup>, 1981-87

	1981	1982	1983	1984	1985	1986	1987
	(\$ million)						
<b>Mining</b>							
Metallic minerals							
Nickel-copper-zinc	2 007.9	1 144.9	1 567.3	2 008.1	1 868.5	1 712.9	2 391.5
Gold	519.0	566.2	693.6	660.8	635.3	975.3	1 307.2
Uranium	610.3	600.1	496.9	772.5	813.1	802.0	898.3
Iron	1 036.0	761.4	644.6	681.4 <sup>r</sup>	817.1	713.8	787.2
Silver-lead-zinc	380.3	351.1	294.2	465.7	275.3	332.2	562.0
Miscellaneous metal mines	150.2	73.7	33.2	72.1	65.4	54.5	84.6
Total	4 703.7	3 497.4	3 729.8	4 660.6	4 474.7	4 590.7	6 030.8
Industrial minerals							
Potash	889.7	488.5	455.4	717.1	428.8	396.4	578.9
Stone	122.5	109.4	119.5	160.1	207.5	277.6	331.3
Sand and gravel	98.3	75.6	90.3	104.9	132.9	220.0	306.5
Miscellaneous nonmetals	171.0	183.5	201.8	240.5	226.8	289.1	267.9
Asbestos	431.5	267.3	252.7	252.7	217.6	157.1	147.6
Peat	47.8	41.1	43.0	47.1	63.0	74.6	93.5
Gypsum	31.3	26.6	35.1	40.2	50.7	56.6	67.2
Total	1 792.1	1 192.0	1 200.0	1 562.6	1 327.3	1 471.3	1 792.9
Fuels							
Petroleum and natural gas	15 924.6	18 899.8	22 171.3	25 008.2	25 428.7	15 044.3	15 843.7
Coal	671.1	838.0	911.1	1 314.2	1 264.5	1 110.4	1 136.4
Total	16 595.7	19 737.8	23 082.4	26 322.4	26 693.2	16 154.7	16 980.1
Total mining industry	23 091.5	24 427.2	28 012.2	32 545.6	32 495.2	22 216.7	24 803.8
<b>Mineral Manufacturing</b>							
Primary metal industries							
Primary steel	2 750.9	2 149.9	2 464.9	2 939.6	3 105.9	3 001.6	..
Smelting and refining	1 808.9	1 493.0	1 912.4	2 236.9	2 202.4	2 372.8	..
Wire and wire products industries <sup>2</sup>	671.7	532.9	554.6	704.2	812.9	848.8	..
Iron foundries	266.0	279.9	326.0	447.7	471.5	510.7	..
Aluminum rolling, casting and extruding	292.8	289.9	328.2	394.7	384.3	424.9	..
Metal rolling, casting and extruding, n.e.s.	210.4	169.2	234.1	323.1	355.2	397.1	..
Steel pipe and tube	378.3	320.3	213.4	389.6	388.2	331.0	..
Copper and alloy rolling, casting and extruding	129.3	101.6	117.7	147.8	134.7	144.0	..
Total <sup>r</sup>	6 508.3	5 336.7	6 151.3	7 583.6	7 855.0	8 030.9	..
Nonmetallic mineral products industries							
Other nonmetallic mineral products industries	483.3	426.7	487.6	571.5	672.4	781.7 <sup>r</sup>	..
Ready-mix concrete industries	430.1	388.6	405.0	397.5	455.3	626.3	..
Concrete products industries	378.5	349.7	333.6	376.5	463.9	522.2	..
Cement industries	421.4	387.4	407.5	421.9	490.7	500.2	..
Glass industries	364.6	339.6	403.8	460.9	466.4	482.4	..
Glass products industries	141.0	144.9	209.8	258.1	320.7	294.9	..
Clay products (domestic clay)	82.0	57.1	78.2	87.7	92.9	129.4	..
Abrasive industries	95.9	80.4	91.4	101.9	97.8	100.5	..
Clay products (imported clay)	50.9	37.9	37.2	37.3	41.4	98.6	..
Lime industries	62.8	60.1	66.2	75.4	70.1	78.0	..
Total	2 510.5	2 272.4	2 520.3	2 788.7	3 171.8	3 614.3 <sup>r</sup>	..

TABLE 5. (cont'd.)

	1981	1982	1983	1984	1985	1986	1987
	(\$ million)						
Fabricated metal products industries							
Stamped and pressed metal products industries	1 447.1	1 265.1	1 303.6	1 417.2	1 612.4	1 729.2	..
Fabricated structural metal products industries	829.1	976.1	795.3	817.4	930.9	1 111.3	..
Hardware, tool and cutlery industry	714.0	653.8	650.7	786.7	932.0	993.4	..
Other metal fabricating industries	810.6	667.2	690.5	745.5	735.0	729.6	..
Ornamental and architectural metal products industries	622.7	529.5	491.2	519.9	608.4	722.2	..
Machine shop industry	449.9	444.7	451.3	549.5	611.2	636.6	..
Power boiler and heat exchanger industry	385.8	310.0	319.1	298.1	351.1	357.7	..
Heating equipment industry	206.8	188.5	182.0	162.6	243.9	262.6	..
Total <sup>1</sup>	5 466.1	5 034.8	4 883.7	5 296.9	6 024.8	6 542.6	..
Petroleum and coal products industries							
Petroleum refining	2 641.5	2 108.4	2 563.7	2 498.2	2 478.8	1 755.6 <sup>r</sup>	..
Other petroleum and coal products industries	39.3	39.9	52.6	42.1	41.0	98.9	..
Manufacturers of lubricating oil and greases	35.0	31.7	24.8	56.1	75.7	82.5	..
Total	2 715.8	2 180.0	2 641.1	2 596.4	2 595.5	1 936.9 <sup>r</sup>	..
Total mineral manufacturing	17 200.6	14 824.0	16 196.4	18 265.6	19 647.0	20 124.7 <sup>r</sup>	..
Total mining and mineral manufacturing	40 292.1	39 251.2	44 208.6	50 811.2	52 142.2	42 341.4 <sup>r</sup>	24 803.8 <sup>3</sup>

<sup>1</sup> The Fabricated Metal Products Industry has been added. <sup>2</sup> Wire and wire products have been included in Stage III.

<sup>3</sup> Includes mining only.

n.e.s. Not elsewhere specified; <sup>r</sup> Revised; .. Not available.

Note: Totals may not add due to rounding.

**TABLE 6. CANADA, PRINCIPAL STATISTICS OF THE NONFUEL MINING INDUSTRY<sup>1</sup>, 1988p**

	Mining Activity								Total Activity <sup>2</sup>		
	Production and Related Workers				Costs						
	Establishments	Employees	Person-hours Paid	Salaries and Wages	Fuel and Electricity	Materials and Supplies	Value of Production	Value Added	Employees	Salaries and Wages	Value Added
	(number)	(number)	(000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(number)	(\$000)	(\$000)
<b>Metals</b>											
Nickel-copper-zinc	25	13 472	29 785	541 718	212 317	1 657 496	6 560 872	4 691 059	18 682	779 474	4 710 524
Gold	66	9 339	20 380	377 662	98 860	499 259	1 929 096	1 330 977	12 068	486 311	1 324 325
Uranium	5	4 214	8 264	192 691	52 818	162 662	1 051 732	835 252	4 989	239 757	832 526
Silver-lead-zinc	14	2 889	6 833	124 353	70 348	671 850	1 461 052	718 855	4 414	189 439	721 561
Iron	7	4 631	11 104	208 015	177 896	425 605	1 176 904	673 403	6 174	275 335	667 796
Miscellaneous metal mines <sup>3</sup>	7	840	1 784	28 320	12 190	51 748	159 534	95 596	1 160	40 645	95 477
Total	124	35 385	78 150	1 472 758	624 430	3 469 619	12 439 190	8 345 141	47 487	2 010 960	8 352 208
<b>Industrials</b>											
Potash	10	2 973	6 328	108 232	108 224	124 559	1 081 249	848 466	3 914	152 672	845 578
Sand and gravel	149	1 880	4 289	58 668	31 571	97 816	428 490	299 104	3 172	104 544	350 844
Stone	128	2 240	5 259	72 608	34 312	126 942	476 105	314 851	2 886	95 455	326 432
Miscellaneous nonmetals <sup>4</sup>	33	1 714	3 929	59 484	27 866	46 795	351 795	277 135	2 450	88 128	276 767
Asbestos	4	1 912	3 960	66 139	33 687	74 388	242 151	134 076	2 592	95 534	138 000
Peat	61	1 317	2 981	26 454	4 971	24 028	97 204	68 204	1 567	33 459	76 889
Gypsum	10	643	1 512	17 996	6 511	22 271	86 331	57 549	937	29 477	57 536
Total	395	12 679	28 258	409 580	247 142	516 798	2 763 326	1 999 386	17 518	599 268	2 072 048
Total nonfuel mining industry	519	48 064	106 407	1 882 338	871 572	3 986 417	15 202 516	10 344 526	65 005	2 610 228	10 424 256

<sup>1</sup> Cement manufacturing, lime manufacturing, clay and clay products (domestic clays) are included in the mineral manufacturing industry. <sup>2</sup> Total activity includes sales and head offices.

<sup>3</sup> Includes molybdenum. <sup>4</sup> Includes salt.

p Preliminary.

Note: Totals may not add due to rounding.



**TABLE 7. CANADA, PRINCIPAL STATISTICS OF THE NONFUEL MINING INDUSTRY<sup>1</sup> BY REGION, 1988<sup>P</sup>**

	Mines, Quarries and Oil Well Activity										
	Production and Related Workers							Total Activity <sup>2</sup>			
					Costs						
	Establishments	Employees	Person-hours Paid	Salaries and Wages	Fuel and Electricity	Materials and Supplies	Value of Production	Value Added	Employees	Salaries and Wages	Value Added
	(number)	(number)	(000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(number)	(\$000)	(\$000)
Atlantic Provinces	67	6 032	13 430	216 033	118 913	551 052	1 429 680	759 715	7 585	278 333	755 853
Quebec	183	10 686	23 630	409 783	191 063	667 835	2 017 622	1 158 725	14 376	561 523	1 191 553
Ontario	145	17 854	38 947	704 293	227 404	1 357 021	5 655 465	4 071 039	24 457	988 184	4 123 167
Prairie Provinces	70	6 781	14 689	259 526	153 545	448 003	3 245 228	2 643 681	9 018	364 069	2 636 814
British Columbia	43	5 301	11 254	216 296	119 280	668 166	1 890 373	1 102 927	7 085	297 685	1 115 912
Yukon and Northwest Territories	11	1 410	4 459	76 408	61 367	294 340	964 147	608 440	2 484	120 435	600 957
Canada	519	48 064	106 407	1 882 338	871 572	3 986 417	15 202 516	10 344 526	65 005	2 610 228	10 424 256

<sup>1</sup> Cement manufacturing, lime manufacturing, clay and clay products are included in the mineral manufacturing industry. <sup>2</sup> Total activity includes sales and head offices.

<sup>P</sup> Preliminary.

**TABLE 8. CANADA, PRINCIPAL STATISTICS OF THE MINERAL MANUFACTURING INDUSTRIES<sup>1</sup>, 1980-86**

	Mineral Manufacturing Activity								Total Activity <sup>2</sup>		
	Production and Related Workers				Costs						
	Establishments	Employees	Person-hours Paid	Wages	Fuel and Electricity	Materials and Supplies	Value of Shipments	Value Added	Employees	Salaries and Wages	Value Added
	(number)	(number)	(000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(number)	(\$000)	(\$000)
1980	7 229	270 529	565 988	4 991 451	1 411 101	28 394 177	43 895 507	14 758 224	366 120	7 262 688	15 160 467
1981	7 196	261 364	546 732	5 393 636	1 720 151	34 570 420	51 870 979	16 791 049	361 883	8 076 300	17 200 686
1982	5 687	229 518	475 378	5 333 201	1 728 740	34 241 605	50 045 037	14 497 245	321 785	8 126 238	14 823 990
1983	7 370	216 944	447 947	5 420 307	1 905 777	34 720 416	52 773 875	15 861 491	301 112	8 143 674	16 196 749
1984	7 511	223 816	470 367	5 948 626	2 125 032	37 738 117	57 207 764	17 980 271	304 309	8 719 151	18 265 131
1985	7 625	238 544	506 377	6 507 081	2 229 270	39 497 925	61 241 939	19 305 730	313 850	9 271 447	19 646 938
1986 <sup>r</sup>	7 841	248 039	524 184	6 829 899	2 096 145	31 806 478	54 521 641	19 788 464	319 950	9 563 918	20 124 687

<sup>1</sup> All years have been revised to include the Fabricated Metal Products Industry. <sup>2</sup> Total activity includes sales and head offices.

<sup>r</sup> Revised.

TABLE 9. CANADA, PRINCIPAL STATISTICS OF THE MINERAL MANUFACTURING INDUSTRIES, 1986

	Mineral Manufacturing Activity								Total Activity <sup>1</sup>		
	Production and Related Workers				Costs						
	Establish- ments	Employees	Person- hours Paid	Wages	Fuel and Electricity	Materials and Supplies	Value of Shipments	Value Added	Employees	Salaries and Wages	Value Added
	(number)	(number)	(000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(number)	(\$000)	(\$000)
<b>Primary Metal Industries</b>											
Primary steel	58	35 193	76 001	1 258 271	501 083	4 161 518	7 753 946	2 990 359	46 461	1 732 803	3 001 589
Smelting and refining	34	20 233	40 523	720 306	408 615	1 892 980	4 744 013	2 379 504	29 058	1 115 267	2 372 789
Wire and wire products industries <sup>2</sup>	331	11 886	24 969	291 528	40 678	970 957	1 832 669	822 648	15 262	400 766	848 825
Iron foundries	100	6 345	13 803	181 646	40 890	269 340	812 837	510 255	7 547	228 419	510 681
Aluminum rolling, casting and extruding	71	4 938	10 893	153 133	37 571	946 194	1 399 970	425 073	6 200	205 352	424 927
Metal rolling, casting and extruding, n.e.s.	104	5 251	11 595	139 859	28 527	471 775	891 139	397 298	6 357	178 595	397 072
Steel pipe and tube	38	3 563	7 857	113 820	18 982	622 518	985 473	329 316	4 829	162 693	330 955
Copper and alloy rolling, casting and extruding	38	2 626	5 473	66 423	14 414	357 731	521 587	147 486	3 059	83 378	144 012
Total <sup>3</sup>	774	90 035	191 114	2 924 986	1 090 760	9 693 013	18 941 634	8 001 939	118 773	4 107 273	8 030 850
<b>Nonmetallic Mineral Products Industries</b>											
Ready-mix concrete	595	8 779	18 414	241 196	53 971	825 897	1 488 664	609 609	10 422	294 410	626 340
Cement	24	2 205	4 919	85 531	160 698	173 174	831 734	495 505	3 514	136 166	500 220
Primary glass and glass containers	18	5 863	12 329	171 527	65 064	190 242	736 912	482 326	7 722	241 583	482 438
Glass products	165	4 852	9 890	117 548	15 346	324 266	632 933	290 805	5 726	147 903	294 876
Gypsum products	28	1 568	3 367	44 545	37 801	212 318	522 556	272 930	2 195	65 837	283 901
Mineral insulating products	46	2 181	4 680	62 477	33 687	153 706	353 846	165 289	3 464	109 231	237 702
Other concrete products	297	4 252	8 738	89 540	15 834	182 752	426 955	230 798	4 771	109 125	235 853
Structural concrete products	61	2 187	4 684	60 506	5 728	102 286	274 693	165 569	2 697	79 150	164 283
Clay products (domestic)	36	1 210	2 642	32 359	28 940	26 311	182 007	124 777	1 605	46 710	129 418
Other nonmetallic mineral products	155	2 113	4 315	43 653	9 774	86 245	210 580	117 260	2 447	54 272	124 530
Concrete pipe	51	1 402	2 994	36 203	5 923	81 782	211 158	121 680	1 706	48 621	122 022
Abrasives	30	1 347	2 724	33 943	32 342	99 694	227 745	96 953	1 827	50 563	100 513
Refractory products	25	1 035	2 175	26 836	8 080	79 390	179 184	93 707	1 616	44 820	99 872
Clay products (imported)	56	1 806	3 737	40 066	8 380	41 410	147 035	97 288	2 165	49 930	98 625
Lime	14	593	1 271	20 773	42 532	24 567	144 365	76 755	778	28 081	78 025
Asbestos products industry <sup>4</sup>	12	618	1 276	14 757	2 548	26 636	61 644	30 861	835	21 485	35 654
Total <sup>5</sup>	1 613	42 011	88 155	1 121 460	526 648	2 630 676	6 632 011	3 472 112	53 490	1 527 887	3 614 272

**Fabricated Metal Products Industries**

Stamped and pressed metal products industries	983	25 765	54 647	589 195	69 379	2 782 148	4 504 885	1 678 961	31 584	790 332	1 729 180
Fabricated structural metal products industries	415	15 229	31 880	390 012	27 363	949 990	2 040 980	1 080 636	19 213	518 044 <sup>r</sup>	1 111 347
Hardware, tool and cutlery industry	913	18 282	38 682	435 083	20 324	569 226	1 538 296	961 056	21 164	529 986	993 378
Other metal fabricating industries	536	12 270	25 803	277 264	30 850	706 299	1 432 641	706 519	15 170	371 922 <sup>r</sup>	729 598
Ornamental and architectural metal products industries	790	14 314	30 265	295 982	18 883	799 284	1 527 796	715 849	17 462	392 502	722 209
Machine shop industry	1 475	16 319	33 820	363 226	16 694	428 340	1 074 230	630 449	17 259	394 824	636 621
Power boiler and heat exchanger industry	42	3 065	6 448	81 367	4 398	177 623	540 845	350 480	4 990	144 659	357 657
Heating equipment industry	174	4 390	9 248	86 168	5 223	271 588	531 958	258 746	5 779	122 069	262 637
<b>Total<sup>1</sup></b>	<b>5 328</b>	<b>109 634</b>	<b>230 793</b>	<b>2 518 297</b>	<b>193 114</b>	<b>6 684 498</b>	<b>13 191 631</b>	<b>6 382 696</b>	<b>132 621</b>	<b>3 264 338</b>	<b>6 542 627</b>
<b>Petroleum and Coal Products Industries</b>											
Petroleum refining products	31	5 227	11 673	232 528	269 509 <sup>r</sup>	12 395 312	15 145 368	1 752 822 <sup>r</sup>	13 287	608 838	1 755 615 <sup>r</sup>
Other petroleum and coal products	60	529	1 104	14 179	10 539	195 098	315 959	98 786	778	23 840	98 856
Lubricating oils and greases	35	603	1 345	18 449	5 575	207 881	295 038	80 109	1 001	31 742	82 467
<b>Total</b>	<b>126</b>	<b>6 359</b>	<b>14 122</b>	<b>265 156</b>	<b>285 623<sup>r</sup></b>	<b>12 798 291</b>	<b>15 756 365</b>	<b>1 931 717<sup>r</sup></b>	<b>15 066</b>	<b>664 420</b>	<b>1 936 938<sup>r</sup></b>
<b>Total, mineral manufacturing industries<sup>2</sup></b>	<b>7 841</b>	<b>248 039</b>	<b>524 184</b>	<b>6 829 899</b>	<b>2 096 145</b>	<b>31 806 478</b>	<b>54 521 641</b>	<b>19 788 464</b>	<b>319 950</b>	<b>9 563 918</b>	<b>20 124 687</b>

<sup>1</sup> Total activity includes sales and head offices. <sup>2</sup> Wire and wire products have been included in Stage III.

n.e.s. Not elsewhere specified; <sup>r</sup> Revised.

Note: Totals may not add due to rounding.



**TABLE 10. CANADA, PRINCIPAL STATISTICS OF THE MINERAL MANUFACTURING INDUSTRY BY REGION<sup>1</sup>, 1986**

	Mineral, Manufacturing Activity								Total Activity <sup>2</sup>		
	Production and Related Workers				Costs						
	Establishments	Employees	Person-hours Paid	Wages	Fuel and Electricity	Materials and Supplies	Value of Shipments	Value Added	Employees	Salaries and Wages	Value Added
	(number)	(number)	(000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(number)	(\$000)	(\$000)
<b>Primary Metals Industry</b>											
Atlantic Provinces	9	x	x	x	x	x	x	x	x	x	x
Quebec	111	18 739	38 420	655 459	383 902	2 490 318	5 110 743	2 210 860	26 585	993 190	2 194 281
Ontario	228	48 263	105 197	1 629 384	521 180	5 147 854	9 732 116	3 978 087	62 429	2 230 182	3 996 084
Prairie Provinces	49	x	x	x	x	x	x	x	x	x	x
British Columbia	46	4 585	8 988	154 410	15 048	351 657	845 845	468 047	6 226	225 783	468 660
Yukon and Northwest Territories	-	-	-	-	-	-	-	-	-	-	-
<b>Canada</b>	<b>443</b>	<b>78 149</b>	<b>166 145</b>	<b>2 633 458</b>	<b>1 050 082</b>	<b>8 722 056</b>	<b>17 108 965</b>	<b>7 179 291</b>	<b>103 511</b>	<b>3 706 507</b>	<b>7 182 025</b>
<b>Nonmetallic Mineral Products Industry</b>											
Atlantic Provinces	117	x	x	x	x	x	x	x	x	x	x
Quebec	396	x	x	x	x	x	x	x	x	x	x
Ontario	590	21 367	45 569	580 102	269 874	1 368 063	3 526 753	1 880 291	27 437	801 450	1 985 605
Prairie Provinces	317	5 532	11 505	147 598	61 954	386 754	919 687	469 536	6 982	196 306	477 540
British Columbia	193	2 828	5 814	91 023	37 625	206 129	488 574	242 987	3 777	126 175	254 695
Yukon and Northwest Territories	-	-	-	-	-	-	-	-	-	-	-
<b>Canada</b>	<b>1 613<sup>r</sup></b>	<b>42 011<sup>r</sup></b>	<b>88 155<sup>r</sup></b>	<b>1 121 460<sup>r</sup></b>	<b>526 648<sup>r</sup></b>	<b>2 630 676<sup>r</sup></b>	<b>6 632 011<sup>r</sup></b>	<b>3 472 112<sup>r</sup></b>	<b>53 490<sup>r</sup></b>	<b>1 527 887<sup>r</sup></b>	<b>3 614 272<sup>r</sup></b>
<b>Fabricated Metal Products Industry<sup>3</sup></b>											
Atlantic Provinces	182	2 433	5 086	54 297	4 454	147 542	265 212	113 405	3 135	72 833	118 237
Quebec	1 215	27 385	55 722	589 847	54 947	1 509 528	3 010 086	1 460 038	33 670	782 218	1 487 715
Ontario	3 011	74 167	158 919	1 736 078	142 728	4 952 230	9 626 750	4 583 491	88 776	2 227 985	4 695 649
Prairie Provinces	692	10 666	22 241	244 187	18 726	606 288	1 242 872	623 046	13 636	332 558	645 275
British Columbia	559	6 869	13 795	185 416	12 939	439 868	879 380	425 363	8 666	249 511	444 576
Yukon and Northwest Territories	-	-	-	-	-	-	-	-	-	-	-
<b>Canada</b>	<b>5 659</b>	<b>121 520</b>	<b>255 762</b>	<b>2 809 825</b>	<b>233 792</b>	<b>7 655 455</b>	<b>15 024 300</b>	<b>7 205 344</b>	<b>147 883</b>	<b>3 665 104<sup>r</sup></b>	<b>7 391 452</b>

**Refined Petroleum and Coal  
Products Industry**

Atlantic Provinces	7	x	x	x	x	x	x	x	x	x	x
Quebec	26	1 098	2 509	42 680	74 308	2 325 901	2 738 626	99 930	1 498	60 965	100 144
Ontario	46	2 597	5 959	111 759	111 971	4 680 206	5 683 562	671 784	7 512	318 504	657 876
Prairie Provinces	32	x	x	x	x	x	x	x	x	x	x
British Columbia	14	x	x	x	x	x	x	x	x	x	x
Yukon and Northwest Territories	1	x	x	x	x	x	x	x	x	x	x
<b>Canada</b>	<b>126</b>	<b>6 359</b>	<b>14 122</b>	<b>265 156</b>	<b>285 623<sup>r</sup></b>	<b>12 798 291</b>	<b>15 756 365</b>	<b>1 931 717<sup>r</sup></b>	<b>15 066</b>	<b>664 420</b>	<b>1 936 938<sup>r</sup></b>

**Total Mineral Manufacturing  
Industry**

Atlantic Provinces	315	x	x	x	x	x	x	x	x	x	x
Quebec	1 748	x	x	x	x	x	x	x	x	x	x
Ontario	3 875	146 394	315 644	4 057 323	1 045 753	16 148 353	28 569 181	11 113 653	186 154	5 578 121	11 335 214
Prairie Provinces	1 090	x	x	x	x	x	x	x	x	x	x
British Columbia	812	x	x	x	x	x	x	x	x	x	x
Yukon and Northwest Territories	1	x	x	x	x	x	x	x	x	x	x
<b>Canada<sup>r</sup></b>	<b>7 841</b>	<b>248 039</b>	<b>524 184</b>	<b>6 829 899</b>	<b>2 096 145</b>	<b>31 806 478</b>	<b>54 521 641</b>	<b>19 788 464</b>	<b>319 950</b>	<b>9 563 918</b>	<b>20 124 687</b>

<sup>1</sup> The Fabricated Metal Products Industry is now included. <sup>2</sup> Total activity includes sales and head offices. <sup>3</sup> For reasons of confidentiality, SIC 305 (Wire and wire products), normally included in Primary Metals is included in Fabricated Metal Products.  
x Confidential; - Nil; <sup>r</sup> Revised.

**TABLE 11. CANADA, EMPLOYMENT, SALARIES AND WAGES IN THE MINERAL MANUFACTURING INDUSTRIES<sup>1</sup>, 1980-86**

	Unit	1980	1981	1982	1983	1984	1985	1986
<b>Primary Metal Industries<sup>2</sup></b>								
Production and related workers	Number	111 760 <sup>r</sup>	105 518 <sup>r</sup>	92 621 <sup>r</sup>	87 769 <sup>r</sup>	92 336 <sup>r</sup>	92 695 <sup>r</sup>	90 035 <sup>r</sup>
Salaries and wages	\$000	2 213 669 <sup>r</sup>	2 355 537 <sup>r</sup>	2 368 939 <sup>r</sup>	2 445 267 <sup>r</sup>	2 818 413 <sup>r</sup>	2 940 777 <sup>r</sup>	2 924 986 <sup>r</sup>
Annual average salary and wage	\$	19 807 <sup>r</sup>	22 324 <sup>r</sup>	25 577 <sup>r</sup>	27 860 <sup>r</sup>	30 523 <sup>r</sup>	31 725 <sup>r</sup>	32 487 <sup>r</sup>
Administrative and office workers	Number	35 509 <sup>r</sup>	36 959 <sup>r</sup>	34 563 <sup>r</sup>	31 076 <sup>r</sup>	30 826 <sup>r</sup>	29 467 <sup>r</sup>	28 738 <sup>r</sup>
Salaries and wages	\$000	880 797 <sup>r</sup>	1 039 467 <sup>r</sup>	1 104 327 <sup>r</sup>	1 055 120 <sup>r</sup>	1 131 842 <sup>r</sup>	1 159 060 <sup>r</sup>	1 182 287 <sup>r</sup>
Annual average salary and wage	\$	24 805 <sup>r</sup>	28 125 <sup>r</sup>	31 951 <sup>r</sup>	33 953 <sup>r</sup>	36 717 <sup>r</sup>	39 334 <sup>r</sup>	41 140 <sup>r</sup>
Total primary metal industries <sup>2</sup>								
Employees	Number	147 269 <sup>r</sup>	142 477 <sup>r</sup>	127 184 <sup>r</sup>	118 845 <sup>r</sup>	123 162 <sup>r</sup>	122 162 <sup>r</sup>	118 773 <sup>r</sup>
Salaries and wages	\$000	3 094 466 <sup>r</sup>	3 395 004 <sup>r</sup>	3 473 266 <sup>r</sup>	3 500 387 <sup>r</sup>	3 950 255 <sup>r</sup>	4 099 837 <sup>r</sup>	4 107 273 <sup>r</sup>
Annual average salary and wage	\$	21 012 <sup>r</sup>	23 828 <sup>r</sup>	27 309 <sup>r</sup>	29 453 <sup>r</sup>	32 074 <sup>r</sup>	33 561 <sup>r</sup>	34 581 <sup>r</sup>
<b>Nonmetallic Mineral Products Industries</b>								
Production and related workers	Number	40 799	40 145	33 997	34 097	36 155	38 763	42 011 <sup>r</sup>
Salaries and wages	\$000	743 254	818 566	751 915	800 755	883 604	1 001 780	1 121 460 <sup>r</sup>
Annual average salary and wage	\$	18 217	20 390	22 117	23 485	24 439	25 844	26 694 <sup>r</sup>
Administrative and office workers	Number	15 287	15 124	13 952	13 353	12 738	11 842	11 479 <sup>r</sup>
Salaries and wages	\$000	333 815	369 899	383 405	391 901	394 619	397 129	406 427 <sup>r</sup>
Annual average salary and wage	\$	21 837	24 458	27 480	29 349	30 980	33 536	35 406 <sup>r</sup>
Total nonmetallic mineral products								
Employees	Number	56 086	55 269	47 949	47 450	48 893	50 605	53 490 <sup>r</sup>
Salaries and wages	\$000	1 077 069	1 188 455	1 135 320	1 192 656	1 278 223	1 398 911	1 527 887 <sup>r</sup>
Annual average salary and wage	\$	19 204	21 503	23 678	25 135	26 143	27 644	28 564 <sup>r</sup>
<b>Fabricated Metal Products Industries</b>								
Production and related workers	Number	109 693 <sup>r</sup>	107 269 <sup>r</sup>	94 779 <sup>r</sup>	87 661 <sup>r</sup>	88 787 <sup>r</sup>	100 650 <sup>r</sup>	109 634 <sup>r</sup>
Salaries and wages	\$000	1 830 842 <sup>r</sup>	1 970 334 <sup>r</sup>	1 946 325 <sup>r</sup>	1 910 181 <sup>r</sup>	1 983 782 <sup>r</sup>	2 298 665 <sup>r</sup>	2 518 297 <sup>r</sup>
Annual average salary and wage	\$	16 691 <sup>r</sup>	18 368 <sup>r</sup>	20 535 <sup>r</sup>	21 791 <sup>r</sup>	22 343 <sup>r</sup>	22 838 <sup>r</sup>	22 970 <sup>r</sup>
Administration and office workers	Number	33 026 <sup>r</sup>	34 254 <sup>r</sup>	30 372 <sup>r</sup>	28 239 <sup>r</sup>	26 203 <sup>r</sup>	23 694 <sup>r</sup>	22 987 <sup>r</sup>
Salaries and wages	\$000	718 760 <sup>r</sup>	836 878 <sup>r</sup>	803 920 <sup>r</sup>	785 881 <sup>r</sup>	778 057 <sup>r</sup>	751 973 <sup>r</sup>	746 041 <sup>r</sup>
Annual average salary and wage	\$	21 763 <sup>r</sup>	24 432 <sup>r</sup>	26 469 <sup>r</sup>	27 830 <sup>r</sup>	29 693 <sup>r</sup>	31 737 <sup>r</sup>	32 455 <sup>r</sup>
Total fabricated metal products industries								
Employees	Number	142 719 <sup>r</sup>	141 523 <sup>r</sup>	125 151 <sup>r</sup>	115 900 <sup>r</sup>	114 990 <sup>r</sup>	124 344 <sup>r</sup>	132 621 <sup>r</sup>
Salaries and wages	\$000	2 549 602 <sup>r</sup>	2 807 212 <sup>r</sup>	2 750 245 <sup>r</sup>	2 696 062 <sup>r</sup>	2 761 839 <sup>r</sup>	3 050 638 <sup>r</sup>	3 264 338 <sup>r</sup>
Annual average salary and wage	\$	17 864 <sup>r</sup>	19 836 <sup>r</sup>	21 975 <sup>r</sup>	23 262 <sup>r</sup>	24 018 <sup>r</sup>	24 534 <sup>r</sup>	24 614 <sup>r</sup>
<b>Petroleum and Coal Products Industries</b>								
Production and related workers	Number	8 277	8 432	8 121	7 417	6 538 <sup>r</sup>	6 436 <sup>r</sup>	6 359
Salaries and wages	\$000	203 686	249 199	266 022	264 104	262 827 <sup>r</sup>	265 859 <sup>r</sup>	265 156
Annual average salary and wage	\$	24 609	29 554	32 757	35 608	40 200 <sup>r</sup>	41 308 <sup>r</sup>	41 698
Administrative and office workers	Number	11 769	14 182	13 380	11 500	10 726 <sup>r</sup>	10 303 <sup>r</sup>	8 707
Salaries and wages	\$000	337 865	436 430	501 385	490 465	466 006 <sup>r</sup>	456 202 <sup>r</sup>	399 264
Annual average salary and wage	\$	28 708	30 773	37 473	42 649	43 446 <sup>r</sup>	44 279 <sup>r</sup>	45 856
Total petroleum and coal products industries								
Employees	Number	20 046	22 614	21 501	18 917	17 264	16 739	15 066
Salaries and wages	\$000	541 551	685 629	767 407	754 569	728 833	722 061	664 420
Annual average salary and wage	\$	27 015	30 319	35 692	39 888	42 217	43 136	44 101
<b>Total Mineral Manufacturing Industries</b>								
Production and related workers	Number	270 529	261 364	229 518	216 944	223 816	238 544	248 039 <sup>r</sup>
Salaries and wages	\$000	4 991 451	5 393 636	5 333 201	5 420 307	5 948 626	6 507 081	6 829 899 <sup>r</sup>
Annual average salary and wage	\$	18 451	20 636	23 237	24 985	26 578	27 278	27 536 <sup>r</sup>
Administrative and office workers	Number	95 591	100 519	92 267	84 168	80 493	75 306	71 911 <sup>r</sup>
Salaries and wages	\$000	2 271 237	2 682 664	2 793 037	2 723 367	2 770 525	2 764 366	2 734 019 <sup>r</sup>
Annual average salary and wage	\$	23 760	26 688	30 271	32 356	34 419	36 708	38 019 <sup>r</sup>
Total mineral manufacturing industries								
Employees	Number	366 120	361 883	321 785	301 112	304 309	313 850	319 950 <sup>r</sup>
Salaries and wages	\$000	7 262 688	8 076 300	8 126 238	8 143 674	8 719 151	9 271 447	9 563 918 <sup>r</sup>
Annual average salary and wage	\$	19 837	22 317	25 254	27 045	28 652	29 541	29 892 <sup>r</sup>

<sup>1</sup> All years have been revised to include the Fabricated Metal Products Industry. <sup>2</sup> Wire and Wire Products have been included in Stage III.<sup>r</sup> Revised.

TABLE 12. CANADA, NUMBER OF STRIKES AND LOCKOUTS BY INDUSTRIES, 1986-88

	1986			1987			1988 <sup>p</sup>		
	Strikes and Lockouts	Workers Involved	Duration in Person-days	Strikes and Lockouts	Workers Involved	Duration in Person-days	Strikes and Lockouts	Workers Involved	Duration in Person-days
Agriculture	0	0	0	1	18	3 800	1	18	4 610
Forestry	9	27 813	2 024 930	5	882	2 510	4	963	19 520
Fishing and trapping	0	0	0	0	0	0	0	0	0
Mines	14	8 796	351 870	14	8 902	228 440	13	4 481	160 014
Manufacturing	317	54 977	1 386 070	302	82 463	1 756 362	260	49 621	1 393 266
Construction	48	151 941	1 963 500	21	8 363	53 620	21	34 156	632 030
Transportation and utilities	59	23 859	314 160	64	125 408	689 640	48	38 602	2 011 890
Trade	109	8 443	234 940	94	8 420	326 820	85	7 351	189 615
Finance, insurance and real estate	13	885	32 570	13	622	29 930	9	489	29 990
Service	125	133 695	302 705	113	58 750	549 995	85	36 183	427 208
Public administration	41	73 206	506 860	28	288 707	326 920	24	35 935	168 890
Various industries	0	0	0	0	0	0	0	0	0
All industries	735	483 615	7 117 605 <sup>r</sup>	655 <sup>r</sup>	582 535 <sup>r</sup>	3 968 037 <sup>r</sup>	550	207 799	5 037 033

<sup>p</sup> Preliminary; <sup>r</sup> Revised.



**TABLE 13. CANADA, NUMBER OF STRIKES AND LOCKOUTS BY MINING AND MINERAL MANUFACTURING INDUSTRIES, 1986-88**

	1986			1987			1988 <sup>a</sup>		
	Strikes and Lockouts	Workers Involved	Duration in Person-days	Strikes and Lockouts	Workers Involved	Duration in Person-days	Strikes and Lockouts	Workers Involved	Duration in Person-days
<b>Mines</b>	14	8 796	351 870	14	8 902	228 440	13 <sup>r</sup>	4 481 <sup>r</sup>	160 014 <sup>r</sup>
Metals	7	4 700	52 920	10	7 551	221 170	9 <sup>r</sup>	3 833 <sup>r</sup>	122 704 <sup>r</sup>
Mineral fuels	4	2 977	231 870	2	1 060	1 000	0 <sup>r</sup>	0 <sup>r</sup>	0 <sup>r</sup>
Nonmetals	3	1 119	67 080	1	272	6 210	3 <sup>r</sup>	626 <sup>r</sup>	36 850 <sup>r</sup>
Quarries	0	0	0	1	19	60	1	22	460
<b>Mineral Manufacturing</b>	41	7 136	228 070	41	12 203	451 590	31	8 620	223 515
Primary metals	14	4 422	138 750	21	9 107	369 800	16	6 329	168 095
Nonmetallic mineral products	26	2 598	89 070	20	3 096	81 790	15	2 291	55 420
Petroleum and coal products	1	116	250	0	0	0	0	0	0

<sup>a</sup> Preliminary; <sup>r</sup> Revised.

**TABLE 14. CANADA, TOTAL INTRAMURAL RESEARCH AND DEVELOPMENT EXPENDITURES FOR MINING-RELATED INDUSTRIES IN CURRENT AND CONSTANT (1981) DOLLARS, 1983-89**

	1983	1984	1985	1986	1987	1988 <sup>p</sup>	1989 <sup>f</sup>
	(\$ million)						
<b>Current Dollars</b>							
Mining industry	92	115	119	90	76	86	88
Mines	43	48	51	52	47	53	59
Oil and gas wells	49	67	69	38	29	33	29
Mineral manufacturing	298	356	342	279	274	308	330
Ferrous primary metals	22	26	26	27	30	32	32
Nonferrous primary metals	82	95	92	88	111	125	130
Nonmetallic mineral products	10	17	19	16	15	14	16
Petroleum products	184	218	205	148	118	137	152
Metal fabricating	28	24	30	34	33	40	43
<b>Constant Dollars</b>							
Mining industry	81	98	99	72	59	65 <sup>r</sup>	62
Mines	38	40	42	41	37	40	42 <sup>r</sup>
Oil and gas wells	43	57	57	31	22	25	21 <sup>r</sup>
Mineral manufacturing	261	303	283	225	210	228	234 <sup>r</sup>
Ferrous primary metals	19	22	22	22	23	24	23 <sup>r</sup>
Nonferrous primary metals	72	81	76	71	85	92	92 <sup>r</sup>
Nonmetallic mineral products	9	14	16	13	11	11	11
Petroleum products	161	186	169	119	91	101	108 <sup>r</sup>
Metal fabricating	24	20	25	28	25	30	31

<sup>p</sup> Preliminary; <sup>f</sup> Forecast; <sup>r</sup> Revised.

Note: Totals may not add due to rounding.

**TABLE 15. CANADA, CURRENT AND CAPITAL INTRAMURAL RESEARCH AND DEVELOPMENT EXPENDITURES FOR MINING-RELATED INDUSTRIES, 1983-89**

	1983	1984	1985	1986	1987	1988 <sup>p</sup>	1989 <sup>f</sup>
	(\$ million)						
<b>Capital Expenditures</b>							
Mining industry	21	21	27	11	7	9	11
Mines	5	5	4	8	4	4	7
Oil and gas wells	16	16	23	3	3	5	3
Mineral manufacturing	48	97	82	30	34	40	53
Ferrous primary metals	1	1	3	3	4	5	4
Nonferrous primary metals	5	9	5	7	15	12	13
Nonmetallic mineral products	1	6	6	3	2	1	2
Petroleum products	41	81	68	17	13	22	34
Metal fabricating	3	3	2	4	4	3	4
<b>Current Expenditures</b>							
Mining industry	71	94	92	79	69	77	77
Mines	38	43	47	44	43	49	52
Oil and gas wells	33	51	46	35	26	28	26
Mineral manufacturing	250	259	260	249	240	268	277
Ferrous primary metals	21	25	23	24	26	27	28
Nonferrous primary metals	77	86	87	81	96	113	117
Nonmetallic mineral products	9	11	13	13	13	13	14
Petroleum products	143	137	137	131	105	115	118
Metal fabricating	25	21	28	30	29	37	39
<b>Total Expenditures</b>							
Mining industry	92	115	119	90	76	86	88
Mines	43	48	51	52	47	53	59
Oil and gas wells	49	67	69	38	29	33	29
Mineral manufacturing	298	356	342	279	274	308	330
Ferrous primary metals	22	26	26	27	30	32	32
Nonferrous primary metals	82	95	92	88	111	125	130
Nonmetallic mineral products	10	17	19	16	15	14	16
Petroleum products	184	218	205	148	118	137	152
Metal fabricating	28	24	30	34	33	40	43

<sup>p</sup> Preliminary; <sup>f</sup> Forecast.

Note: Totals may not add due to rounding.

## THE CANADIAN MINERAL INDUSTRY IN 1989

D.S. Pilsworth (613) 992-4285

The Canadian mineral industry had another good year during 1989. Despite the fact that commodity prices generally weakened as the year progressed, price levels for Canada's principal mineral exports remained high enough to provide acceptable profit margins for most of Canada's metal-mining industry.

The value of Canadian mineral production, including metallic minerals, nonmetallic minerals, structural materials and fuels, totalled \$39.1 billion in 1989 compared with \$37.0 billion in 1988, an increase of nearly 6%.

The metallic minerals sector performed well in 1989, with value of output reaching \$14.3 billion, up 5.3% over the \$13.6 billion reported in 1988. On the other hand, the value of production of nonmetallics declined from \$2.7 billion in 1988 to \$2.5 billion in 1989, a decrease of 6.5%. The value of output for structural materials remained unchanged at \$2.9 billion from the value recorded in 1988. As a whole, the nonfuel mineral sector accounted for \$19.8 billion, or 51% of the overall value of mineral output.

The fuels sector, which includes crude petroleum, natural gas, natural gas by-products and coal, accounted for nearly \$19.4 billion of the overall value of output in 1989, an increase of about 9% relative to the previous year. While the volume of petroleum output decreased slightly, the value of output increased by about 16%. Stronger prices in 1989 relative to 1988 accounted for this positive result.

The top ten commodities in terms of value of output in 1989 were: petroleum (\$10.7 billion), natural gas (\$5.2 billion), nickel (\$3.1 billion), zinc (\$2.8 billion), copper (\$2.4 billion), gold (\$2.3 billion), coal \$1.8 billion), natural gas by-products (\$1.6 billion), iron ore (\$1.5 billion), and uranium (\$1.0 billion).

When fuels are included, Alberta's contribution to total mineral output represented the largest share at \$16.2 billion or 41.4%. Ontario came second with output valued at \$7.3 billion or 18.7% of the total. In third, fourth and fifth places, respectively, were British Columbia (\$4.1 billion), Saskatchewan (\$3.0 billion) and Quebec (\$2.8 billion). Manitoba was in sixth place with value of production reaching \$1.7 billion. The remaining provinces accounted for the balance (\$4.0 billion), roughly 10% of the total.

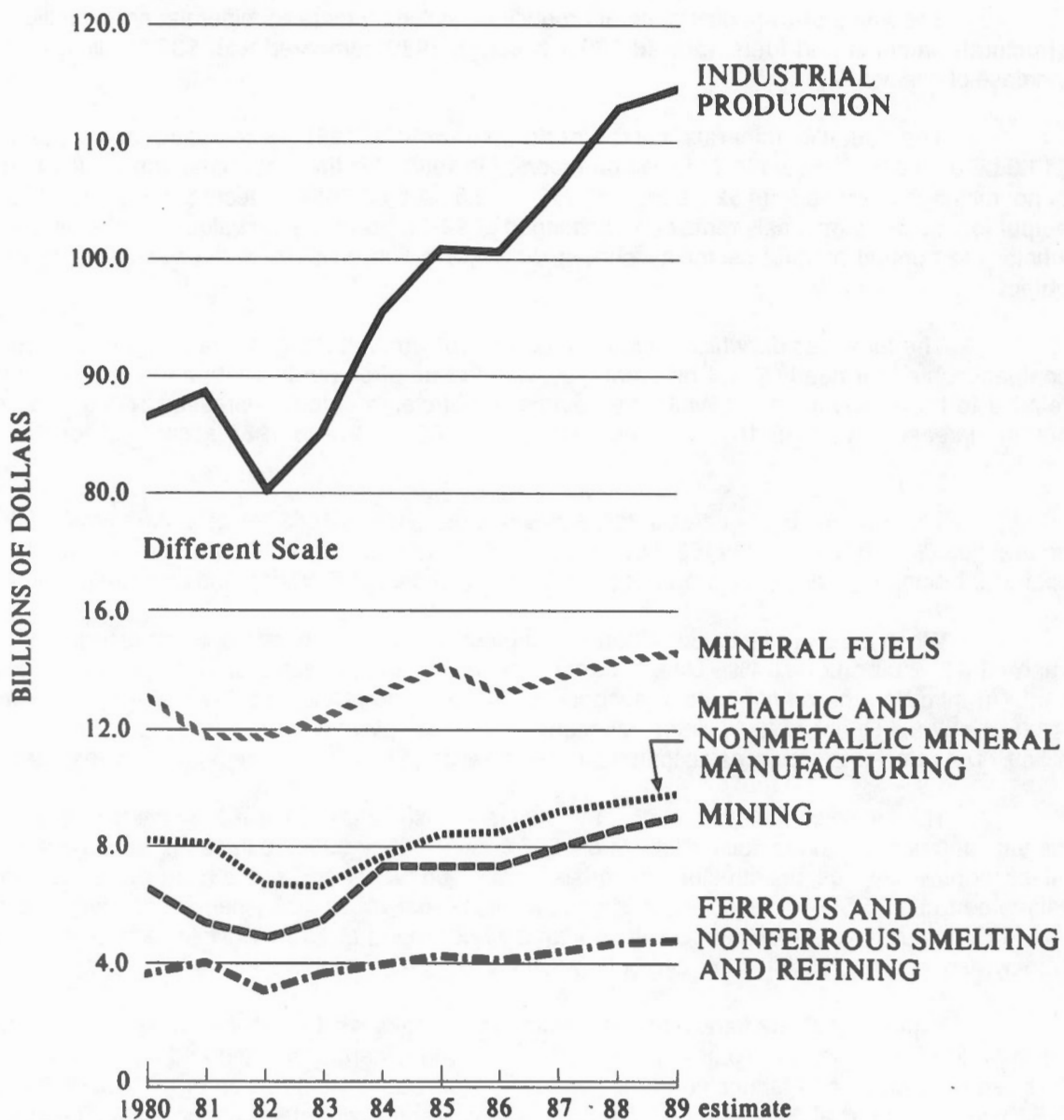
The employment level for all of the mineral industry changed little from the previous year, with the total number of workers down slightly from 392 000 in 1988 to 390 000 in 1989. Employment in metal mines, nonmetal mines and structural materials (coal included, petroleum and natural gas excluded), was estimated to be 75 500 in 1989, about 2% below the 1988 level. Employment in smelting and refining, and in the crude steel industries remained virtually unchanged at 75 000, while mineral manufacturing employment declined slightly from 240 000 in 1988 to 237 000 in 1989.

Exports of Canadian minerals continued to make an important contribution to Canada's merchandise trade surplus. Total value of exports of crude minerals, smelted and refined materials, and their semi-fabricated and fabricated forms (excluding fuels but including coal) for the first nine months of 1989 was estimated at \$19.1 billion. Crude minerals alone accounted for about \$7.1 billion. When mineral fuels are included, the United States accounted for about 66% of the total value of Canada's mineral exports in the first nine months of 1989. Over the same time period and on an international basis, mineral (including fuels) made up about one quarter of the value of all of Canada's exports. Imports of these mineral products (excluding fuels but including coal) for the first nine months of 1989 were estimated to be about \$11.0 billion.



Figure 1

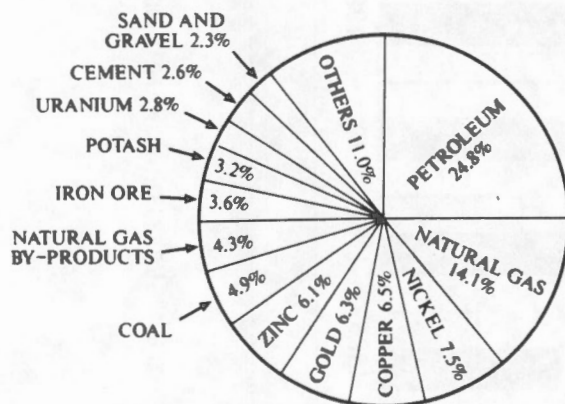
# GROSS DOMESTIC PRODUCT AT 1981 PRICES



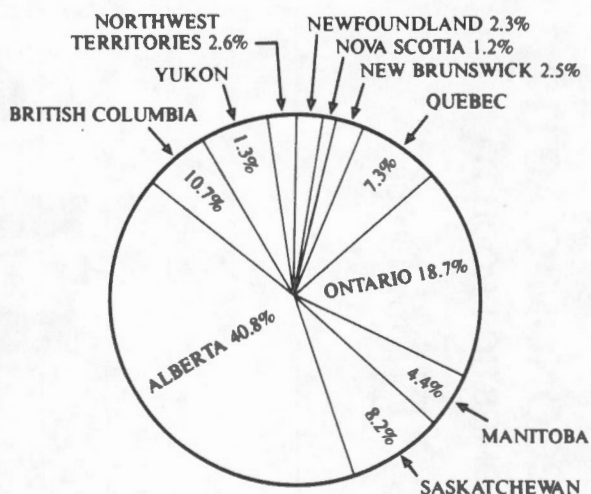
Source: Statistics Canada

Figure 2

# CANADA, VALUE OF MINERAL PRODUCTION, 1988

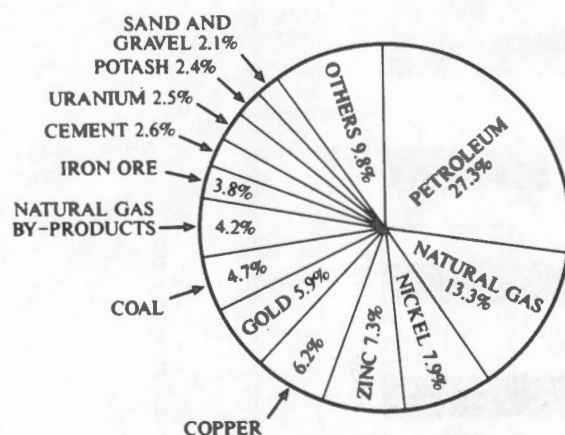


% OF TOTAL BY COMMODITY

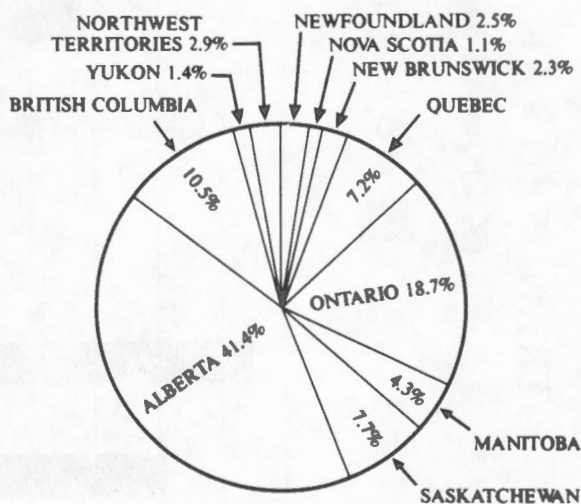


% OF TOTAL BY PROVINCE

# CANADA, VALUE OF MINERAL PRODUCTION, 1989



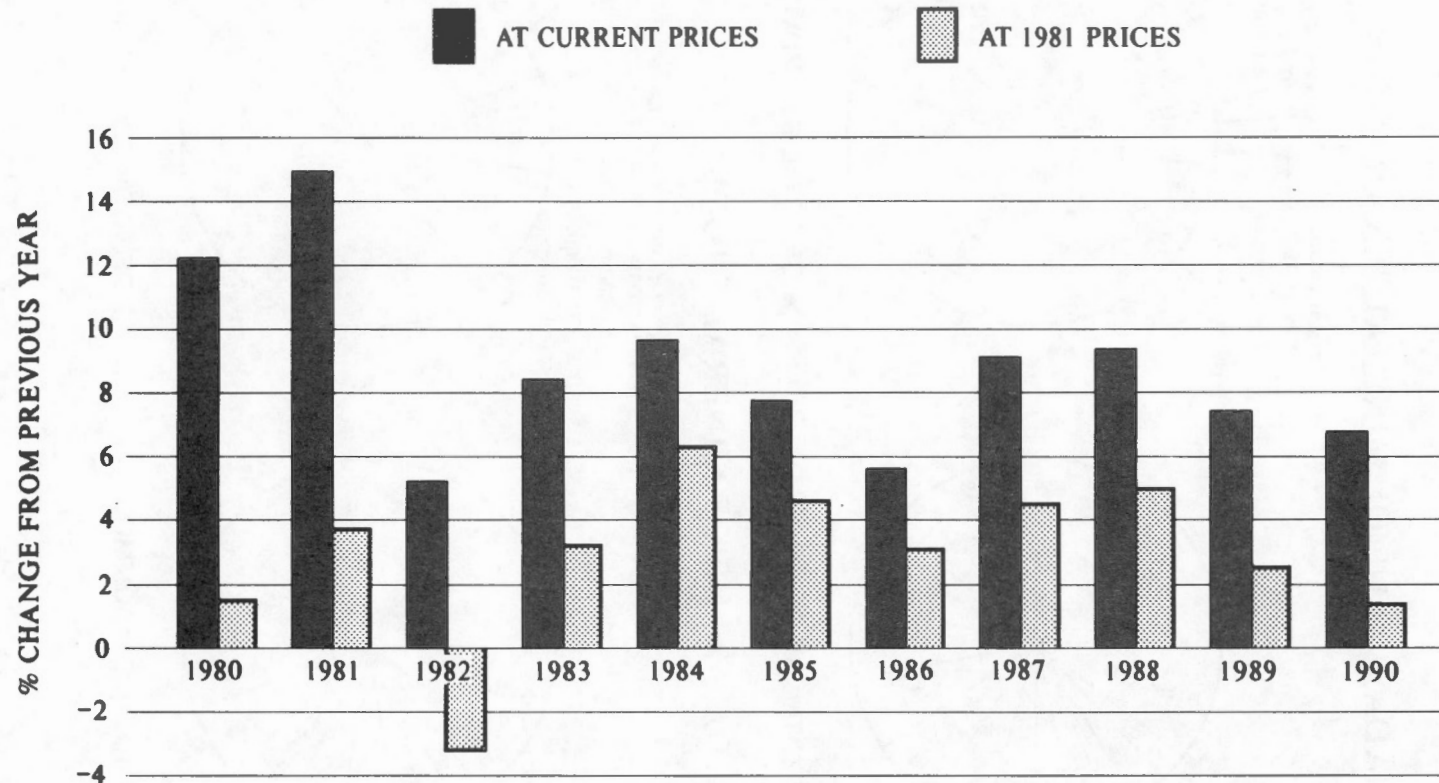
% OF TOTAL BY COMMODITY



% OF TOTAL BY PROVINCE

Figure 3

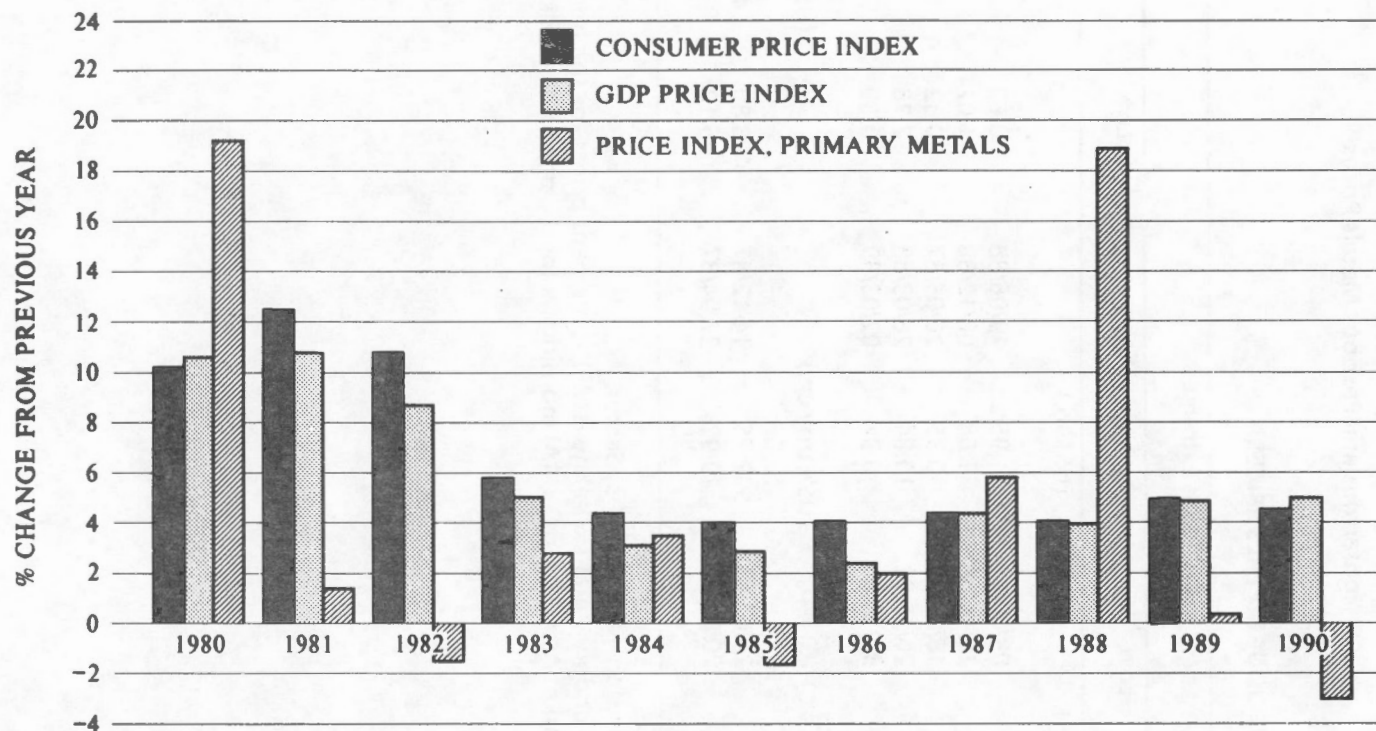
## TRENDS IN CANADIAN ECONOMIC ACTIVITY (% CHANGE IN GROSS DOMESTIC PRODUCT)



Source: Statistics Canada.

NOTE: FIGURES FOR 1989 AND 1990 ARE ESTIMATED.

Figure 4  
CANADIAN PRICE TRENDS



Source: Statistics Canada.

NOTE: FIGURES FOR 1989 AND 1990 ARE ESTIMATED.



## METALLIC MINERALS AND PRODUCTS

### Nonferrous and Precious Metals Prices

#### NONFERROUS AND PRECIOUS METALS PRICES<sup>1</sup>

	1980s Extremes				February 1990		
	Low		High		Low	High	Average
	(US\$/lb.)		(US\$/lb.)		(US\$/lb.)		
Aluminum	0.41	03/06/82	1.95	13/06/88	0.63	0.69	0.66
Copper	0.56	18/10/84	1.68	08/12/88	1.02	1.13	1.07
Lead	0.15	18/03/86	0.35	20/05/87	0.32	0.40	0.35
Nickel	1.42	26/11/82	10.84	28/03/88	2.78	3.58	3.17
Zinc	0.25	31/10/85	0.97	02/03/89	0.59	0.67	0.63
	(US\$/troy oz.)		(US\$/troy oz.)		(US\$/troy oz.)		
Gold	285.00	26/02/85	502.75	14/12/87	408.80	421.40	416.54
Silver	4.86	20/05/86	10.92	27/04/87	5.12	5.36	5.29

Source: Nonferrous Division, Mineral Policy Sector.

<sup>1</sup> Prices used are the London Metal Exchange (LME) settlement prices for the nonferrous metals and the London Bullion Market Association (LBMA) morning fix for the precious metals.

## INDUSTRIAL MINERALS AND PRODUCTS

### Gypsum

G.O. Vagt (613) 992-2667

Construction continued at two new gypsum wallboard plants in Atlantic Canada and one in New Hampshire. Louisiana-Pacific Corporation, headquartered in Portland, Oregon, plans to produce a gypsum fibre board using recycled paper, gypsum and perlite. This process is based on European technology. The plant is situated at Port Hawkesbury, Nova Scotia.

In New Brunswick, Eastern Gypsum Inc., a member of the Depow Group of Companies, plans, later in the year, to be operating a "normal" gypsum wallboard plant at McAdam, New Brunswick. Domtar Inc., the third largest producer of gypsum products in North America, also plans to have a wallboard plant operating later in the year in Newington, New Hampshire. This will help assure a continued demand for gypsum from the company's mine in Corner Brook, Newfoundland. Markets are mainly dependent on construction in the United States and forecasts suggest a stable or slightly improved housing sector in 1990.

## **SPECIAL ITEM**

### **Update on Canadian Mining Performance and Third Quarter 1989 Financial Results D. Hull (613) 995-5301**

## **INTRODUCTION**

This report contains recent developments in selected areas of Canadian mining based on data available in February 1990. The purpose is to give a summary picture of the ongoing performance of the industry and, where possible, a comparison with the ALL INDUSTRIES results.

The Metal Price Index, developed at EMR, tracks a specific commodity price for six metals: copper, lead, zinc, nickel, gold and silver. The weighting factor for each of the prices is the relative share of production (shipments) of that metal family as cited in Statistics Canada publication, *Canada's Mineral Production*, Catalogue 26-202. These six metals accounted for over 75% of the dollar value of metals produced (shipped) in Canada in 1988 and 1989. Although the Metal Price Index is usually presented as being based on Canadian currency, it is also available based on the quoted U.S. prices. The latter can be useful in analyzing the effects on commodity prices of the exchange rate between the two countries.

Quarterly balance sheet and income statement data are derived from Statistics Canada publication, *Industrial Corporations Financial Statistics*, Catalogue 61-003. The ALL INDUSTRIES aggregate excludes agriculture, fishing and trapping, while METAL MINES includes prospecting other than petroleum. OTHER MINING excludes coal but includes contract drilling other than petroleum contract drilling. (The coal data are included in the MINERAL FUELS aggregate table and cannot be separated.)

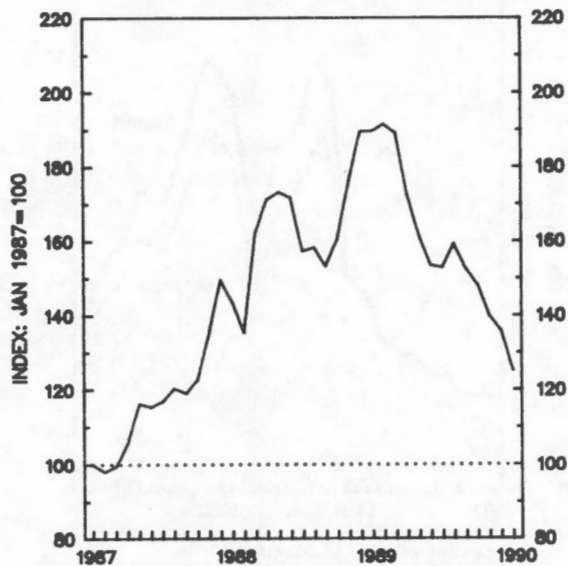
Because balance sheet data are available only for companies having \$10 million or more of total assets, financial ratios using balance sheet items refer to "large corporations." However, income statement data are available for the universe of corporations and are used where possible.

In a sub-annual series, such as quarterly financial data, the movement in magnitude may be affected by secular, cyclical (business cycle), random or seasonal movements. Therefore, in order to remove the effects of this last component, seasonally-adjusted data are used where possible to detect real underlying trends in such indicators as sales and rates of return on assets.

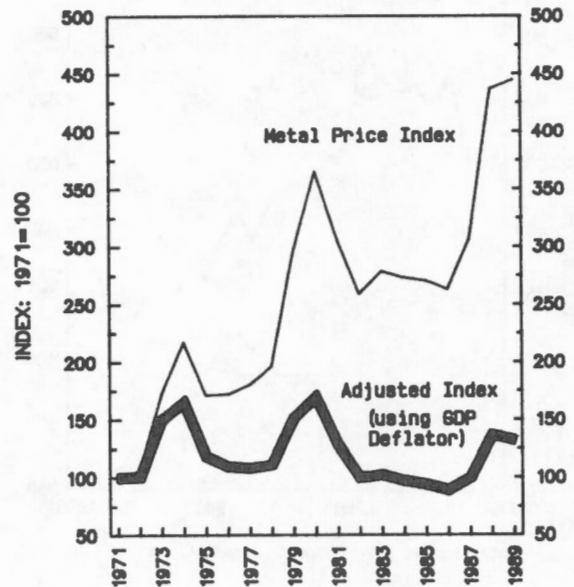
## **SUMMARY LOOK AT METAL PRICES**

The EMR Monthly Metal Price Index peaked in February 1989 after having gained some 91% since January 1987, and then declined rather sharply, losing over 34% by the end of January 1990. The index was pulled down mainly by falling prices for copper, zinc, and especially nickel. Despite this fall in the monthly index, the 1989 index value of annual average prices remained above that for 1988. This was due, in part, to the higher prices at the beginning of 1989 and the short-lived rally in prices which occurred in mid-summer for some of the metals in the index.

EMR MONTHLY METAL PRICE INDEX  
(BASED ON CANADIAN CURRENCY)  
JANUARY 1987 TO JANUARY 1990



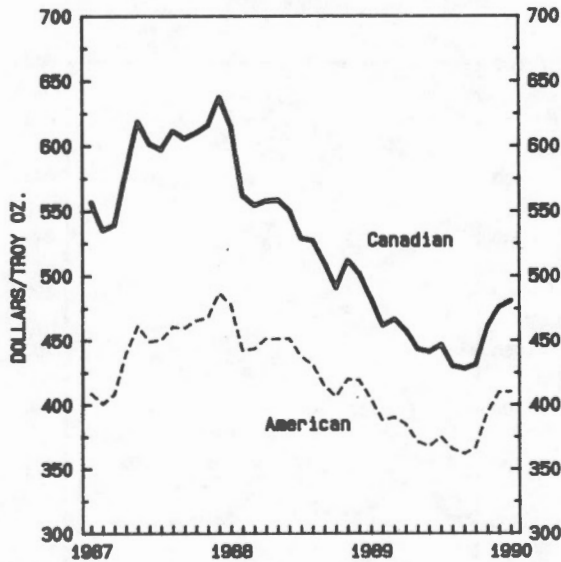
EMR ANNUAL METAL PRICE INDEX  
(BASED ON CANADIAN CURRENCY)  
1971-89



During February (as of February 27, 1990), monthly average U.S. prices were improving for lead, zinc, silver and gold, but were still declining for copper and nickel. The overall result was a 2.06% increase (based on U.S. currency) and a 4.38% increase (based on Canadian currency) in the monthly index value.

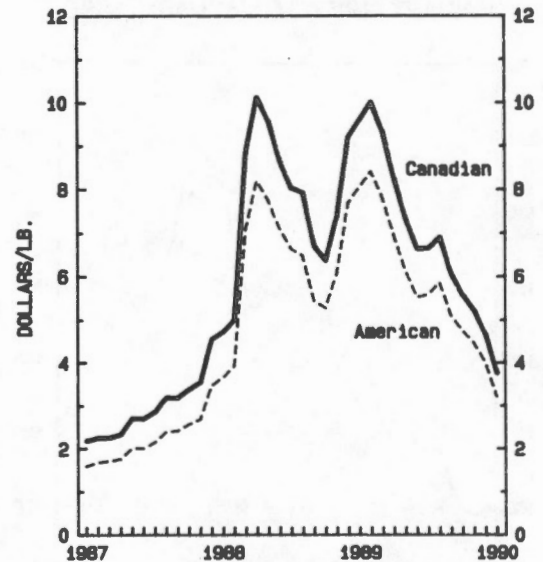
Gold prices began increasing again in October 1989 and by the end of January 1990, had gained over 12% compared to their level in the fall. However, the outlook for metal prices, in general, is still bearish although the nickel market is expected to firm during 1990. Monthly average nickel prices have been declining since August 1989, but expectations are that they will recover to a range between US\$3.00-4.00/lb. during 1990.

MONTHLY AVERAGE GOLD PRICES  
JANUARY 1987 TO JANUARY 1990



Note: Prices are London Gold Market, AM Fix.

MONTHLY AVERAGE NICKEL PRICES  
JANUARY 1987 TO JANUARY 1990



Note: Prices are LME Settlement.

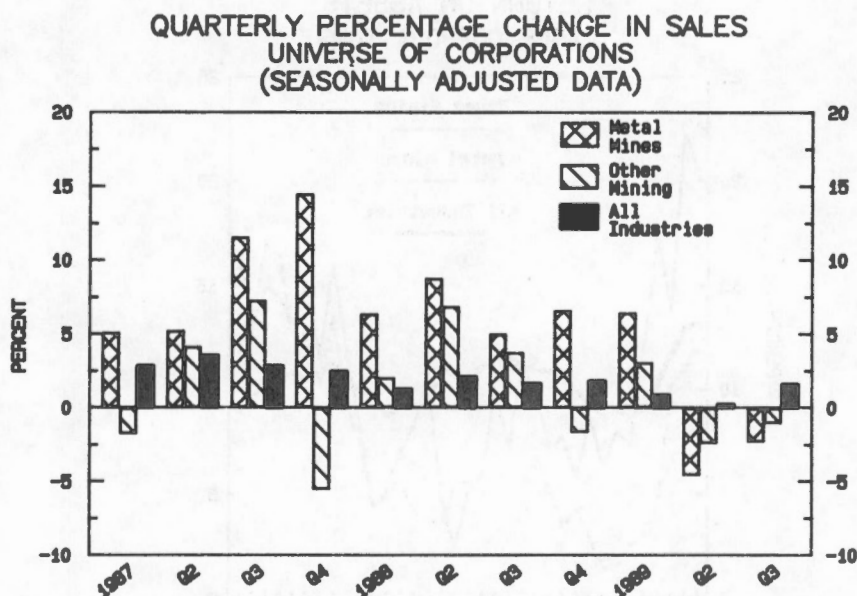
#### QUARTERLY TREND IN SALES (UNIVERSE OF CORPORATIONS)

Sales results (on a seasonally-adjusted basis) for the third quarter of 1989 indicate declining fortunes for the primary minerals and metals industry, consistent with the falling prices of this period.

Over 1987, sales in METAL MINES had been increasing rapidly (on a seasonally-adjusted basis), but after the second quarter of 1988 the rate of change in sales, although still positive, began to decline. By the second quarter of 1989 this sector was experiencing negative growth which continued into the third quarter. Expectations are that the final quarter will show similar results.

The downward trend in sales over the last two quarters of 1989 was much more pronounced in METAL MINES than in OTHER MINING and very much more pronounced in both sectors relative to ALL INDUSTRIES. Changes in sales for the ALL INDUSTRIES category have been positive over the entire period from 1987 to third quarter 1989, but generally trending downward.





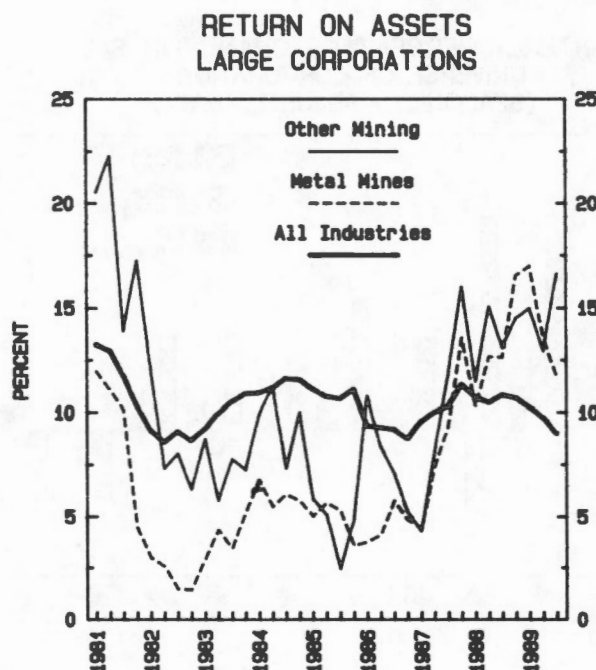
## RETURN ON ASSETS (LARGE CORPORATIONS)

Following the recovery from the 1981 recession, the rate of return on assets in METAL MINES peaked at about 17% by the first quarter of 1989; however, by the third quarter, the rate of return declined to 11.6%.

Third quarter results for OTHER MINING indicated persistent strength, finishing the quarter at 16.6% which was up from the previous quarter level of 12.9%. This third quarter performance by OTHER MINING represents the highest rate of return on assets since the recovery from the last recession.

In comparison, the same financial indicator for ALL INDUSTRIES held fairly constant between 10% and 11.3% over the period from mid-1987 to the first quarter of 1989. Since then, the rate of return has fallen to the third quarter level of about 9%.

The rate of return in both METAL MINES and OTHER MINING has tended to be above the ALL INDUSTRIES average (large corporations) since about the fourth quarter of 1987, but indications are that fourth quarter 1989 results will probably put METAL MINES at or below the ALL INDUSTRIES average for the quarter. The 1989 annual rate of return on assets, however, in METAL MINES and OTHER MINING should be comparable to the results for 1988 which showed a 12.6% rate of return for the former and 13.2% for the latter.



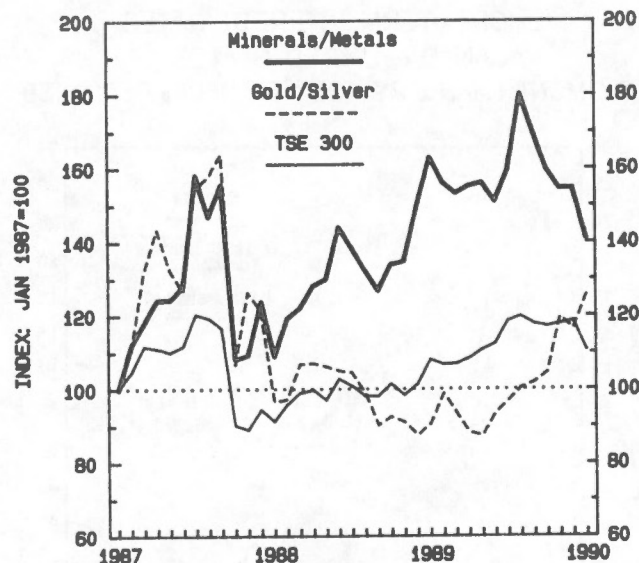
## TORONTO STOCK EXCHANGE INDICES

The monthly closing index for the TSE 300 demonstrated a generally rising trend over the period November 1987 to the end of December 1989, gaining some 33%. The minerals and metals index generally outperformed the TSE 300 from November 1987 to late summer 1989, after which it declined, losing some 22% by the end of January 1990. The gold and silver index, on the other hand, had been on the decline from late 1987 until early summer 1989, after which time it increased by some 44% by the end of January 1990.

The TSE index for minerals and metals from late 1987 showed a generally rising trend which continued into mid-summer 1989, despite the rather severe fall in metals prices which began in February 1989. Strong share prices over much of 1989 clearly reflect the continuing profitability of Canadian metal mining, in that commodity prices in Canadian dollar terms still remained substantially above operating costs for most of the mining industry. Cash flow continued to increase dramatically well into 1989. Metal mining cash flow for the first three quarters of 1989 was over \$2.95 billion, some 18% above the \$2.5 billion registered for the first three quarters of 1988.

Fourth quarter 1989 financial results for all corporations from Statistics Canada publication, *Industrial Corporations Financial Statistics*, are not available at this time. However, data from other sources indicate that 1989 did indeed turn out to be a good year for Canada's metal mining companies (other than gold).

**TORONTO STOCK EXCHANGE  
MONTHLY CLOSING INDICES  
JANUARY 1987 TO JANUARY 1990**



Source: InfoGlobe MARKETSCAN Database.

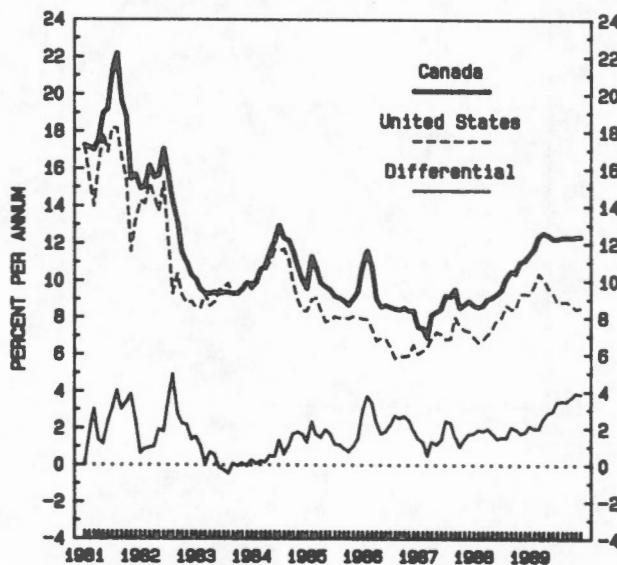
Eleven gold companies and thirteen "other metal" companies have reported their 1989 annual results. While results are mixed, the total revenues for these twenty-four companies in 1989 were on average 9% greater than their revenues for 1988. Profits, however, remained fairly flat; earnings in 1989, for the same twenty-four companies, averaged 7% less than in the previous year.

In the gold group (including American Barrick Resources Corporation, Corona Corporation, Echo Bay Mines Ltd., Hemlo Gold Mines Inc., LAC Minerals Ltd. and Placer Dome Inc.), revenues are up 21% but profits are down 36%. For the "other metals" group (including Cominco Ltd., Denison Mines Limited, Inco Limited and Noranda Inc.), revenues increased by 8% and profits increased by 2%.

### CANADA-UNITED STATES SHORT-TERM INTEREST RATES

The spread on 90-day commercial paper between the United States and Canada has tended to widen since 1984 but somewhat irregularly. From the first quarter of 1983 until approximately the first quarter of 1984, rates in both countries remained fairly even. Beginning with the first quarter of 1984, Canadian rates began to rise relative to U.S. rates until, by December 1989, the spread was 386 basis points. The spread had reached this level on several occasions between mid-1981 and mid-1982 but persisted only for relatively short periods of time. The wide spread since late 1987 has continued for an unusually long time.

SHORT-TERM INTEREST RATES  
CANADA-UNITED STATES  
BY MONTH JANUARY 1981 TO DECEMBER 1989



Source: Bank of Canada Review.  
Note: Interest rates refer to 90-day  
corporate/commercial paper.

The Canadian dollar relative to the U.S. dollar has responded to this interest rate differential, rising from US¢71.09 in January 1986 to a high of US¢86.12 by December 1989. The Canadian dollar has weakened over recent weeks and traded as low as US¢82.92 on February 15, 1990.

In an attempt to mitigate the negative impact of the rising dollar on the Canadian resource industries, the Bank of Canada has tended to accumulate U.S. dollars. As a consequence, Canadian official international reserves of U.S. dollars have risen dramatically since late 1986, from a level of considerably less than \$2.3 billion to \$13 billion by late 1988. Since then, U.S. dollar reserves declined to \$10.3 billion by January 1990.

CANADA-UNITED STATES EXCHANGE RATE INDEX  
BY MONTH JANUARY 1981 TO JANUARY 1990



Source: Bank of Canada Review.  
Note: Rate is the reciprocal of the average noon  
rate for Canadian dollars per U.S. dollar.

The Canadian mining industry has remained fairly resilient over this period of rising exchange rates. This has been so because, over late 1986 to early 1989, rising U.S. dollar prices for commodities more than compensated for the rising Canadian dollar, improving profits as well as cash flow. The exchange value of the dollar will become more crucial as the fortunes of the industry appear to be on the decline. There will be increased pressure on the government to allow interest rates to fall as the industry gets further and further into the ensuing cyclical downturn.



CANADA'S OFFICIAL INTERNATIONAL RESERVES  
OF U.S. DOLLARS  
BY MONTH JANUARY 1981 TO JANUARY 1990



Source: Bank of Canada Review.



