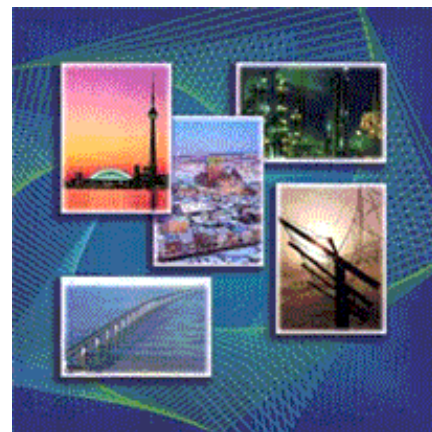


Canadian Economic Observer

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by Philip Cross



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| .. | not available for a specific reference period |
| ... | not applicable |
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| 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 <i>Statistics Act</i> |
| ^E | use with caution |
| F | too unreliable to be published |
| * | significantly different from reference category ($p < 0.05$) |

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How did the 2008-2010 recession and recovery compare with previous cycles?

by Philip Cross ¹

In Canada, the major macroeconomic indicators of real GDP and employment have recovered their losses posted during the 2008-2009 recession. The return to pre-recession levels signifies that the recovery portion of the business cycle is complete and the expansion phase is beginning. This is a significant achievement, given that the global economic downturn which began in 2008 was the most severe and synchronized since the 1930s. Canada is the only G7 nation to have recouped its losses from the 2008-2009 recession, as both real GDP and employment remain below their pre-recession levels in the other six G7 countries. ²

With the recovery phase essentially complete in Canada, it is appropriate to compare the latest cycle of recession and recovery with previous cycles. The purpose of this paper is to highlight some of the similarities and differences between the latest cycle and previous ones. In so doing, this paper also reminds readers of some of the basics of how Statistics Canada determines whether an economy is in recession.

The focus of the comparison with the latest cycle is the 1981-1982 and 1990-1992 recessions and recoveries. There are a number of reasons for concentrating on these three cycles. Many similarities exist among the three recessions, including the fact that all were severe downturns, involving large drops in GDP, business investment and employment. There are also reasons to exclude other periods when the economy weakened. Unlike the US, Canada in 2001 avoided an outright recession. The recessions in 1980 and 1974-1975 are excluded as they were too short and too mild to be compared with the severe recessions starting in 1981, 1990 and 2008. One measure of the relative severity of these last three recessions is that real GDP fell enough to induce employers to cut jobs, while employment did not contract in 1974-1975 or 1980.

The 2008-2010 cycle in output and employment

Figure 1 shows the pattern of monthly real GDP, employment and hours worked in the most recent recession and recovery. Most striking is that jobs contracted at only half the rate at which output fell during this recession. This is because employers in Canada relied almost equally on reductions in employment and shorter workweeks in order to lower total hours worked in line with output.

While both real GDP and employment were clearly in recession in late 2008 and the first half of 2009, the exact dates of both the onset and the end of the recession remain ambiguous. Monthly output hit a high in July 2008, partly because supply disruptions that had hampered output in the spring of 2008, notably for energy, were partly resolved in that month (these supply disruptions also suggest that not all of the slowdown in overall GDP that

occurred in the spring was related to the beginning of the recession in the US). ³ Therefore, the July peak might not have been due only to cyclical factors. The dip in GDP in August may have reflected a return to more normal levels of energy output and not the onset of recession, and indeed output was stable in September before clearly beginning to recede in October.

Meanwhile, employment grew steadily in 2008, hitting its high in October. However, all of the small gain in jobs in October 2008 resulted from hiring related to the federal election. This suggests that the cyclical peak in labour demand was in September 2008, and hours worked began to fall in October even as employment edged up. This would align the peak in jobs with that in GDP, in the scenario outlined above. Similarly, the low in employment in July 2009 may reflect a new seasonal pattern in education employment that first appeared in 2008, and as such could be slightly altered when the seasonal factors in the labour force survey are updated in future years. May 2009 appears to be the trough in monthly GDP, when widespread plant closures in the auto industry as two major firms went bankrupt depressed output, and the same month was the low in hours worked.

Output compared with previous cycles

Real GDP during the last three recessions and the recovery path to pre-recession levels are compared in Figure 2. Each cycle shows unique features. The contraction that occurred during 1981-1982 had the largest peak-to-trough decline, but was uneven, with several months of growth interspersed in a steep downward trend, followed in 1983 by the sharpest recovery of the three cycles. The 2008-2009 downturn was not as steep overall as 1981-1982, but nevertheless set a post-war record for the most months (8) of uninterrupted decline, a testament to how the cyclical forces unleashed by the global recession overwhelmed the irregular factors that so often produce 'noise' in the monthly data evident during the two other recessions. Partly as a result of the strong downward pulse in the cyclical movement of the economy, the initial speed of descent in 2008-2009 exceeded that in the other two recessions.

The recession that began in 1990 was not as severe as those starting in 2008 or 1981 in terms of either the initial rate of decline nor the total peak-to-trough contraction. However, it was the most prolonged before recovery clearly was sustained. After a year of declines, real GDP showed a tentative upturn in April and May of 1991 (after the January start of the Gulf War and the introduction of the GST sharply lowered spending early in the year), but growth stalled over the remainder of 1991 and early in 1992 (GDP in March 1992 was the same as in May 1991). This had two implications. First, the slack in output led employers to resume job cuts, and employment did not bottom out until 1992. This was not just a 'job-less' recovery; the absence of GDP growth for almost the entire second year of the 1990-1992 cycle, as shown in Figure 2, implies a 'demand-less' recovery as well. Second, the delayed recovery meant that GDP did not regain its pre-recession level until three full years after the recession began. This compares with just over two years in the 1981 cycle and 18 months in the 2008 cycle.

The different speeds of recovery show why it is difficult to state categorically that one recession is more severe than another. While the peak-to-trough declines in real GDP were larger in 1981-1982 and in 2008-2009, the lingering nature of the weakness in 1990-1992 implies that more output was lost relative to zero or potential growth. Peak-to-trough declines in GDP capture only the depth of a recession, while duration is also an important facet of its severity (another is diffusion, or how widespread a recession was ⁴). This underlines that the cost of a recession is not only the actual drop in output, but also the growth that is foregone both during the recession and in the recovery.

Employment and previous cycles

The cycles in employment are shown in Figure 3. There are several noteworthy differences with the cycles in real GDP shown in Figure 2. First, a longer time passed for employment to return to pre-recession levels – four years after the 1990 recession began and three years after 1981, versus three and two years for GDP. However, the recovery in 2010 was completed closer together for employment and output at about two years. The delayed recovery in the early 1990s is especially notable, as mentioned earlier, because it involved a rare 'double dip'; employment clearly fell into 1991, before a brief upturn and then another sharp contraction lasting nearly a year in response to the stall in GDP in the second half of 1991 and early 1992. ⁵ However, the double-dip that occurred in jobs did not take place in hours worked, which fell for seven straight quarters between the fourth quarter of 1990 and the second quarter of 1992 (although the 5.0% total drop in hours worked in 1990-1992 was less than the 6.8% reduction in 1981-1982).

The peak-to-trough decline for employment in the 1981-1982 recession was clearly the largest of the three slumps, at 5.4% versus 3.4% in 1990-1992 and 2.4% in 2008-2009. But again this does not necessarily mean that the cycle in 1981-1982 had the worst overall impact on jobs. Employment recovered quickly in 1983 compared with the delayed recovery after 1992. As a result, the shaded area B in Figure 3 is greater than A. This implies that the cumulative loss of jobs over the whole cycle of recession and recovery in the early 1990s was larger than that in the early 1980s. ⁶ Put another way, the peak-to-trough decline in a recession does not capture the total deviation from the line representing zero growth, which is also determined by the duration of the downturn and the speed of the subsequent recovery. By any measure, the 2008-2009 recession was less severe for employment: the job loss was smaller and the economy recouped its losses more quickly than during the other two cycles (the recovery in 2010 was almost over in the same amount of time as it took for the recession to hit bottom in 1982 and well before the trough in 1992).

Employers in Canada resorted almost equally to a shorter workweek and to jobs cuts in order to lower their monthly labour inputs by 4.5% in the 2008-2009 recession. This suggests that they correctly anticipated that the downturn of demand in Canada would be limited both in scope and in duration, after the initial shock to global financial markets and the world economy began to dissipate. Employers in the US also correctly judged the greater severity of their recession, and relied much more on cuts to employment, which fell by a post-war record of 6.1%. In the previous two recessions, employers in Canada relied more on job cuts than a shorter workweek to lower labour inputs, by a proportion averaging 70% versus 30%. This almost exactly matched the behaviour of employers in the US. However, this ratio was steady in the US during the latest recession, ⁷ while it fell to 53% in Canada, which underscores the different behaviour of Canadian employers in 2008-2009.

Much of the reduction in hours worked in Canada came from a 3.3% drop in full-time positions in 2008-2009. Full-time employment at the end of 2010 was 64,000 (or 0.5%) from regaining its level of October 2008, which largely explains why total hours worked remain 0.7% below their September 2008 peak. By comparison, it took over four years for full-time jobs to recover their July 1981 peak, and almost seven years in the 1990s (in April 1997 jobs finally returned to the high set in July 1990). This reflects much larger cuts to full-time jobs in the previous two recessions (7.4% in 1981-1982 and 6.0% in 1990-1992).

While real GDP and employment broadly move in tandem during recessions and recoveries, they also can move at different speeds, with jobs usually changing more slowly. This underscores why Statistics Canada and the NBER (the arbiter of recessions in the US) look at both output and employment when judging whether the economy is in recession and determining the dates on which a recession began and ended. For a number of reasons, neither organization uses the oft-cited rule of thumb of consecutive declines in quarterly GDP as the definition of recession. First, as noted earlier, monthly and quarterly movements in the economy are 'noisy', reflecting any number of irregular changes in the economy that obscure the underlying cyclical trend. These irregular events reflect factors such as the 2003 electrical blackout and the Olympics to labour disputes to unusual weather and new seasonal patterns. As noted in last month's feature article, quarterly GDP has been more susceptible to small declines resulting from these events: output fell in five quarters outside of recessions since 1982, while quarterly employment never declined outside of recessions. ⁸ Second, output and employment can diverge according to how employers adjust hours worked as well as the result of changes in labour productivity.

The US provides the best example of how the relationship between output and jobs can change over time. After decades of employment slightly lagging the drop of output during recessions, employment fell before output began to contract in 2008. ⁹ More significantly, for the first time on record jobs fell more than output during the recession. ¹⁰ Since the US experience demonstrates that the relationship between output and employment can vary over time, both warrant consideration when determining recession dates. It is noteworthy that when GDP and employment are in conflict, the NBER attaches more importance to output as "the most reliable measure[s] of economic activity." ¹¹

Sectoral demand during recent recessions

Aggregate demand initially fell faster in the 2008-2009 recession, but the total drop during this recession was less than the loss in 1981-1982 and took place over a shorter period of time than in both the 1981-1982 and 1990-1992 recessions. This section looks at which sectors contributed to the different behaviour of demand during these three recessions.

The most striking feature of the 2008-2009 recession was the speed and severity of the contraction in exports (Figure 4). Export earnings plunged 30% in less than six months, and ultimately fell nearly 40% before export growth resumed. ¹² This compares with a drop of about 10% for exports during the recessions that started in 1981 and 1990.

The unprecedented speed and severity of the fall in exports in 2008-2009 reflects the impact on the global economy and trade flows of the unprecedented disruption in financial markets that occurred in the fall of 2008. This disruption triggered a sharp drop in the volume of manufactured goods (such as autos, consumer goods and machinery and equipment) and in the prices of resource exports. In Canada, the drop for commodities followed an extended boom in demand, while manufactured goods such as autos already were on a declining trend. Canada's drop in export earnings was not unusual: almost all major trading nations saw exports shrink by between 30% and 40% during the fall and the winter of 2008-2009. ¹³ Exports have been slow to recover, recouping only about one-third of their losses during the recession. ¹⁴ This is in marked contrast with the previous two cycles, when exports led the recovery.

Lower business investment in plant and equipment is one of the hallmarks of severe recessions. Business investment fell by about 20% in volume in the 2008-2009 recession. This matched the total decline in business investment recorded during the recessions starting in 1981 and 1990 (Figure 5). However, the 20% reduction starting in 1990 took place over three years, while for 1981-1982 it was spread out over two years. Firms matched these total cuts in just three quarters in late 2008 and in early 2009. After lagging early in the recovery, investment has accelerated in 2010 and led growth in the third quarter, but remained well below its pre-recession level, having recovered only half its losses during the downturn.

It is no coincidence that the drop in business investment closely followed the speed and severity of the drop in export earnings. Figure 6 shows the pattern of total corporate income and outlays during the 2008-2009 recession. Once income (mostly profits) began to fall rapidly in the fourth quarter of 2008 as export earnings shrank, firms responded within one quarter by slashing spending at the same rate as their income was contracting.

As noted in an article in the July 2010 issue of the CEO, ¹⁵ inventories have not played a large role in any of the last three recessions. There was no significant increase in inventories relative to sales before any of these downturns. Only the last recession saw any measurable increase in the ratio of stocks to sales, a reflection of the unexpected speed in the drop in sales that took place in the fall of 2008. This upturn was quickly reversed, a testament to the ability of firms to tightly control inventories by means of modern technology (this is also evident in how the ratio of stocks to sales has fallen steadily over time).

With exports posting unprecedented declines in the 2008-2009 slump and business investment sustaining cuts similar to those of previous recessions, how did aggregate demand in 2008-2009 avoid losses exceeding those of earlier downturns? The answer lies largely in the behaviour of household spending (defined as the sum of personal expenditure and residential construction). In both the recessions starting in 1981 and 1990, household spending contracted by nearly 6%, bottoming out about one year after each recession began. In 1981-1982, it took household demand two and a half years to regain its pre-recession level. After the 1990-1991 recession, it took households four full years to return to their pre-recession level of spending. By contrast, household demand fell by only 2% over two quarters during the last recession. With a brisk recovery early in 2009, this loss was essentially recouped by the first anniversary of the onset of the crisis. The strong recovery of household spending explains how overall demand has recouped its recession losses, despite exports and business investment recovering less than half their declines during the downturn.

A number of factors contributed to the greater resiliency of household spending in 2008-2009 compared with previous recessions. Canadian households had strong balance sheets entering and throughout the recession. As noted earlier, employment did not contract as much as during the previous two recessions. Credit flows in Canada were not as impaired in 2008-2009 as they were in the US and in other countries, and total household credit grew throughout the recession. This reflects both a sounder financial system and the massive response from policy makers both to shore up capital and to lower interest rates. Led by household demand, non-government domestic demand in Canada was the only G7 nation to recover to its pre-recession level.

Conclusion

By most conventional measures – real GDP, employment or hours worked – the 2008-2009 recession was less severe than those starting in 1981 and 1990. This holds true whether one is comparing the drop from peak to trough or the time needed to recoup the losses experienced during a recession.

However, the relatively milder outcome of the 2008-2009 recession does not capture the significant impacts stemming from the global financial crisis. Indeed, both output and employment in the early stages of the downturn contracted at the fastest rate of any post-war recession. Mostly, this reflected the evaporation of key export markets and the resulting quick and severe drop in corporate incomes and spending. The economy began to stabilize in mid-2009 in response to unprecedented policy measures, in Canada and abroad, including steps to ensure that Canada's banking system would be less impaired than those of the US and Europe. As a result, the recession was milder in Canada than in other countries, and the subsequent recovery was quicker and more complete, with Canada the only G7 nation where economic activity had returned to pre-recession levels.

Notes

1. Chief Economic Analyst (613-951-9162)
2. For real GDP, in the third quarter the shortfalls from pre-recession highs range from 0.6% in the US to 1.8% in Germany and France, 3.1% in Japan, 3.9% in the UK and 5.4% in Italy. For employment, the shortfall was 0.6% in France, 0.9% in Germany, 2.1% in Italy, 2.5% in Japan, 3.7% in the UK and 4.8% in the US.
3. Besides production problems at offshore oil platforms at the Terra Nova oil field and fires in the oilsands, output also was dampened by a new February holiday in some provinces and record snowfall in parts of central Canada.
4. It is noteworthy that the diffusion index (or the share of industries posting output growth) hit a low of 35.8% early in 2009, above the low of 31.3% in December 1990 and 33.6% in August 1981. Diffusion hit its all-time low of 25.4% during the electrical blackout in August 2003.
5. This underscores an important point about the relationship of output and labour input as measured by hours worked. The two broadly move together, separated only by minor changes in productivity which usually is relatively stable in the short-run. The idea of a 'job-less recovery' is predicated on the fallacious notion that the dynamics of the labour market are separate from output: in reality, the two are inter-twined and move closely together in response to macro-economic forces.
6. In mathematical terms, the integral of the area below the zero line denoting no change in jobs is greater during the 1990-1992 cycle than in 1981-1983. Since the drops that occurred in the first year of each of the two recessions were essentially the same, and since both shared common losses for much of the second and third years, the comparison of which was worst is decided by comparing the shaded areas A and B.
7. See M. Elsby, B. Hobijn and A. Sohn "The Labour Market in the Great Recession." Brookings Papers on Economic Activity, Spring 2010, p. 10.
8. P. Cross, "Slowdowns during periods of economic growth". Canadian Economic Observer, Statistics Canada Catalogue [11-010-X](#), December 2010.
9. Employment in the US fell 0.2% in the second quarter of 2007, and overall was unchanged in the four quarters of 2007 even as real GDP grew 2.3%. Real GDP posted its first decline of the recession early in 2008.
10. Real GDP in the US shrank by 4.2% during the recession, while jobs fell 5.5% on a quarterly basis. Monthly employment fell 6.1% between December 2007 and December 2009.
11. Business Cycle Dating Committee (BCDC), National Bureau of Economic Research, September 20, 2010. While the BCDC looks at other variables such as industrial production, sales, personal income and hours worked, the Chair of the BCDC wrote that "the two main indicators the committee considers in deciding on the dates of turning points in economic activity [are] real GDP and payroll employment." Robert Hall, "Economic Fluctuations and Growth." NBER Reporter, 2010, Number 1, p. 1. The BCDC decides how to weight output and jobs on an ad hoc basis for each turning point.
12. The graph shows nominal exports, as both volumes and prices fell sharply during the recession, and the latter is important in understanding the drop in corporate income and outlays. In real terms, exports fell about 5% in both 1981-1982 and 1990-1991, versus 20% in 2008-2009.
13. Araujo, S. and J. Oliveira Martins, "The Great Synchronisation: tracking the trade collapse with high-frequency data." VoxEu.org, November 27, 2009.
14. Export earnings fell by \$170 billion during the recession, and have risen \$48 billion in the recovery, recouping 28% of its losses. Real exports have recovered one-third of their losses in 2008-2009.
15. P. Cross, "The role of inventories in recent business cycles". Canadian Economic Observer, Statistics Canada Catalogue [11-010-X](#), July 2010.

Chart 3.1 Output and jobs

index December 2007=100

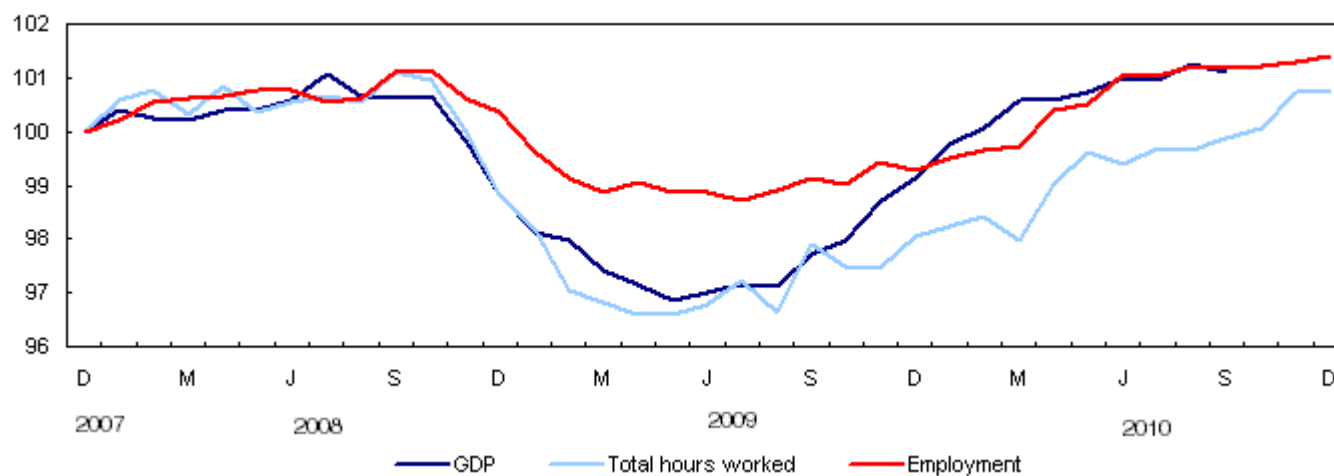


Chart 3.2 GDP cycles

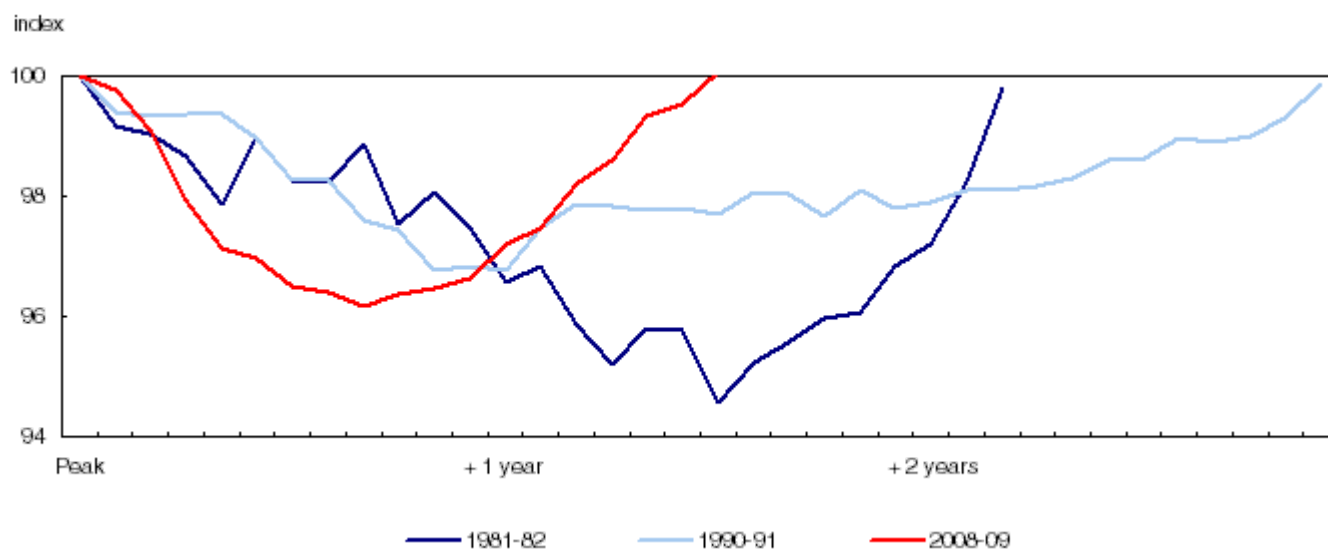


Chart 3.3 Employment cycles

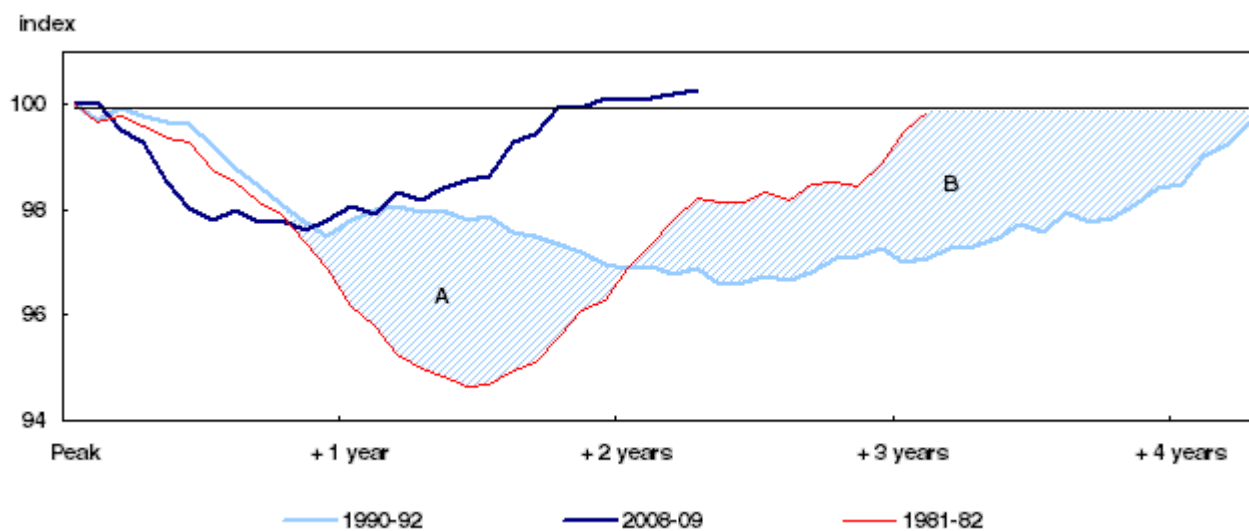




Chart 3.5 Business investment in recent recessions

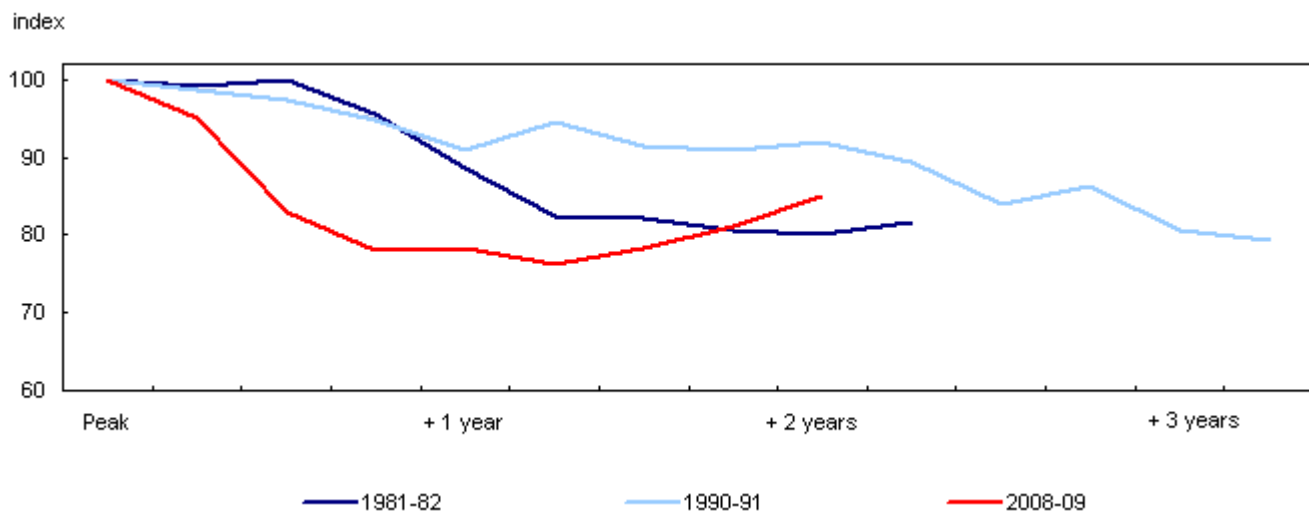
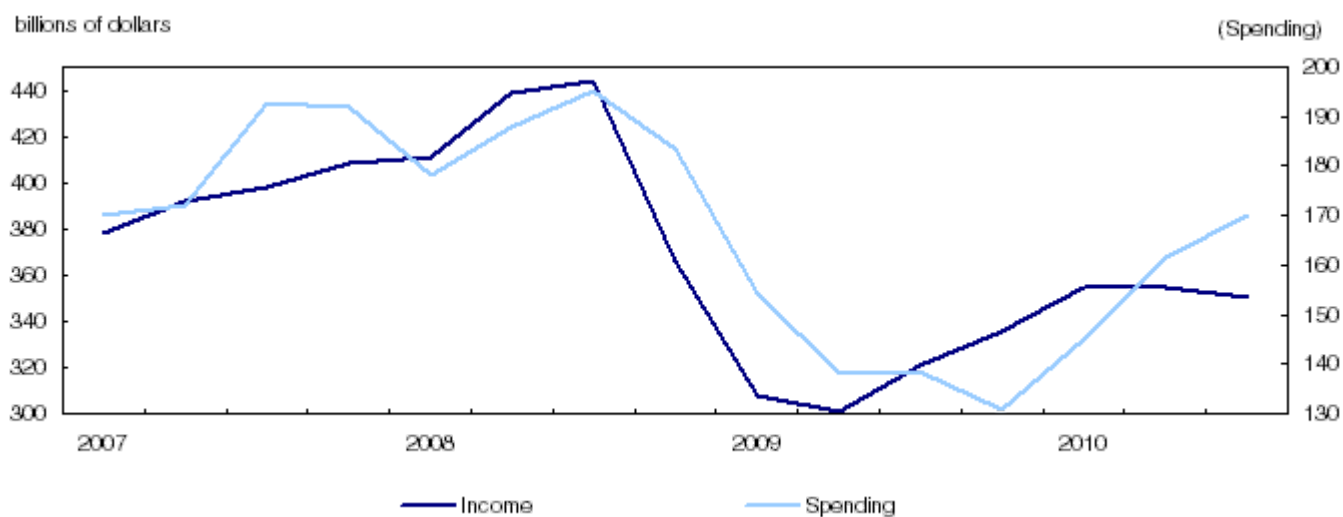


Chart 3.6 Corporate income and capital spending¹



1. Income is from the Income and Outlay Account while spending is total non-financial capital acquisition.

Chart 3.7 Household demand in recent recessions

