

Updating the Bank of Canada Commodity Price Index

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The Bank of Canada Commodity Price Index (BCPI) summarizes the price movements of 23 commodities produced in Canada. Information provided by the BCPI is used in analyzing movements in GDP, industrial producer prices, inflation, and the exchange rate.

This note describes technical changes in the construction of the BCPI, including updated weights, minor changes in the commodity coverage, and new sources of information for the prices of certain commodities. It also describes other changes to the BCPI which will result in revisions to historical weights and index values. Effective May 2003, all data (including the historical series) will incorporate these changes.

Background

The BCPI is calculated by assigning each commodity a specific weight based on the value of its annual production and then tracking the movements in its U.S.-dollar price. The index is compiled and available on weekly and monthly bases.²

To be included in the index, a commodity must account for a significant share of Canada's resource sector based on the value of its production. It must also meet the following criteria that loosely define a *primary commodity*:

- the commodity is used for further processing
- it is freely traded in an open market
- its price is sensitive to changing supply and demand conditions, and

- it is sufficiently homogeneous and standardized

As a general guideline, commodities must have a weight of at least 1 per cent of the total index to be included. However, regional considerations and special circumstances have prompted some exceptions. Certain commodities are included to give a subcomponent greater breadth. For example, both silver and corn have weights below 1 per cent. Nevertheless, silver is included with gold to augment the precious metals subindex, and corn is included to give the Ontario region an agricultural indicator.

Changes in Current Weights

From time to time, the methods used to construct the BCPI are reviewed to ensure that the index accurately reflects the natural resource sectors of the economy. Because prices and demand for commodities shift, their relative production weights and economic significance also change.

The BCPI was last updated in 1994, using weights based on the value of production from 1982 to 1990. The index was also normalized to average 100 over the period 1982 to 1990. The new period used to determine the current weights for the index will be from 1988 to 1999. The new time frame was considered long enough to capture at least a full economic cycle for most of the commodities and recent enough to remain timely and relevant. At the time when the new weights were being calculated, 1999 was the most recent year for which all production data were available.

In the current update, commodities were each assigned a weight relative to the total based on their average annual value of production over the 1988 to 1999 period, and these new weights will now be used to construct the BCPI, starting with the data for the first week of January 2000. To obtain the correct measure of price change as of that date, it is necessary to adjust the 1988

1. Technical assistance was provided by Radu Gabudean and Cristiano Papile.

2. The BCPI is published by the Bank of Canada on its Web site (www.bankofcanada.ca) as well as in Table H9 of the Bank of Canada *Banking and Financial Statistics*.

to 1999 value of production weights so that they reflect prices in the final week of December 1999 (i.e., the week preceding the introduction of the new weights). These adjusted weights are referred to here as “hybrid” weights.³

As a result of the update to the current weights, only four commodities (crude oil, natural gas, lumber, and aluminum) experience any significant shift in weight (see Table 1).

The BCPI will remain normalized to 100 over the 1982 to 1990 period.

Changes in Composition

Owing to changes in the production values of commodities over time, the composition of the index must be periodically reassessed to ensure that it is current and accurate. For example, the weights for two traditional components of the BCPI (cod and sulphur) would have fallen below 0.1 per cent if they had continued in the index. They were therefore removed from the BCPI, starting with the data for the first week of January 2000. Shrimp and crab production have increased in value, however, and have therefore been added.

With the addition of shrimp and crab, the fish component of the index now has a weight of 1.23 per cent. Although all of its four constituents (salmon, lobster, shrimp, and crab) have individual weights of less than 1 per cent, all four fish commodities are included to give Atlantic Canada some non-energy representation in the index. The addition of shrimp and crab gives the fish component four commodities rather than two, increasing its breadth.

New Pricing Sources

The BCPI uses U.S.-dollar market prices whenever available. A number of new sources have been incorporated in the BCPI revisions beginning January 2000. U.S.-dollar prices for natural gas will be drawn from the futures market on the New York Mercantile Exchange (NYMEX). U.S.-dollar prices for cattle and hogs will be sourced from the U.S. Department of Agriculture (as reported in the *Wall Street Journal*). Salmon prices will be taken from *Urner Barry's Seafood Prices—Current*.

3. The method used to construct the new hybrid weights is analogous to the method used by Statistics Canada when new weights are introduced for the Consumer Price Index. For a full discussion of this method, refer to Statistics Canada, *Consumer Price Index Reference Paper*, Cat. 62-553 occasional, chapter 7, p. 59.

Table 1

Weights of Commodities in the BCPI

Commodity	Weights for 1972-90 ^a	Weights for 1991-99 ^b	Weights beginning January 2000 ^c
ENERGY	37.85	34.24	33.93
Coal	2.38	2.61	1.84
Crude oil	22.92	24.64	21.40
Natural gas	12.54	7.00	10.69
FOOD	21.34	17.18	16.76
Grains & Oilseeds	9.69	6.85	5.86
Barley	1.39	1.16	0.66
Canola	1.33	1.17	1.25
Corn	0.79	0.72	0.54
Wheat	6.18	3.80	3.42
Livestock	9.85	9.73	9.67
Cattle	6.70	6.89	7.87
Hogs	3.15	3.16	2.79
Fish	1.80	0.60	1.23
Crab	–	–	0.25
Lobster	0.60	0.27	0.49
Salmon	0.60	0.26	0.35
Shrimp	–	–	0.15
Cod	0.60	0.07	–
INDUSTRIAL MATERIALS	40.81	48.58	49.31
Forest Products	24.79	30.58	33.36
Lumber	9.08	8.16	13.58
Newsprint	8.20	8.49	7.70
Pulp	7.52	13.93	12.08
Metals	13.80	15.45	14.29
Aluminum	3.45	2.92	5.02
Copper	3.00	3.70	2.04
Gold	1.88	2.68	2.30
Nickel	2.33	2.68	2.39
Silver	0.81	0.35	0.32
Zinc	2.33	3.12	2.23
Minerals	2.22	2.55	1.66
Potash	1.37	1.50	1.66
Sulphur	0.84	1.05	–

a. Based on 1976-87 values of production.

b. 1982-90 production weights adjusted to reflect prices in the last week of December 1990 (i.e., the week preceding the introduction of the new weights). May not total 100 due to rounding.

c. 1988-99 production weights adjusted to reflect prices in the last week of December 1999. May not total 100 due to rounding.

Other Changes Affecting BCPI Historical Values

In each of the previous two revisions of the BCPI (1987 and 1994), all historical values of the index were revised using the newly calculated weights.⁴ This

4. Thus, prior to the current revisions, all BCPI historical data were based on (non-hybrid) weights calculated from the average values of production over the period 1982 to 1990.

practice is now being changed. Weights for all historical data will now be replaced with weights based on the value of production from years closer to those specific time periods.

For the period 1991 to 1999, the BCPI is now calculated using hybrid weights based on the value of production from 1982 to 1990 (similar to the procedure used to construct the weights applied as of January 2000).

As well, BCPI weights for the period 1972 to 1990 have been recalculated based on the value of production

from 1976 to 1987 (i.e., the weights of the original BCPI that were calculated in the late 1980s).

The new weights for the periods 1972 to 1990 and 1991 to 1999 also appear in Table 1. While the application of the new weights results in revisions to all historical values of the BCPI, the revisions are relatively minor. The trends in the BCPI are left substantially unchanged by the changes in weights, and the average level of the revised index is only 0.13 percentage points higher than the average level of the previously published BCPI over the period 1972 to 2002.

