

Canadian Economic Observer

The accelerated pace of the 2008-2009 downturn

by Philip Cross



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- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
- 0^s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- ^P preliminary
- ^r revised
- X suppressed to meet the confidentiality requirements of the *Statistics Act*
- ^E use with caution
- F too unreliable to be published
- * significantly different from reference category ($p < 0.05$)

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The accelerated pace of the 2008-2009 downturn

by Philip Cross ¹

The most remarkable features of the contraction that started in 2008 were its speed and severity, which were most in evidence after August, initially in financial markets and then in output and employment. This paper compares the downturns in stock, commodity and exchange rate markets with their previous three cycles. It then examines how the unprecedented declines in financial and commodity markets were reflected in output and employment during the 2008-2009 recession.

Financial and commodity markets

Steep declines in the recent downturn were evident in stock, commodity and exchange markets late in 2008. The bulk of these drops occurred during a very brief time-period at the peak of the crisis in the autumn of 2008. The severity of the drop in 2008 exceeded the previous three cycles in all three markets during 1981-1982, the early 1990s, and 2001.

With a duration of eight months, the slump in commodity prices between June 2008 and February 2009 was markedly shorter than those in previous cycles (29 months in 1981-1983, 33 months in 1989-1991 and 10 months in 2001). Despite the shorter duration of the retrenchment, the 50% drop of commodity prices in the current cycle was by far the largest, compared with declines of 31% in 2001, 18% in 1989-1991 and 12% in 1981-1982 (Figure [3.1](#)). Over half (60%) of the most recent downturn occurred in the three months between August and October 2008. This retrenchment included repeated monthly double-digit declines, the only such drops on record. ²

The Canadian dollar retreated from parity with the US 'greenback' to a monthly low of 79 cents in the 10 months between May 2008 and March 2009. This compares with decreases in the exchange rate that took place over a year or more in each of the previous three cycles. ³ The 21% drop in the Canadian dollar late in 2008 and early 2009 far exceeded slight declines of less than 10% in the earlier cycles (Figure [3.2](#)). Again, over half (59%) of this decrease occurred in just two months (mostly during its record monthly retreat in October).

The Toronto Stock Exchange peaked in June 2008, and then fell rapidly until early March 2009, a slump covering nine months. This compares with peak-to-trough declines of 12 months in 1981-82, 14 months in 1989-90 and 13 months after the information communications technology (ICT) bubble burst in 2000-

2001 (Figure 3.3). The 45% drop in 2008-2009 exceeded the losses of 37% in 1981-82, 23% in 1989-90, and 39% in 2000-2001. ⁴ Over half (61%) of the retreat occurred in October and November 2008. The peak-to-trough retreat of the stock market in 2008-2009 closely tracked the slump in commodity prices in both duration and severity, reflecting the dominance of natural resource stocks in the Toronto Stock Exchange after the 7-year boom in commodity prices.

Although the length of the contractions in financial and commodity markets was shorter in 2008, the magnitude of the declines was as large as, or exceeded, those in previous cycles, usually by a wide margin. The inevitable outcome of concentrating above-average changes of magnitude into a brief time is a short period of sharp contraction. The declines in equity prices, the exchange rate and commodity prices in the autumn of 2008 set records for the speed of descent. It is noteworthy that nearly 60% of these declines occurred in just 2 or 3 months in all three markets late in 2008, a reflection of how intertwined the three markets were during this period.

The recession in output and jobs

The implications of faster cycles in financial and commodity markets for the real economy of output and employment are unclear in theory. The technology that allowed the creation of trans-national supply chains could speed up the global transmission of cycles in production. However, these same technologies also allow firms to better control inventories, and this has been a major factor in dampening recent business cycles. ⁵

The rapid drop in financial and commodity markets in the fall of 2008 led some analysts to extrapolate that, if sustained for several months, their descent would herald a severe recession, or worse. Instead, while the real economy quickly slid into recession, the downturn of real GDP and employment in Canada overall was shorter and less pronounced than in the previous two recessions, in 1981-1982 and the early 1990s (2001 is excluded from this comparison, as there was no recession in GDP and jobs in Canada, unlike in the US).

While the recent recession was not unusually long or severe, real GDP and employment posted faster and sharper declines early in the recent downturn than in 1981-1982 and 1990-1991. For GDP, nearly two-thirds (64.0%) of the decline occurred between November 2008 and January 2009, a 3-month period during which GDP fell 2.5% as Canada's exports tumbled 26%. Figure 3.4 shows that the steepest rates of decline in GDP occurred early in the 2008-2009 downturn, in the middle of the recession in 1990, and towards the end of the recession in 1982. ⁶

The faster onset of recession in 2008 was also evident in jobs. Employment fell by 2.3% between October 2008 and May 2009, ⁷ surpassing the initial slump in the previous two recessions. Nearly all (88.5%) of the drop was in the four months from November 2008 and February 2009. By comparison, the steepest periods of decline occurred later in the previous two recessions (Figure 3.5).

While the initial speed of the contraction in output and jobs was unusually swift in the latest downturn, the overall losses did not exceed the earlier recessions. So far, jobs have dropped 2.3% in this recession, versus 3.4% in 1990-1992 and 5.4% in 1981-1982. Quarterly real GDP fell 3.6% in 2008-2009, versus declines of 3.4% in 1990-1991 and 4.9% in 1981-1982. By these measures, the more severe contraction in financial markets in 2008 were not reflected in the real economy. While the 2008-2009 recession was quicker to reach bottom, the depth of this decline was similar to, or less pronounced, than those in earlier cycles.

Technology was not the only factor potentially accelerating the speed of the recession late in 2008. It may also be that the price signals emanating from the shock to financial markets were so large that any firm

with access to conventional media (never mind scrutinizing daily orders from customers over the Internet) could have anticipated a sharp downturn, at least in the usually cyclically-sensitive industries such as auto, housing, and capital goods, where the recession was concentrated. So, the rapidity of the recession could have reflected events specific to 2008.

Another factor that may have accelerated the drops in output and jobs was the sudden loss of credit in some markets, notably commercial paper in the US. With no viable option to finance inventories, some firms moved immediately to slash output. This again suggests that some of the quicker onset of recession reflected events unique to 2008.

Metal ore mining is an example of an industry moving faster to cut output during the 2008-2009 downturn than in previous cycles. Output of metal ores peaked in August 2008 and then fell steadily over the next 12 months, for a total drop of 36%. In the downturn of 1981-1982, metal ore output did not begin to fall until May 1982, almost a full year after the overall economy turned down. ⁸ Similarly, metal ore production began to contract only in August 1991, after the recession in total GDP had ended. After the industry began to lower output in 1982 and 1991, the total drop was nearly 30% (Figure [3.6](#)).

Some analysts ⁹ have attributed the quicker response of metal mining in the current cycle to tight credit, which forced companies to close mines with marginal profitability. With credit unavailable to some companies (especially those that relied on financial markets in the US for funds), there was no alternative but to shut down mines to prevent inventories (which require financing) from rising.

ICT and financial markets

Why did financial and commodity markets change course much faster late in 2008 than they had in previous downturns? As noted earlier, the unprecedented seizure in US financial markets played a major role. Another factor appears to be information communications technology. While falling demand for the ICT sector itself was the major cause of the downturn in 2001, 2008 was the first cycle in which investors could access real-time information from the Internet and place orders from anywhere, thanks to mobile and broad-band communications. Communications technology was also evident in the close synchronization of the downturn in markets and economies around the world. ¹⁰

The most striking example of the increased speed of transmission of information came during the week following the bankruptcy of Lehman Brothers on September 15, 2008. The next day, losses on Lehman paper caused one money-market mutual fund to 'break a buck', as its net asset value dipped below par. This led investors in the US to withdraw large amounts from money-market mutual funds, which traditionally invest heavily in commercial paper. Fund managers liquidated assets and drastically shortened their maturity. ¹¹ The seizure in the commercial paper market and the hoarding of cash by money mutual funds to meet the flood of redemptions by investors (which exceeded \$300 billion) led the US government to announce its \$700 billion Tarnished Asset Recovery Program by the end of the same week, a measure of how policymaking kept up with the accelerated speed of developments in financial markets. ¹²

The faster and sharper cycles of financial markets in 2008 were readily apparent in the first three charts. But these charts also reveal that 2001 was clearly the second-fastest and sharpest cycle for both commodity prices and the exchange rate as well as during the initial drop of the stock market. This suggests that downturns in financial and commodity markets in the last decade have become progressively shorter, coinciding with the diffusion of the Internet and other communications technologies. The fact that the 2001 recession was not particularly severe in the real economy reinforces that technology played a role in the accelerating pace of recent cycles in financial markets.

While markets digested more information from around the globe at a faster rate, there does not appear to have been any compromise in processing information efficiently. One implication of the short, but steep, drop in markets for stocks, commodities and exchange rates in 2008 was that the markets were quick to find a new equilibrium. As noted earlier, all three of these markets recorded most of their decline in two or three months during the height of the financial crisis, in the autumn of 2008, before bottoming out early in 2009 and then recovering.

Financial markets rapidly discounted prices for a wide range of complex factors, including a severe recession in the US, Europe and Japan, a slowdown in emerging markets, changing relative prices as commodity nose-dived, the increasing cost (or complete unavailability) of credit for companies, and the widespread restructuring of the US financial system. Moreover, financial markets overall were able to process this information, even as some sectors were dysfunctional or not functioning at all (notably the markets for inter-bank lending and commercial paper in the US). The ability to process this amount of information in days and weeks, instead of months and years (as in past cycles), is a testament to both the power embedded in new ICT systems and the ability of investors to adapt and master these technologies.

Cycles in financial markets and the real economy

So, while the accelerated pace of cycles was evident in both financial markets and in the real economy during the 2008-2009 downturn, the amplitude of the declines was markedly different: sharper in financial markets, more muted in the real economy. Can the two be reconciled, or did financial markets over-estimate the severity of the recession in GDP?

Stocks and the exchange rate in Canada were driven lower primarily by the sharp drop in commodity prices. The decline in commodity prices was reflected in a record drop of 7.6% in nominal GDP, due mostly to a 4.2% decline in prices (especially export prices), while the decrease in the volume of output was relatively small. It is this sharp retreat in nominal incomes and prices that financial markets anticipated. With export prices falling rapidly, it follows that real GDI fell much faster than real GDP during the recession (8.3% versus 3.6%). However, while real GDI was a good indicator of the drop in final domestic demand in past recessions, ¹³ domestic spending fell by only 3.0% in 2008-2009.

This contrasts with the US, where the 3.8% contraction in real GDP through the second quarter of 2009 was slightly larger than that in the previous two recessions. US nominal GDP fell by only 2.4% in the latest recession, implying that prices rose 1.5%, a marked contrast to the record drop in Canada's prices.

In summary, the 2008-2009 recession in GDP was driven more by prices than volume in Canada, while in the US it was driven more by volume than by prices. The distinction between prices and volume is important for a number of reasons. The volume of output is more closely linked to employment; this helps explain why job losses have been more severe in the US than in Canada (another reason was the greater reliance on a lower workweek by Canadian employers). As well, price changes are more easily reversed (the doubling of prices for crude oil since January 2009 is a good example) than changes in output.

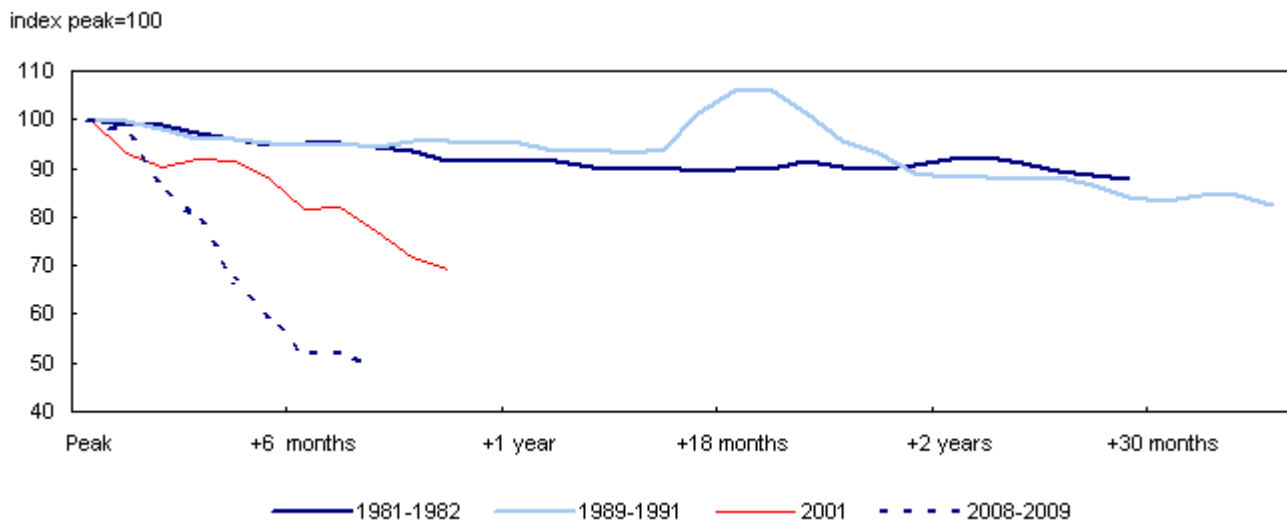


Notes

1. Chief Economic Analyst (613-951-9162)
2. In the year 2008, the price of crude oil changed 5% or more on 39 separate days, the most on record. See "Where's Oil Going Next?" NY Times, January 15, 2009.
3. In fact, it is not obvious that the small declines in the exchange rate in 1981 and 1990 were entirely related to the business cycle, since both occurred during a period of secular depreciation of the Canadian dollar.
4. The 45% drop is based on monthly data. The daily TSX fell 51% between June 6, 2008 and March 6, 2009. The stock market posted its largest weekly drop on record starting on October 6.
5. See P. Cross and G. Salvatore, "The changing role of inventories in the business cycle." Canadian Economic Observer, Statistics Canada Catalogue no. [11-010-XWE](#), November 2003.
6. According to the diffusion index for GDP (which measures the percentage of industries raising production), 55% of industries were still boosting output in September and October 2008. By November, however, only 30% of industries were still expanding. This 25-point swing in the monthly diffusion index was the largest ever (with the exception of a 44-point drop during Ontario's electrical blackout in August 2003).
7. May 2009 is tentatively used as the low for employment. While jobs rose in June but fell more in July, the July decrease appears to be related more to record rain in central Canada than to the business cycle. Substituting July data would not materially change the analysis, as it was only 0.1% below the May level.
8. The impending strike at Inco in the summer of 1982 may have played a role in keeping output high in the spring.
9. See 'Miners hope to learn from past cycles', by Peter Koven, National Post, March 9, 2009. It is also noteworthy that the rest of the mining sector (non-metal mines and oil and gas) moved closely with overall GDP during downturns.
10. Technology also facilitated the diffusion of financial innovations such as subprime mortgages and securitised debt products to investors around the world, which accelerated the spread of the contagion late in 2008. See Frederic Mishkin, "Is Monetary Policy Effective during Financial Crisis." American Economic Review, May 2009.
11. Summarized from Ben Bernanke, "The Crisis and the Policy Response". At the Stamp Lecture to London School of Economics, January 13, 2009, p. 4.
12. See Henry Paulson Jr., "On the Brink: Inside the Race to Stop the Collapse of the Global Financial System." Business Plus (Hachette Book Group), NY, 2010.
13. Real GDI fell 5.5% and domestic demand 5.1% in 1981-1982, while they contracted by 3.7% and 3.6% respectively in 1990-1991.



Chart 3.1 Cycles in commodity prices



Source(s): Bank of Canada Commodity price index.



Chart 3.2 Cycles in the Canada/US exchange rate

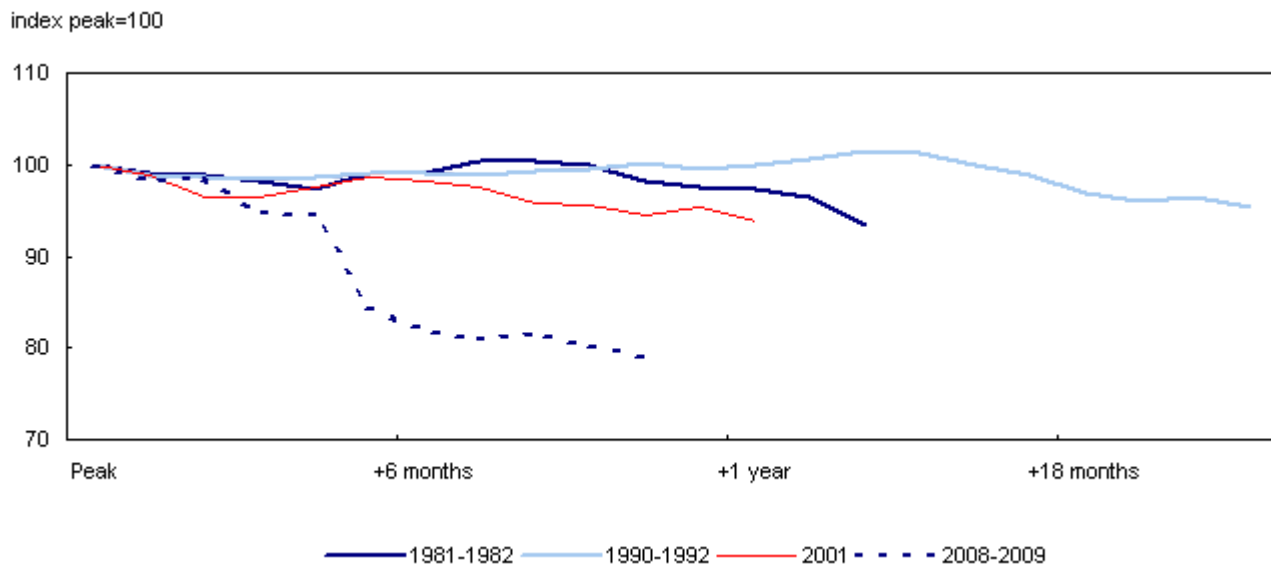




Chart 3.3 Cycles in the Toronto stock market

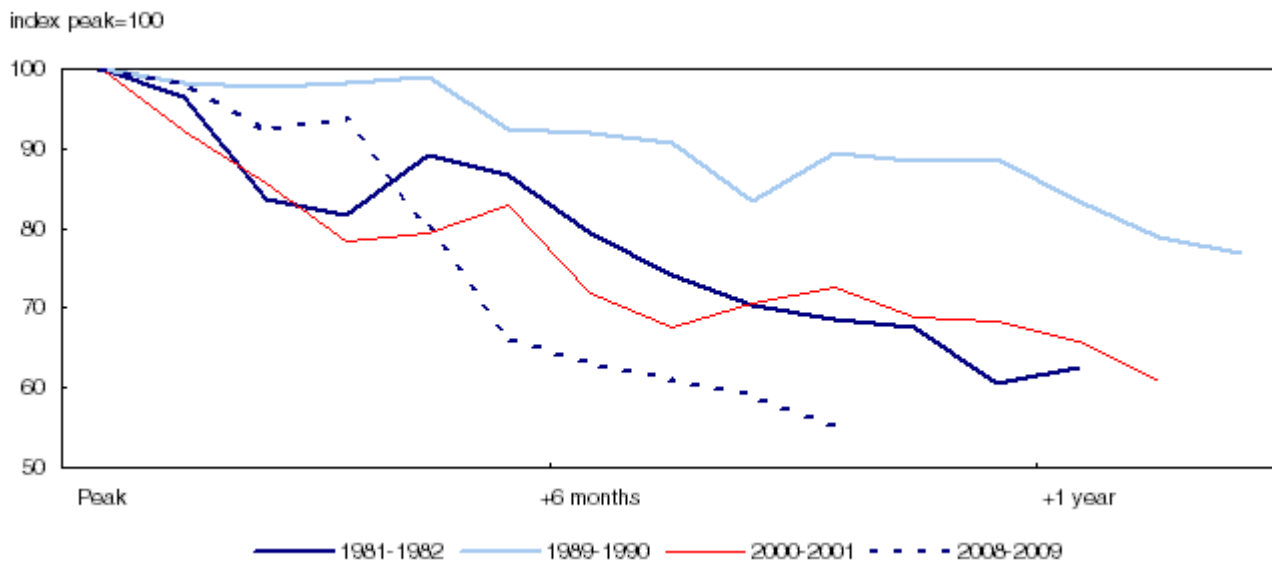
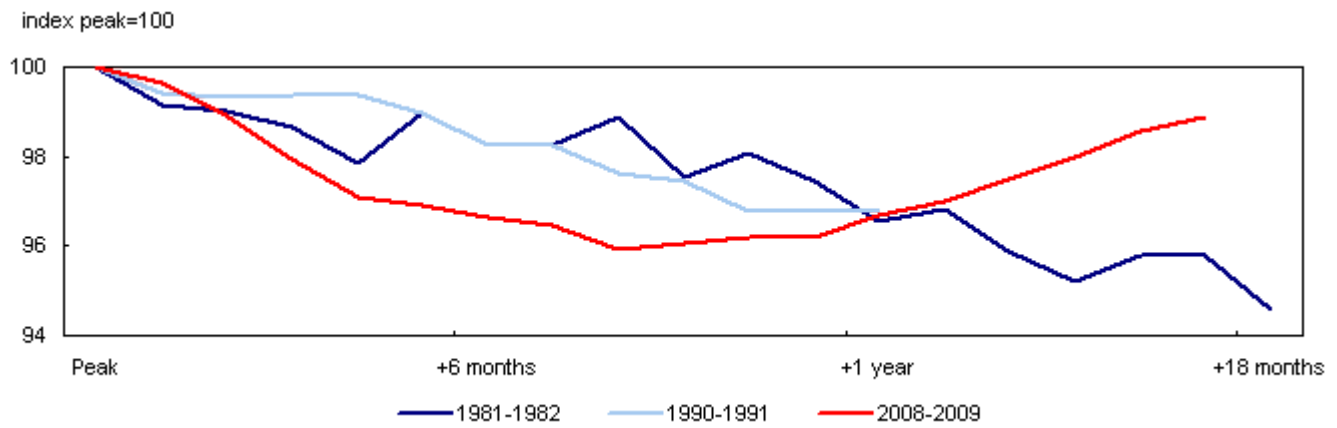


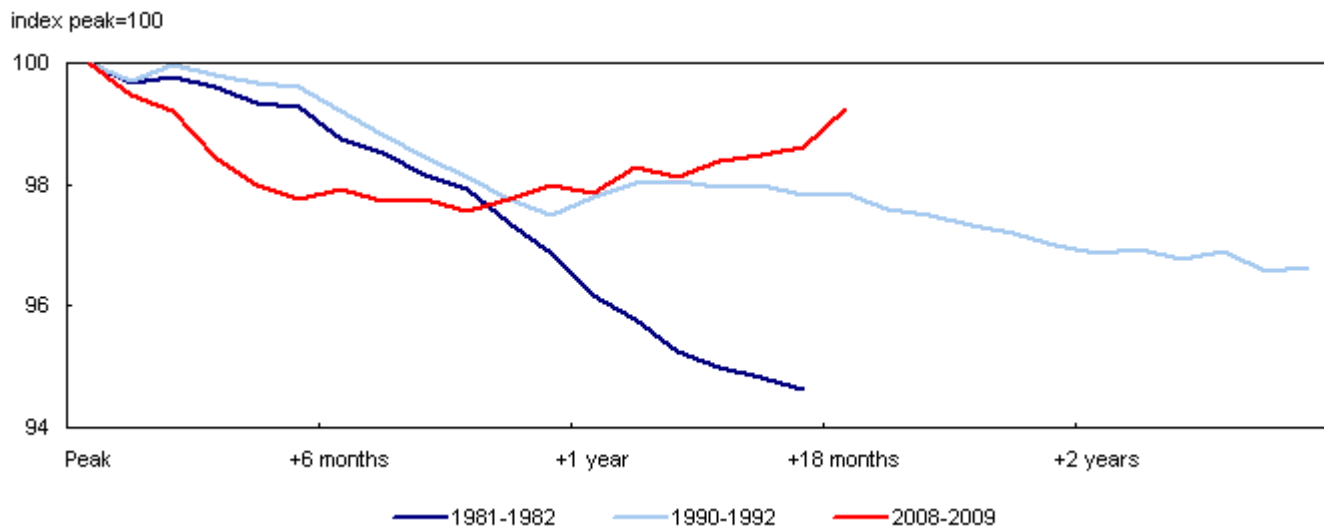
Chart 3.4 Cycles in GDP



Source(s): monthly GDP



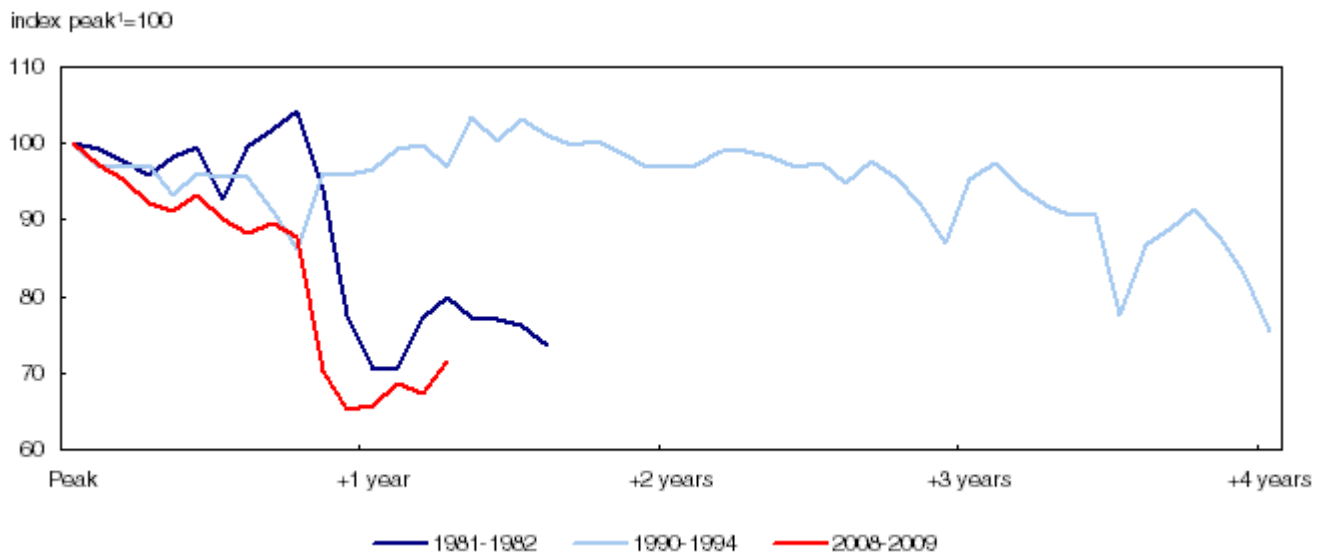
Chart 3.5 Cycles in employment



Source(s): LFS.



Chart 3.6 Output in metal ore mining



1. Peak of total GDP.



Chart 3.7 Current dollar and real GDP in Canada and the US

