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# Turning Points: Business Cycles in Canada since 1926

*Tracking the onset of recessions and the resumption of economic growth is crucial for policymakers, businesses and consumers. To lay a foundation for future research generated by the Institute's new Business Cycle Council, the authors identify the recessions that have gripped Canada since 1929 and rate them, like hurricanes, in categories one through five.*

Philip Cross and Philippe Bergevin

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## THE STUDY IN BRIEF

Market-based economies tend to exhibit cyclical behaviour. The recent financial crisis, with devastating impacts that are still being felt today, has added urgency to the drive to improve our understanding of business cycles. Pinpointing key turning points in the economy, meaning when recession takes hold or growth resumes, is vital for policymakers, businesses and consumers alike.

In this *Commentary*, we clarify how best to define a recession and measure its severity. And, to create a foundation for further research in this area, we provide an authoritative set of business cycle dates for Canada, going back to 1926. These dates were reviewed and approved by the C.D. Howe Institute Business Cycle Council.

What is a recession? Three dimensions identify one, in our analysis: duration, amplitude, and scope – or how widespread is a downturn. In general terms, a recession is a pronounced, pervasive, and persistent decline in aggregate economic activity. Typically, a quarterly drop in the economy, if it is of low amplitude, would qualify as a recession if it was accompanied by weakness in contiguous quarters, but not necessarily outright decline. This would imply a net contraction, or at least stagnation in the economy over a six-month period. Further, we assign categories of severity to Canada's recessions, rating them, like hurricanes, from Category 1 to Category 5.

One observation that follows from this analysis is that, since 1926, recessions have become more exceptional events over time. For the past 30 years, Canada has experienced only three, and prior to the 2008/09 recession the Canadian economy had been on a 16-year uninterrupted expansion phase. This compares, for instance, with the years from 1951 to 1961, when there were four recessionary events. On the other hand, recent recessions have been severe. Apart from the Great Depression and the 1953/54 recession, the past three recessions have been the most severe in our entire chronology. So, in short, recessions have tended to evolve as less frequent, but more severe, events.

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## The recent global downturn, which continues to linger in many parts of the world, emphatically drove home the central importance of recessions and, more broadly, of business cycles.

The analysis of recessionary events, which can have a devastating effect on economic well-being, has long been a fundamental focus of economics. “To understand the Great Depression is the Holy Grail of macroeconomics,” wrote Ben Bernanke before becoming chairman of the US Federal Reserve Board (Bernanke 1995, 1). Business cycles – alternate periods of economic growth and recession – are a recurring feature of market-based economies, and to study them one needs a common set of reference dates for when a recession begins and when the process of recovery takes hold. In turn, a good understanding of business cycles is crucial to decision-making.<sup>1</sup> This *Commentary* supplies an authoritative set of reference cycle dates for Canada going back to 1926, when data on gross domestic product (GDP) became available. These dates were reviewed and approved by the C.D. Howe Institute Business Cycle Council. This Council was recently established to perform similar functions as the well-known NBER Business Cycle Dating Committee in the US, which provides an evaluation of business cycles that is independent of government.<sup>2</sup>

In contrast to a passing pause in growth, a recession is a pronounced, pervasive, and persistent decline in aggregate economic activity. To identify

a recession, three dimensions need to be considered simultaneously: duration, amplitude, and scope – or how widespread a downturn is.

Although one cannot impose hard-and-fast rules on these dimensions, nonetheless a few important observations are possible. First, a quarterly decline in aggregate economic activity is a necessary minimum for a recession. If whatever is provoking the slowdown in economic activity does not lead to at least one quarter of outright decline, it clearly has not produced the sequence of cutbacks cascading from one sector to another that is one of the keys to studying business cycles. Also, requiring more than one quarter of decline would be unwarranted: the 2008/09 downturn shows that even a severe recession conceivably could be confined to a single quarter. Due to technological improvements, it is quite possible that future downturns will be shorter than cycles in the past, which argues for nothing more restrictive than a one-quarter minimum duration.

Second, in terms of amplitude, a 0.1 percent quarterly decline in aggregate economic activity is a necessary but not sufficient condition. For instance, a transitory 0.1 percent quarterly dip in a year otherwise characterized by robust growth is clearly not a cyclical event, but a 0.1 percent decline

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- 1 For instance, a new focus on macroprudential regulation and a worldwide emphasis on countercyclical bank capital requirements have placed greater urgency on the need for a better understanding of business cycles in Canada and elsewhere.
- 2 For more information on the C.D. Howe Institute Business Cycle Council, see <http://www.cdhowe.org>. In the past, Statistics Canada analyzed business cycles in this country, but the agency has discontinued the dating of business cycles and related research as part of recent cutbacks.



stretching over a longer period is a strong signal of an economy in recession. Typically, a quarterly drop in the economy, particularly if it is of low amplitude, should be validated by accompanying weakness in contiguous quarters, but not necessarily by outright decline. This specification implies a net contraction, or at least stagnation, in the economy over a six-month period. Most analysts would agree that such a period is a recession, because the suppression of the economy's proclivity for growth over such a time span signifies the presence of enough recessionary forces to compare with other periods of outright decline.

Third, to determine the minimum scope of a recession similarly requires some judgment. Diffusion indices that show the percentage of industries that expand output over a given period can be used as a gauge, although such indices tend to be more cyclical than the economy itself because of measurement issues. Perhaps more important than a simple rule, such as that half the economy has to be in recession, is to look at the sectors that are affected. In Canada, certain sectors of the economy – manufacturing, construction, the goods-handling services that support these two, and sometimes other services such as retailing and real estate – have always been the most cyclically sensitive. An event that lowers output, but not in these industries, is unlikely to be cyclical in nature.

Finally, the practical definition of aggregate economic activity changes over time to allow analysts to use the best available data. For example, for recent decades, we use quarterly GDP and employment data to identify probable instances of recession, with the exact monthly data then refined with either monthly GDP post-1961 or industrial production prior to 1961, along with monthly employment. Before 1980, unemployment often

is more sensitive to declines in output; after 1980, employment moves closely with the business cycle.<sup>3</sup>

Overall, then, although one can use these considerations as guides in identifying and dating recessions, it is worth emphasizing that it is impractical to establish preset conditions with respect to amplitude, duration, and scope because these considerations need to be judged simultaneously and because the economy and its measurement change over time. Thus, the chronology we present in this *Commentary* is the result of a careful balancing of these different considerations.

## AN OVERVIEW OF BUSINESS CYCLES

The standard definition of business cycles comes from a seminal publication by Arthur Burns and Wesley Mitchell of the National Bureau of Economic Research (NBER):

Business cycles are a type of fluctuation found in the aggregate economic activity of nations that organize their work mainly in business enterprises: a cycle consists of expansions occurring at about the same time in many economic activities, followed by similarly general recessions, contractions, and revivals which merge into the expansion phase of the next cycle; this sequence of change is recurrent but not periodic; in duration business cycles vary from more than one year to ten or twelve years; they are not divisible into shorter cycles of similar character with amplitudes approximately their own (Burns and Mitchell 1946, 3).

Although it is not possible to analyze economic cycles before the eighteenth century, the modern industrial process requires a long chain of orders, production, inventories, and finance, which lends itself to statistical analysis. This began in earnest

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3 In most instances, GDP, employment and unemployment are adjusted for seasonality, but the term seasonally adjusted is avoided for ease of reading.

at the NBER with the Great Depression. In 1930, the US government asked the NBER if there were signs of economic recovery. Burns and Mitchell responded with work that was later published under the titles “Statistical Indicators of Cyclical Revivals” in 1938 and “Measuring Business Cycles” in 1946. This research laid the foundation for the rigorous study of business cycles around the world. Geoffrey Moore found that a workable system of leading indicators of the business cycle was present in all economies except those such as the Soviet Union and Jordan, “where the market was not truly free because of central planning, or because it was overwhelmed by war, weather or political upheaval” (Achuthan and Banerji 2004). Hence, our focus is on societies that are market based, and we are looking for cycles that are widely propagated. Most important, the emphasis is on defining business cycles as a process, not as a specific event. Indeed, it is the process by which fluctuations are transmitted from one sector to another that is one of the major motivations for business cycle analysis.

### What Is a Recession?

A recession is the phase of the business cycle when aggregate economic activity is contracting (see Figure 1). A recession is more than just a passing dip in the economy; rather, it is a question of whether the self-perpetuating mechanism of the business cycle has been engaged. Alan Greenspan, while chairman of the Federal Reserve, was explicit in defining a recession “as a process of deterioration in which events feed on each other to induce the economy into a cumulative decline.”<sup>4</sup> The drop in economic activity is a self-reinforcing process, where lower incomes lead to cuts in spending,

which trigger declines in output and possibly employment, which lead to further reductions in incomes. As a process, it is thus difficult to define a recession in terms of a particular sequence of events, such as consecutive declines in quarterly GDP or specific declines for a predetermined duration.

The NBER defines a recession as “a significant decline in activity spread across the economy, lasting more than a few months, visible in industrial production, employment, real income, and wholesale-retail trade” (Leamer 2008, 6). Its Business Cycle Dating Committee pointedly gives little weight to real GDP for its monthly recession dates because, in the United States, such data are measured only quarterly and are subject to large revisions;<sup>5</sup> neither of these applies, however, to Canada, which has monthly GDP and a track record of smaller revisions.

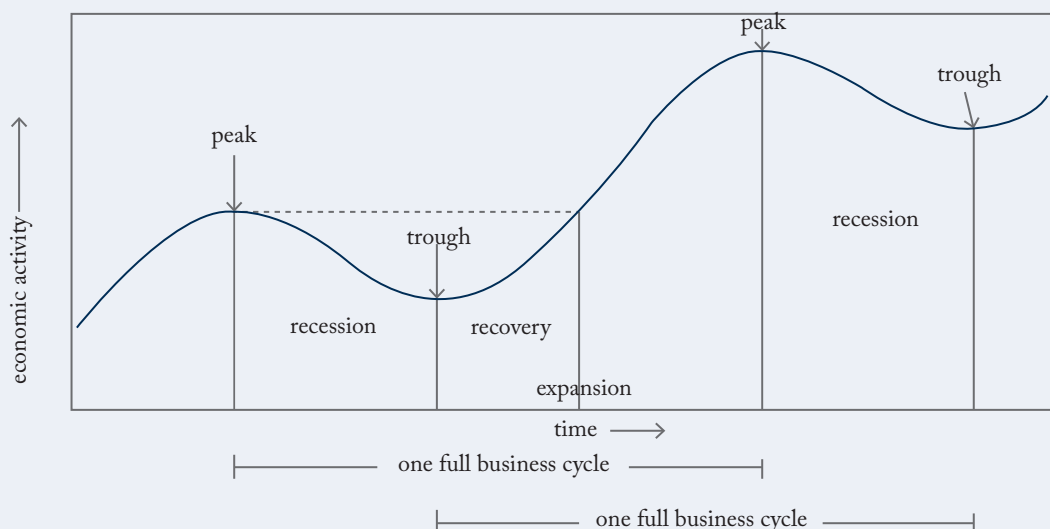
The notion that a recession is defined by two or more consecutive quarterly declines in GDP has become well entrenched in popular discussions. The origins of the consecutive-declines guideline go back to a mistaken interpretation of a simple statistical observation by the NBER that, in practice, recessions in the United States lasted at least six months (Moore 1967). Lay people, anxious to penetrate the byzantine process used at the time to assess cycles, quickly jumped on this as a rule even though it was just a statistical artifact. Indeed, the NBER itself has never used consecutive quarterly declines in GDP as a definition of a recession. A good example is the dating of the onset of the recent recession in the United States: when the NBER announced that the US economy had entered recession at the start of 2008, consecutive declines in total GDP had not occurred.<sup>6</sup>

4 “Six ways to define a recession,” *Economist*, November 3, 1990.

5 The NBER Committee does look, however, at the Macroeconomic Advisers’ index of monthly GDP, an indicator of real aggregate output that, at least conceptually, is consistent with quarterly real GDP.

6 Although subsequent large downward revisions resulted in back-to-back quarterly declines in the first half of 2008, this was after the NBER had made its decision.

Figure 1: Time Stages of the Business Cycle



The flaw in using consecutive quarterly declines in economic activity is readily understood: it is common for small gains in GDP to occur during a recession. Many things influence the short-term course of the economy besides the business cycle, such as power outages, unseasonable weather, strikes, or a good harvest. As a result, quarterly patterns of small increases sprinkled among periods of large decreases are not rare. For instance, aggregate output in the United States declined in 11 quarters classified by the NBER as expansions and grew in five quarters treated as part of a recession, leading to the conclusion that “the main moral of these examples is that magnitudes matter” (McNees 1991, 153), but this is not captured by the rule of consecutive declines.

We therefore reject the simple rule of thumb that a recession is defined as consecutive quarterly declines in GDP.

### The Different Dimensions of Recessions

As noted above, to identify a recession, three dimensions need to be considered: duration,

amplitude, and scope. Contrary to a passing pause in growth, a recession is a pronounced, pervasive, and persistent decline in aggregate economic activity.

Duration is probably the easiest condition with which to set a standard, with at least one quarter of declining economic activity a necessary minimum since the economy is increasingly prone to recurrent pauses in growth that do not result in a recession. If whatever is provoking the slowdown in economic activity does not lead to at least one quarter of outright decline, it clearly has not produced the sequence of cutbacks cascading from one sector to another that is one of the keys to studying business cycles. Requiring more than one quarter of decline, however, would be unwarranted. The 2008/09 downturn – which undoubtedly qualifies as a recession – shows that even a severe recession conceivably could be confined to one quarter. Canada was not too far from that between November 2008 and March 2009, when nearly 80 percent of the recessionary losses in output occurred; one could argue that the recession basically ended in March 2009 but for the

shutdowns arising from the Chrysler and GM bankruptcies in the spring of that year, which were more of a structural than a cyclical event. The speed of the onset of that recession reflected the unprecedented shock emanating from the US financial sector and the new technology available to firms that accelerated their response to the shock (Cross 2010). Since technology will continue to improve, it is quite possible that future downturns will be shorter than cycles in the past, which argues for a condition that is no more restrictive than that of a one-quarter minimum duration.

Are there minimum requirements for the depth (or amplitude) of a recession? Given that a one-quarter contraction is obligatory, a 0.1 percent drop in economic activity is a necessary but not sufficient condition. However, there is always some tradeoff against the period over which this occurs. A transitory 0.1 percent quarterly dip in a year otherwise characterized by strong growth clearly would not be a cyclical event, but a 0.1 percent decline stretching over a longer period would be a strong signal that the economy was in recession. Even here, some judgment is required: if the slump in output led firms to reduce employment, it would confirm that the cyclical mechanism of the economy had been engaged. If, however, GDP fell slightly but employment rose steadily, that would point to the restraining of output by irregular factors, not deliberate cuts by firms, as occurred in Canada in the first quarter of 2008.

Typically, a quarterly drop in the economy, particularly if it is of low amplitude, should be validated by accompanying weakness, but not necessarily outright decline, in contiguous quarters. This specification implies that there should be a net contraction, or at least stagnation, in the economy over a six-month period. Most analysts would agree that such periods are recessions, because the suppression of the economy's proclivity for growth over such a time span would signify the presence of enough recessionary forces to compare with other periods of outright decline.

Another variable to consider when studying the business cycle is its scope. For Moore and Zarnowitz, "the wide diffusion or pervasiveness of business cycles, was and remains their common and most salient characteristic" (1984, 737). In this *Commentary*, we use a diffusion index for GDP, which Statistics Canada formerly calculated, that shows the percentage of industries that expand output in a particular month (see Cross 2004). Although diffusion indices are useful measures of the pervasiveness of an economic phenomenon, they do suffer from some shortcomings – for example, two-thirds of the index we use is made up by goods-producing industries and one-third by services when their actual weights in GDP are the reverse, so our index tends to be more cyclical than is the economy itself.

In analyzing the pervasiveness of a particular economic event, we can also look at which sectors are affected. Certain sectors – manufacturing, construction, the goods-handling services that support these two, and sometimes other services such as retailing and real estate – have always been the most cyclically sensitive, and an event that lowers output, but not in these industries, is unlikely to be cyclical in nature. A good example was the stall in GDP in the second quarter of 2003, which was concentrated in utilities and travel-related services, the latter due to the outbreak of SARS, while construction and manufacturing posted a net gain. This pattern pointed to a transitory, rather than a cyclical, source of the slowdown in output. Still, a model of presumed behaviour cannot be imposed dogmatically, since industry patterns change over time.

Overall, while these considerations are used as guides in identifying and dating recessions, it is worth emphasising that it is not practical to establish pre-set conditions in regards to amplitude, duration and scope, because these three considerations need to be judged simultaneously, and the economy and its measurement changes over time.



## AGGREGATE ECONOMIC ACTIVITY

The standard definition of business cycles is not specific in how it defines aggregate economic activity. Geoffrey Moore, who became the NBER's leading expert on business cycles, noted, "[t]he vagueness of the specification simply recognizes the fact that one should use the best data available at any given time, taking careful account of possible biases due to changes in the quality of the information" (1967, 16).<sup>7</sup> This flexibility in measuring aggregate economic activity is increasingly important the further back one tries to push the chronology of business cycles. In Canada, monthly GDP data go back only to 1961, quarterly GDP data to 1947, and annual GDP data to 1926. The current version of Statistics Canada's Labour Force Survey began in 1976, replacing an earlier version that started late in 1945. Before that, only intermittent census data on jobs are available. There are ways to work around these gaps in the historical record, but the series we use to judge reference cycle dates are not consistent or of comparable quality over time.

The NBER started with a rather vague methodology of looking at clusters of turning points in hundreds of series, before shifting to more conventional and better-defined concepts such as output and employment. Since we are not interested in pushing the chronology back into the nineteenth century, we focus on GDP and employment as measures of aggregate economic activity. Prior to 1947, when quarterly GDP estimates became available, annual GDP data allow the broad identification of periods of slow or negative growth that might be candidates for recessions. Monthly turning points can be inferred by industrial production or its close companion, the index of the physical volume of business. Although

not as comprehensive as total GDP, for most of this period industrial production was the largest part of the economy, at about one-third of GDP, as well as the most volatile part outside of agricultural output.

For non-census years, economy-wide employment data simply do not exist before the first quarterly Labour Force Survey was undertaken in 1945, and data on seasonally adjusted monthly employment date only from 1953. In the absence of employment data, the regular monthly commentary produced in Statistics Canada's *Canadian Statistical Review* and its predecessor, the *Monthly Review of Business Statistics*, is a useful guide to what was going on in the economy. However, these assessments were based on data that were not seasonally adjusted, an innovation introduced only in 1957, so they need to be interpreted with caution for monthly turning points.

In the post-war era, both quarterly GDP and employment data became available, although they are not of the same quality as for the past quarter-century. The availability of these estimates was well timed, as the late 1940s and 1950s saw many cyclical fluctuations before the economy settled into an extended period of growth in the 1960s. Although quarterly turning points can be determined relatively accurately, the corresponding monthly turning points must be inferred from monthly industrial production and employment data. Post-1960, we are blessed with both quarterly and monthly GDP data as well as employment data, the latter on a consistent basis starting in 1976 after an overhaul of the Labour Force Survey created a small break with the data for 1945 to 1975.

The unemployment rate is another potential candidate for measuring the performance of the macroeconomy, although it has some important drawbacks compared with the employment rate.

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7 An interesting footnote to Moore's career is that in 1946 he took a year off to teach a course in statistics; one of his students was Alan Greenspan and a principal text was *Measuring Business Cycles*, by Burns and Mitchell (1946).

Unemployment is the net result of participants in the labour force minus employment. Participation in the labour force is no doubt partly determined by economic conditions, but it is also strongly related to social and demographic factors, which subtract from its usefulness as an indicator of how the economy is performing. Employment, on the other hand, is more directly affected by economic performance. Nonetheless, in some instances, unemployment can be useful in validating judgments about the presence of recessionary forces.

In theory, total hours worked is a more precise measure of labour inputs than employment, since it takes account of shifts between part-time and full-time jobs within employment and the length of the work week. In the Labour Force Survey, however, the measure of monthly hours worked has two large drawbacks for the purpose of establishing a set of reference cycle dates. First, it is available only back to 1987; second, the measure is highly volatile, since it is quite sensitive to statutory holidays that fall in or near the reference week.

What measure of output and employment, then, should we use? Statistics Canada produces two measures of GDP and employment. For GDP, there is value added by industry, which is also available monthly, and the more comprehensive version from the quarterly Income and Expenditure Accounts; historically, the two have diverged for brief periods, with much closer movements after 1980. Since there is no conceptual reason to prefer one to the other, we use an average of the two as a measure of real GDP growth.

For employment, there is the Labour Force Survey measure available since 1976 and the payroll measure dating from 1991. There are several reasons to favour the former, besides its longer time series. Its coverage is more comprehensive, capturing sectors such as the self-employed and the agricultural industry which are excluded from the payroll survey. It also has a long history of high accuracy, at least at the level of total employment, which is all that is relevant for our purposes. Finally, the Labour Force Survey measure reflects only

changes in employment that occurred during the reference week of the month the survey was taken. The payroll measure of employment reflects the date at which employees received their first pay stub, which could be several weeks or months after they started working; so, strictly speaking, it is not as precise a measure of what actually occurred during a specific month, which is important when determining cyclical turning points.

### **Combining Output and Employment**

Having settled on these measures of output and employment, defining aggregate economic activity then becomes a question of how to combine them. Over time, there has been a fundamental shift in the cyclical relationship between GDP and employment. From the end of the Second World War until 1980, employment was not very sensitive to the business cycle – it either did not decline or it fell with a clear lag in instance where real GDP began to contract. As a result, annual employment never fell over this period. This was the heyday of theories about why employment was less cyclical than GDP, which implies putting more weight on GDP in determining dates of recessions. These theories focused on the relative stability of employment during recessions and why it lagged in upturns. The reluctance of employers to shed workers during a downturn partly reflects low unemployment, which averaged just 3.2 percent in the decade after the Second World War, despite rapid labour force growth.

Employment before 1981 is more useful in determining the severity, but not the timing, of downturns, as they fell only at the end of most periods of declining output, if at all. Instead, the unemployment rate reacted much more closely with periods of declining output, when job growth could no longer keep up with the rapid pace of labour force growth evident in the three decades after the war.

Starting with the 1981/82 recession, however, employment began to move more closely in line with business cycles, and tended to decline during

periods of declining output. This suggests that, starting in the early 1980s, more weight should be given to employment than before, although GDP remains the principal indicator of aggregate economic activity. Prior to the 1980s, as suggested above, unemployment can be used to validate judgments about the presence of recessionary forces. The employment rate – that is, total employment divided by the total population ages 15 years and older – can also be useful as a corroborating indicator of the general presence of recession.

To sum up, aggregate economic activity is best measured by GDP and total employment. The practical definition of aggregate economic activity must change over time, however, to enable us to use the best available data at any given time. We generally use quarterly data to establish the existence of a recessionary event, and monthly data to refine the analysis and identify monthly turning points.

## OVERVIEW OF THE CANADIAN HISTORICAL RECORD

In this section, we present a historical account and chronology of Canadian recessions (see Table 1 for a summary).<sup>8,9</sup> A common set of reference cycle dates for when recessions began and when the process of recovery took hold is an essential first step in developing a fuller understanding of business cycles. Following the suggestion of Nordhaus (2002), we have grouped recessions, like hurricanes, into five categories, with Category

1 being the mildest and Category 5 the most severe. Category 1 recessions are characterized by only a short, mild drop in real GDP and no decline in quarterly employment; in Category 2 recessions, there is a decline in real GDP similar to that in Category 1, but enough to elicit a drop in employment, often because the contraction is quite severe in some sectors of the economy; in Category 3 recessions, there is a longer, and usually more marked, decline in real GDP, often followed by a drop in employment; in Category 4 recessions, there is a substantial decline in both real GDP and employment, usually for a period of about a year or longer; and Category 5 recessions involve extremely rapid contractions in both GDP and employment over an extended period of time.

Establishing a chronology of recessions necessarily implies discarding periods of slow or even negative growth in aggregate economic activity. Such episodes share some similarities with the weaker recessions in categories 1 or 2, but they do not meet our definition as periods of pronounced, pervasive, and persistent decline in aggregate economic activity. Notably, in 1970, 1986, 1995, and 2001, there were periods of considerable weakness in economic activity, but they did not display the process of deterioration, in which events feed on each other to lead to cumulative economic decline, that is a defining characteristic of recessions.

Real GDP stalled in the second quarter of 1970 and the diffusion index dropped to below 50 percent in the first half of the year, which signalled the presence of some recessionary forces, but not

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- 8 Note that in our chronology, monthly dates do not necessarily coincide with quarterly dates. This can be easily explained by a fixed statistical relationship between monthly and quarterly data (Cross and Wyman 2011). Take the hypothetical example of a monthly peak in aggregate economic activity that occurs in January 2012. Subsequent weaknesses in February 2012 and March 2012 could imply that aggregate economic activity in the first quarter of 2012 is lower than in the last quarter of 2011, in which case the quarterly peak in aggregate economic activity would be the last quarter of 2011, and the quarterly and monthly peaks would not coincide.
- 9 For previous attempts at establishing a chronology of Canadian business cycles, see for instance Bodman and Crosby (2000), Chambers (1958), and Cross (1996).

**Table 1: Historical Chronology of Canadian Recessions since 1926**

Monthly Peak (Quarterly)	Monthly Trough (Quarterly)	Category (1 to 5)
April 1929 (1929:Q2)	February 1933 (1933:Q1)	5
November 1937 (1937:Q3)	June 1938 (1938:Q2)	5
August 1947 (1947:Q2)	March 1948 (1948:Q1)	2
April 1951 (1951:Q1)	December 1951 (1951:Q4)	3
July 1953 (1953:Q2)	July 1954 (1954:Q2)	4
March 1957(1957:Q1)	January 1958 (1958:Q1)	3
March 1960 (1960:Q1)	March 1961 (1961:Q1)	3
December 1974 (1974:Q4)	March 1975 (1975:Q1)	2
January 1980 (1979:Q4)	June 1980 (1980:Q2)	1
June 1981 (1981:Q2)	October 1982 (1982:Q4)	4
March 1990 (1990:Q1)	April 1992 (1992:Q2)	4
October 2008 (2008:Q3)	May 2009 (2009:Q2)	4

Note: Monthly dates do not necessarily coincide with quarterly dates. For more details, see Cross and Wyman (2011).

enough to prevent small gains in employment. Further, virtually all of the contraction originated in inventories, as final spending remained firm both in Canada and abroad. Overall, there is no cumulative decline in economic activity over a two-quarter span. While the period qualifies as a marked economic slowdown, it does not display the main characteristics of a recession.

In 1986, a combination of lower energy prices and higher interest rates led to a marked economic slowdown in Canada. The first and the last quarter of that year saw negative real GDP growth, explained to some extent by a surge in imports and a rundown in inventory levels; in both instances, growth in the subsequent quarter made up for lost ground. Employment also remained buoyant throughout the year, a reflection of continued strength in domestic spending. Hence, the overall conclusion is that the 1986 economic slowdown does not meet our definition of a recession.

During the first half of 1995, after a year of strong growth, the situation changed abruptly, with households cutting back on big-ticket and discretionary items, partly as a response to a sharp rise in interest rates, while exports softened and governments cut back on spending. Real GDP, after showing 0.8 percent growth in the first quarter, essentially stalled in the second quarter, with 0.1 percent growth. Economic growth in the second half of the year was also subdued, with real GDP growing at 0.2 percent in the third and fourth quarters, respectively, as inventory accumulation was substantially reduced. Without an actual decline in GDP over six months and with rising employment, however, this period cannot be characterized as a recession.

In 2001, there was a recession in the United States, where the bursting of a financial bubble had a great impact on its economy. The Canadian economy, in contrast, experienced only a one-



**Table 2: Business Cycle Indicators, 1929 (1926=100)**

Index of Physical Volume of Business												
1928 Dec	1929 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
112.5	139.8	127.8	127.5	131.4	124.4	124.5	129.8	127.8	116.3	124.9	122.3	109.6

Source: Dominion Bureau of Statistics. Shaded area represents recession.

quarter dip of 0.1 percent in real GDP, despite three straight quarters of reduced exports to the United States. Final domestic demand rose steadily, buoyed by, and lending support to, higher employment throughout the year; so again this period cannot be considered a recession.

### The Great Depression

The earliest period of severe economic downturn in our chronological survey is the Great Depression of the 1930s. Factory output peaked early in 1929, after which there was a steady drop. Commodity prices began to slip in May 1929 – notably of wheat, despite a poor crop. Since agriculture accounted for 16 percent of Canada's GDP, the 25 percent drop in farm output in 1929 implied that the economy was already in a severe recession when the crop was harvested. By September 1929, recession was showing in most lines of business activity, with auto output hitting a low for the year. The index of the physical volume of business (PVB) tends to support April as the peak, discounting a high in October as partly seasonal and partly a result of heavy selling in the stock market (see Table 2).<sup>10</sup>

Annual real GDP rose 0.6 percent in 1929, which implies that the recession that began in the

summer was severe: by comparison, the recessions that began in 1981, 1990, and 2008 did not lower annual GDP for those years. On the other hand, the fact that annual output rose in 1929 suggests that the recession could not have begun early in the year (the PVB index literally peaked in January), since mathematically it can be shown that annual growth rates are disproportionately influenced by growth at the turn of the year. If output fell early in 1929, it is unlikely that GDP growth for the year could have been positive.

Even though the economy was already in recession, stock market prices in Toronto soared between June and September 1929 to triple the market index level of early 1927. The stock market then nose-dived from 316 (1924 = 100) to 209 in just two months. Both the run-up in the stock market and the crash were more accentuated in Canada than in the United States. After the stock market crash, the economy began to contract rapidly in the fourth quarter of 1929. Annual real GDP then plunged 28 percent between 1929 and 1933, with business investment down 80 percent after the overinvestment of the 1920s and the drying up of funds in financial markets. Census data show the unemployment rate surpassing 20 percent, but since there are no data for unemployment

10 The PVB index is an amalgam of industrial production, trade, transport, and finance of unknown methodology or seasonality. It is claimed that the data are seasonally adjusted, but the results invite skepticism.

Table 3: Business Cycle Indicators, 1933 (1926=100)

Index of Physical Volume of Business												
1932 Dec	1933 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
72.6	68.1	67.0	68.4	69.8	76.4	82.2	84.1	89.8	90.8	88.2	85.5	86.2

Source: Dominion Bureau of Statistics. Shaded area represents recession.

for 1932 and 1933, the actual peak rate of unemployment is unknown.

Financial markets began to stabilize late in 1932 as the stock market index bottomed out at just under 50, while commodity prices and business confidence began to turn around early in 1933. By July of that year, the *Monthly Review of Business Statistics* was able to determine that recovery had begun early in the second quarter. February 1933 was later identified as “the low point of the present depression,” followed by rapid advances in the second and third quarters of that year, a date that the PVB index supports (see Table 3). As well, impressive annual GDP growth of 10.4 percent for 1933 implies that the recovery must have begun early in the year.<sup>11</sup>

After several years of brisk growth, the US economy turned down again in May 1937. Canada was not immune to the ensuing year-long recession south of the border. The stock market plunged 30 percent in September and October 1937, compounding the consequences of a severe drought in Saskatchewan and Alberta that resulted in the smallest wheat crop since 1914. The PVB index hit a post-1929 peak in November 1937, followed by a 20 percent decline in industrial production.

The December 1938 issue of the *Monthly Review of Business Statistics* tagged June of that year as the trough, when both the PVB index and industrial production were at their nadir (see Table 4). The pattern of annual growth in GDP broadly supports these dates: the 8.9 percent gain in 1937 implies that there was no recession until late in the year, while the 1.4 percent increase for 1938 suggests that growth must have resumed early enough in the year to more than compensate for the slump at the start of the year.

It is an interesting question whether one should consider the two recessions in the 1930s as separate events or as part of one elongated recession cycle. Conventionally, if a double dip occurs before the economy has recovered to its previous peak, then both contractions are classified as part of the same recession.<sup>12</sup> The 1930s, however, was a unique period. Almost five years separated the two downturns, with the economy showing a cumulative gain of 34.7 percent over the period, which brought GDP to within 2.6 percent of its 1929 peak after plunging 27.7 percent to its trough in 1933. This implies that both the recovery after 1933 and the 1937 recession could teach us lessons about the dynamics of the business cycle, which ultimately

11 Eichengreen (1992, 299–300) notes that, while Canada formally left the gold standard in 1931 and allowed its dollar to depreciate against the US dollar, industrial production did not begin to recover until early 1933 when recovery began in the United States.

12 See, for instance, Hall (1991).

**Table 4: Business Cycle Indicators, 1937/38 (1926=100)**

Index of Physical Volume of Business												
1937 Aug	Sep	Oct	Nov	Dec	1938 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
123.4	123.8	127.4	127.9	121.4	111.8	106.7	108.8	112.4	110.7	108.4	109.1	110.1

Source: Dominion Bureau of Statistics. Shaded area represents recession.

is the purpose of establishing a business cycle chronology. The 1937 recession was not as severe in Canada as in the United States, where real GDP fell 3.4 percent in 1938, as investment tumbled by a third, while it grew 1.4 percent in Canada. We nonetheless classified this recession as a Category 5 downturn, based on the 10.8 percent drop in the PVB index in the year ending in August 1938, while the annual estimate of jobs fell by 1.2 percent (by comparison, employment in Canada rose by 0.5 percent on average during the 1982 recession).

### The Post-war Transition

At the end of World War Two, although there were widespread fears of a return to depression, which motivated the creation of the monthly Labour Force Survey in 1945 to monitor unemployment, the transition was smoother than anticipated. Despite a brief recession in the United States in 1945, annual real GDP in Canada dipped only 2 percent in both 1945 and 1946 as a result of the rapid demobilization of the armed forces. The drop in domestic spending was confined to government spending, while all other sectors of demand expanded, which technically disqualifies this episode from being a recession on the grounds that it was not diffuse enough. The limited scope of the drop in output was reflected in the new data on employment, which in the fourth quarter of 1946 was up over 9 percent from its level a year earlier despite the dip in GDP.

The NBER identifies a mild recession in 1945

in the United States, but none in 1946 despite a 10 percent drop in real GDP that year, which provides the best example of why a narrow-minded focus on GDP is not always useful in identifying business cycles. In Canada, however, a recession started late in 1947, as real GDP fell in the third quarter and again in the first quarter of 1948. The May 1948 issue of the *Canadian Statistical Review* stated that the downturn “seems to be rapidly disappearing in the spring.” The recession extended from September 1947, after industrial production hit a peak in August, to March 1948, dates consistent with the pattern of quarterly GDP (see Table 5). Industrial production was not as weak as GDP, which was pulled down by non-industrial sectors such as construction.

Canada followed Britain in devaluing its exchange rate in 1949, which apparently was too low as capital flowed into Canada. Although the United States suffered a recession that year, according to the August 1951 *Canadian Statistical Review* “there was no recession in Canada,” a judgment supported by the lack of a cumulative decline in real GDP over any two-quarter span. The governor of the Bank of Canada came to the same conclusion, crediting tax cuts in the 1949 budget and a February 1949 instruction by the Bank that chartered banks should resume lending to large firms.

### The Korean War

Both the onset and the cessation of the Korean War were accompanied by recession. The war began in July

**Table 5: Business Cycle Indicators, 1947/49**

	Real GDP			Real GDP per capita	
	Quarterly	2-Quarter Total	Population	Quarterly	2-Quarter Total
(% change)					
1947:Q2	1.0		0.5	0.5	
:Q3	-1.1	-0.1	0.6	-1.6	-1.1
:Q4	1.9	0.8	0.6	1.3	-0.3
1948:Q1	-0.8	1.0	0.5	-1.4	-0.1
:Q2	0.8	-0.1	0.5	0.3	-1.1
:Q3	2.0	2.7	0.6	1.3	1.6
:Q4	2.0	3.9	0.6	1.4	2.7
1949:Q1	-1.6	0.4	0.5	-2.1	-0.8
:Q2	2.9	1.3	3.1**	-0.2	-2.3
:Q3	1.1	4.1	0.6	0.6	0.4

Notes: Newfoundland joined Confederation on March 31, 1949.

GDP refers to the average of real GDP by expenditure and by industry. Each column level is calculated separately and then the percentage change is rounded to one decimal, so the column on quarterly changes does not always add up to the cumulative total. Shaded area represents recession.

Source: Statistics Canada.

1950 and, with the economy already close to full capacity use, inflation soared to 10 percent, fuelled by heavy anticipatory buying. Although Canada avoided adopting direct price controls, unlike the United States, it did impose restrictions on consumer credit to slow household demand.

Nevertheless, domestic spending continued to increase, and the April 1951 federal budget contained measures to discourage business investment, including a four-year suspension of depreciation and a 20 percent corporate income surtax. Consumers were hit with a 20 percent surtax and a 25 percent tax on durables. As well, the governor of the Bank of Canada asked banks “to co-operate in a policy of keeping down bank credit (Neufeld 1964, 270).” These measures were reflected immediately in lower output over the summer.

Real GDP declined in the last three quarters of 1951; industrial production fell steadily from a peak in April (although it levelled off for a month) to December 1951, with spending on durable goods down by 40 percent. By January 1952 industrial production began to turn up rapidly (see Table 6). Thus, the recession can be said to have occurred over the period between May and December 1951.

In 1953, the Canadian economy slowed rapidly, partly as the 56 percent hike in defence spending the year before eased to only 6 percent. Year-over-year growth in real GDP slowed from 6 percent in the second quarter to 1 percent by the third, while employment fell in each of the last three quarters, the clearest signal of recession as GDP nearly stalled in the second half of the year. Industrial production peaked in March, although it remained



Table 6: Business Cycle Indicators, 1951

	Real GDP		Real GDP per capita	
	Quarterly	2-Quarter Total	Quarterly	2-Quarter Total
<i>(% change)</i>				
1951:Q1	2.7		2.3	
:Q2	-0.1	2.6	-0.7	1.7
:Q3	-0.9	-1.0	-1.7	-2.3
:Q4	-0.1	-1.0	-0.9	-2.6
1952:Q1	4.9	4.8	4.1	3.2

Note: GDP refers to the average of real GDP by expenditure and by industry. Each column level is calculated separately and then the percentage change is rounded to one decimal, so the column on quarterly changes does not always add up to the cumulative total. Shaded area represents recession.

Source: Statistics Canada.

near this level through September. The first quarter of 1954 showed a sharp drop in real GDP, reflecting a poor crop and the further winding-down of defence spending. Both output and employment fell again in the second quarter of 1954 before starting to recover. Industrial production rose tentatively in the winter, but then fell steadily until July. Our assessment is thus of a year-long recession between the peak in July 1953 and the trough in July 1954 (see Table 7).

### 1957

In 1957, real GDP fell in three of the four quarters, with industrial production clearly peaking in March and hitting its low in January 1958, which points to these months as the turning points for this cycle (see Table 8). The slump was brought on by an end to the investment boom that occurred after the Korean Armistice. The clearest symptom of recession was in unemployment, which shot up from a low of 2.9 percent late in 1956 to 6.5 percent in January 1958 before topping out at 7.9 percent in June.

We thus date the recession as extending throughout 1957. Employment fell late in the recession and into the recovery, with a decline between September 1957 and February 1958.

### 1960/61

Real GDP fell sharply in the second quarter of 1960 and the first quarter of 1961, with only tepid growth in between (see Table 9). The weakest sector in 1960 was construction, an industry not captured in industrial output. Industrial production peaked in March 1960, which points to this month as the peak for this cycle, while employment stalled in the second quarter in response to the severe onset of recession, before resuming growth until November. Both industrial production and employment set lows in the winter; activity in December 1960 was particularly depressed by poor weather. The cyclical trough in both output and jobs was in March 1961.

Most of the increase in unemployment occurred before the economy began contracting, with the rate rising from 5.5 percent in September 1959 to

**Table 7: Business Cycle Indicators, 1953/54**

	Real GDP			Real GDP per capita	
	Quarterly	2-Quarter Total	Quarterly	2-Quarter Total	Employment
(% change)					
1952:Q4	2.9		2.2		n.a.
1953:Q1	-0.2	2.7	-0.8	1.4	n.a.
:Q2	1.1	0.9	0.5	-0.2	-0.4
:Q3	0.1	1.1	-0.8	-0.3	-0.3
:Q4	0.4	0.4	-0.4	-1.2	-0.5
1954:Q1	-3.5	-3.1	-4.2	-4.6	0.7
:Q2	-0.3	-3.7	-0.9	-5.0	-0.5
:Q3	1.8	1.6	1.0	0.1	0.4

Notes: n.a. indicates data not available.

GDP refers to the average of real GDP by expenditure and by industry. Each column level is calculated separately and then the percentage change is rounded to one decimal, so the column on quarterly changes does not always add up to the cumulative total. Shaded area represents recession.

Source: Statistics Canada.

**Table 8: Business Cycle Indicators, 1957/58**

	Real GDP			Real GDP per capita	
	Quarterly	2-Quarter Total	Quarterly	2-Quarter Total	Employment
(% change)					
1956:Q4	2.3		1.6		1.2
1957:Q1	−0.8	1.5	−1.5	0.1	0.9
:Q2	−0.2	−1.0	−1.0	−2.5	0.3
:Q3	0.2	0.0	−1.0	−2.0	0.4
:Q4	−1.5	−1.3	−2.3	−3.3	−0.4
1958:Q1	0.6	−1.0	−0.0	−2.4	−1.2
:Q2	1.7	2.3	1.2	1.2	0.8

Note: GDP refers to the average of real GDP by expenditure and by industry. Each column level is calculated separately and then the percentage change is rounded to one decimal, so the column on quarterly changes does not always add up to the cumulative total. Shaded area represents recession.

Source: Statistics Canada.

Table 9: Business Cycle Indicators, 1960/61

	Real GDP		Real GDP per capita		
	Quarterly	2-Quarter Total	Quarterly	2-Quarter Total	Employment
(% change)					
1960:Q1	1.7		1.2		0.4
:Q2	-1.6	0.1	-2.1	-0.9	-0.0
:Q3	0.7	-1.0	0.0	-2.1	0.5
:Q4	0.5	1.1	-0.1	-0.1	0.5
1961:Q1	-1.0	-0.5	-1.4	-1.5	-0.6
:Q2	2.4	1.5	2.0	0.6	1.2

Note: GDP refers to the average of real GDP by expenditure and by industry. Each column level is calculated separately and then the percentage change is rounded to one decimal, so the column on quarterly changes does not always add up to the cumulative total. Shaded area represents recession.

Source: Statistics Canada.

7.1 percent in May 1960 before levelling off at 7.7 percent for most of 1961. This recession is best-known for the refusal of the Bank of Canada to ease credit conditions in response to the recession, leading to the resignation of Governor James Coyne in July 1961 after the government introduced a bill in Parliament declaring the position of the governor vacant.<sup>13</sup>

### 1974/75

The near-record pace of growth in the early 1970s came to a sudden halt in 1974 in the western world's first synchronized slump of the post-war era. Soaring inflation and a financial crisis in the United States triggered by the failure of the Franklin National Bank resulted in a severe recession south of the border throughout 1974.

Inevitably, Canadian exports to the United States posted a marked decline during 1974. Domestic demand and total GDP in Canada were cushioned by a number of fiscal initiatives, however, and quarterly GDP eked out small gains to the end of 1974, while employment fared better (see Table 10). Both GDP and employment fell sharply between December 1974 and March 1975 as an orgy of stockpiling by firms ended abruptly, while a majority of industries cut output in the fourth quarter of 1974 and the first quarter of 1975.

This has always been a difficult recession to characterize. Some sectors, such as housing and autos, experienced very sharp declines, while large parts of the economy were unaffected by the slump. A few sectors, such as energy and metals, even saw bull markets as prices soared. Initially, Statistics Canada had identified a recession beginning in

13 See p 5, David Laidler, *How Shall We Govern the Governor?* CD Howe Institute, 1991.

Table 10: Business Cycle Indicators, 1974/75

		Real GDP		Real GDP per capita			
	Diffusion	Quarterly	2-Quarter Total	Quarterly	2-Quarter Total	Employment	Employment Rate
(% change)							
1973:Q2	51.1	1.1		0.8		1.9	56.7
:Q3	56.0	0.5		0.1	0.9	-0.2	56.3
:Q4	65.5	2.1	2.6	1.7	1.8	1.5	56.7
1974:Q1	57.2	1.2	3.3	0.8	2.6	1.5	57.2
:Q2	51.1	0.3	1.5	0.0	0.8	0.7	57.2
:Q3	50.9	0.1	0.4	-0.3	-0.3	1.0	57.4
:Q4	46.5	0.2	0.3	-0.2	-0.5	0.6	57.4
<b>1975:Q1</b>	<b>45.0</b>	<b>-0.4</b>	<b>-0.1</b>	<b>-0.7</b>	<b>-0.9</b>	<b>-0.7</b>	<b>56.7</b>
:Q2	58.9	0.7	0.3	0.4	-0.3	1.1	56.9

Note: GDP refers to the average of real GDP by expenditure and by industry. Each column level is calculated separately and then the percentage change is rounded to one decimal, so the column on quarterly changes does not always add up to the cumulative total. Shaded area represents recession.

Source: Statistics Canada.

the second quarter of 1974. However, after large upward revisions to 1974, using the Income and Expenditure measure of GDP as well as employment shortens this recession to the first quarter of 1975, although industry-based GDP and its diffusion points to a longer recession.<sup>14</sup> The concomitant decline in monthly GDP and employment in January 1975 points to December 1974 as the peak, while their marked bounce back in March 1975 points to this date as the trough.

## 1980

Accelerating inflation late in the 1970s was followed by the introduction of credit controls in the United States in 1980. This triggered a sharp slump in the market for Canada's housing and auto exports, much as had occurred in 1974 and 1975. This recession had other similarities to that of 1974/75, including more pronounced weakness in GDP than in employment and a relatively small number of

14 This accords more closely with judgments at the time that, while there was "a marked slowdown in the rate of growth of the economy," there was little overt evidence of a pronounced or prolonged contraction. The large upward revision of the data for 1974/75 is what Dale Orr, Chief Economist at Global Insight Canada, was referring to when he said "[w]e've had situations in history where a recession has been revised away, two years later" (quoted in "The 'R' word defined," *Globe and Mail*, October 16, 2008).



Table 11: Business Cycle Indicators, 1980

		Real GDP		Real GDP per capita			
	Diffusion	Quarterly	2-Quarter Total	Quarterly	2-Quarter Total	Employment	Employment Rate
(% change)							
1979:Q4	49.9	0.3		0.0		1.2	59.4
<b>1980:Q1</b>	<b>51.1</b>	<b>0.0</b>	<b>0.3</b>	<b>-0.3</b>	<b>-0.3</b>	<b>0.3</b>	<b>59.4</b>
<b>:Q2</b>	<b>45.0</b>	<b>-0.2</b>	<b>-0.3</b>	<b>-0.5</b>	<b>-0.8</b>	<b>0.3</b>	<b>59.2</b>
:Q3	57.7	0.7	0.5	0.3	-0.2	0.7	59.3
:Q4	60.8	2.4	3.1	2.0	2.3	1.2	59.7

Note: GDP refers to real GDP by industry. Each column level is calculated separately and then the percentage change is rounded to one decimal, so the column on quarterly changes does not always add up to the cumulative total.

Shaded area represents recession.

Source: Statistics Canada.

industries actually affected. The main impact of the recession was a stall in real GDP in the first quarter and a drop in the second quarter of 1980 (see Table 11).<sup>15</sup> Employment rose steadily, the last recession in which it did so, although its quarterly growth slowed to 0.3 percent from over 1 percent before and after the recession. Monthly GDP had a clearly defined peak in January and a trough in June, which weighed heavily in determining our monthly turning points.

### 1981/82

The economy grew at a solid pace for three quarters beginning in the fourth quarter of 1980, raising

both real GDP and employment above their peaks reached before the 1980 recession. This is why we technically classify the 1980 and 1981/82 downturns as separate events, even though both were driven by the same desire to slow inflationary pressures. Interest rates soared above 20 percent in both Canada and the United States, and remained high into the spring of 1982 as the US Federal Reserve experimented with targeting money supply growth instead of interest rates.

The 1981/82 recession is one of the easiest to classify, with all measures clearly and consistently pointing to six quarters of retreat, from the third quarter of 1981 to the fourth quarter of 1982 (see

<sup>15</sup> The two measures of GDP independently show a cumulative decline over consecutive quarters, but at different points in 1980. This is because the chain Fisher measure of GDP from the income and expenditure accounts declines over the second and third quarters, while the constant dollar measure for industry GDP falls in the first and second quarters. This divergence reflects large shifts in relative prices during this period. For the purpose of this paper, we rely on the industry GDP measure to assess this recession, partly because it also provides the measure of diffusion as well as the monthly date. The date of the recession could change slightly when the historical revision to GDP is extended back beyond 1981 in 2013.

Table 12: Business Cycle Indicators, 1981/82

		Real GDP		Real GDP per capita			
	Diffusion	Quarterly	2-Quarter Total	Quarterly	2-Quarter Total	Employment	Employment Rate
(% change)							
1981:Q2	54.0	0.9		0.6		0.7	60.4
:Q3	46.5	-0.9	0.0	-1.2	-0.6	0.0	60.1
:Q4	42.1	-0.2	-1.1	-0.6	-1.9	-0.6	59.6
1982:Q1	41.1	-1.0	-1.2	-1.2	-1.8	-1.0	58.8
:Q2	39.9	-1.2	-2.2	-1.5	-2.6	-1.4	57.7
:Q3	48.4	-0.9	-2.1	-1.2	-2.6	-1.5	56.7
:Q4	44.8	-0.7	-1.5	-1.0	-2.1	-0.5	56.1
1983:Q1	60.6	1.5	0.8	1.3	0.3	0.6	56.2

Note: GDP refers to the average of real GDP by expenditure and by industry. Each column level is calculated separately and then the percentage change is rounded to one decimal, so the column on quarterly changes does not always add up to the cumulative total. Shaded area represents recession.

Source: Statistics Canada.

Table 12). In monthly terms, real GDP had an isolated spike in April, but growth in the second quarter overall remained robust at 1.2 percent. Both output and jobs began to contract rapidly after June, which points to this month as the peak for this cycle. Both fell steadily until October 1982, which we therefore identify as the trough; there was a sharp jump in real GDP during the subsequent month, although the recovery in jobs was delayed slightly by one month. The severity of this recession led some economic historians to dub it “the Great Recession” (see Norrie, Owsram, and Emery 2008, 405), and it continues to show the largest peak-to-trough decline of any downturn since the 1930s.

### 1990/92

The economy began to soften in 1989, when sharp cutbacks in manufacturing led to a levelling off of real GDP growth at around 0.3 percent per

quarter. Employment growth remained solid, however, until the second quarter of 1990, when it joined all the other economic indicators in four quarters of accelerating decline. Monthly GDP dropped sharply in April 1990, followed shortly by employment, which points to a cyclical peak in March 1990 (see Table 13). The contraction worsened significantly in the first quarter of 1991, when the combination of the Gulf War and the introduction of the goods and services tax (GST) sharply depressed consumer spending. Both real GDP and employment bounced back in the second quarter of 1991, raising hopes that recovery was under way, but in retrospect this was a classic example of a so-called Dead Cat Bounce.

What followed instead was an unprecedented year of little or no change in real GDP, even as employment sagged to new cyclical lows and a majority of industries continued to trim output. Monthly GDP posted no net growth between

Table 13: Business Cycle Indicators, 1989/92

		Real GDP		Real GDP per capita			
	Diffusion	Quarterly	2-Quarter Total	Quarterly	2-Quarter Total	Employment	Employment Rate
(% change)							
1989:Q1	52.8	0.9		0.6		1.1	62.3
:Q2	46.0	0.4	1.3	0.0	0.5	0.2	62.2
:Q3	51.1	0.3	0.7	-0.1	-0.2	0.5	62.2
:Q4	47.2	0.1	0.5	-0.3	-0.5	0.1	62.1
1990:Q1	55.0	0.8	1.0	0.6	0.3	0.6	62.2
:Q2	42.8	-0.5	0.4	-0.8	-0.2	-0.0	62.0
:Q3	40.9	-0.6	-1.1	-1.0	-1.9	-0.3	61.6
:Q4	38.9	-1.0	-1.6	-1.4	-2.4	-0.9	60.8
1991:Q1	44.0	-1.2	-2.2	-1.4	-2.8	-1.1	60.0
:Q2	58.9	0.6	-0.6	0.3	-1.1	0.2	59.9
:Q3	47.7	0.2	0.8	-0.2	0.1	-0.1	59.6
:Q4	45.0	0.1	0.3	-0.2	-0.4	-0.1	59.3
1992:Q1	49.1	0.1	0.2	-0.1	-0.3	-0.5	58.8
:Q2	51.8	0.2	0.3	-0.1	-0.2	-0.3	58.4
:Q3	49.9	0.4	0.6	0.1	0.0	0.2	58.1
:Q4	55.2	0.4	0.8	0.0	0.1	0.5	58.0

Note: GDP refers to the average of real GDP by expenditure and by industry. Each column level is calculated separately and then the percentage change is rounded to one decimal, so the column on quarterly changes does not always add up to the cumulative total. Shaded area represents recession.

Source: Statistics Canada.

March 1991 and February 1992, while employment losses accelerated. This poses the question of whether to characterize this second downturn as a continuation of the earlier slump. In retrospect, most of the rebound in the second quarter of 1991 reflected a return of consumer spending to more normal levels after being unusually depressed by

the Gulf War and the GST. That most of the loss in GDP early in 1991 was concentrated in January, when these two events took place, supports this notion.

To declare the two dips in the economy in 1990/91 and 1991/92 as separate recessions implicitly identifies the one quarter of substantive

growth in 1991 as an expansion. Neither output nor employment returned to the levels of the first quarter of 1990 until much later, which is the conventional requirement to classify these downturns as separate events.

Cycles like this also buttress the case for looking at cumulative, not consecutive, growth over two quarters as a signpost to the underlying trend of the economy. The net decreases in real GDP (-0.6 percent) and jobs (-0.9 percent) for the first half of 1991 are probably a better gauge of the underlying course of the business cycle. Monthly GDP and employment started to level off in April 1992, one month after the diffusion index struggled to reach the 50 percent barrier. This points to a trough of April 1992.

## 2008/09

The economy began to soften in December 2007, when several auto plants closed, mostly as a result of changeovers to new models. Auto companies like to synchronize these changeovers with the regularly scheduled shutdowns associated with vacations in July and at Christmas. But part of the layoffs also reflected the first inkling of the structural changes coming as this industry downsized. Output continued to struggle in the first half of 2008, buffeted by a string of supply problems ranging from record snow in parts of eastern Canada to disruptions in the oilpatch in western Canada. The partial resolution of the supply problems in energy output largely explains a transitory spike in real GDP in July 2008, after which it levelled off into October (see Table 14).

Through it all, a majority of industries raised output, while employment rose steadily. However, in mid-September the investment bank Lehman Brothers failed in the United States, setting off a chain reaction in money markets and commercial paper markets, among others, that effectively froze credit flows in that country.

The quarterly recession dates are clearly demarcated from the fourth quarter of 2008 to

the second quarter of 2009 in both GDP and employment. The monthly onset of the recession in Canada was delayed slightly, especially in the employment data, first by a record crop in September and then by a national election in October. GDP was weaker than employment in the autumn, partly because its methodology spread out the record harvest over the year instead of concentrating it in the autumn when the maximum impact on jobs was seen. The election steadied both GDP and employment in October. By November, however, plummeting export demand from around the world and a collapse in commodity prices were fully evident in rapid declines in both output and jobs, which continued unabated until the spring.

Although parts of the economy then began to recover, overall output and employment continued to fall into May 2009, when Chrysler stopped all production while awaiting the resolution of its bankruptcy filing. Monthly output then began its recovery in June, while employment lagged slightly, perhaps because of a new seasonal pattern in education employment, which overall supports May as the trough.

## CONCLUSIONS AND POLICY IMPLICATIONS

Business cycles are an integral part of market-based economies. Developing a better understanding of such cycles thus remains an important focus of the economics profession. The recent financial crisis, with its devastating impacts that are still being felt today, has given more urgency to the need to enhance our understanding of business cycles. The study of business cycles necessitates a common set of reference cycle dates for when recessions begin and when the process of recovery takes hold. In this *Commentary*, we have supplied an authoritative set of reference cycle dates for Canada going back to 1926. These dates were reviewed and approved by the C.D. Howe Institute Business Cycle Council.

One salient observation that flows from our chronology is that, since 1926, recessions have



Table 14: Business Cycle Indicators, 2008/09

		Real GDP		Real GDP per capita			
	Diffusion	Quarterly	2-Quarter Total	Quarterly	2-Quarter Total	Employment	Employment Rate
(% change)							
2008 :Q1	52.0	0.0		-0.1		0.6	63.7
:Q2	60.4	0.3	0.4	0.1	0.0	0.3	63.6
:Q3	54.7	0.5	0.8	0.1	0.2	0.1	63.4
:Q4	39.6	-1.1	-0.6	-1.4	-1.4	0.0	63.2
2009 :Q1	35.8	-2.2	-3.2	-2.4	-3.8	-1.5	62.1
:Q2	44.3	-0.9	-3.1	-1.2	-3.5	-0.4	61.6
:Q3	53.0	0.4	-0.5	0.0	-1.2	0.0	61.3

Note: GDP refers to the average of real GDP by expenditure and by industry. Each column level is calculated separately and then the percentage change is rounded to one decimal, so the column on quarterly changes does not always add up to the cumulative total. Shaded area represents recession.

Source: Statistics Canada.

become more exceptional events over time. For the past 30 years, Canada has experienced only three, and prior to the 2008/09 recession the Canadian economy had been in a 16-year uninterrupted expansion phase. This compares, for instance, with the occurrence of four recessionary events between 1951 and 1961. On the other hand, recent recessions have been particularly severe. Apart from the Great Depression and the 1953/54 recession, the past three recessions have been the most severe in our entire chronology. So, in short, recessions have tended to evolve as less frequent, but more severe, events.

Dating business cycles is, and will remain, a challenging task. Looking forward, the aging of the population poses some challenges. It is possible, for instance, that in the not-too-distant future,

GDP could increase while employment falls as a result of labour shortages as the babyboom generation retires. One proposal would be to adjust employment numbers to take into account the percentage of the population between the ages of 15 and 65, although such a measure could be sensitive to shifting attitudes and policies about retirement. This example underpins the need for the practical definition of aggregate economic activity to be able to change over time to use the best available data. This was one of the guiding principles in establishing the historical chronology of business cycles in this *Commentary*. We hope it to be the starting point of future research on, and enhanced understanding of, business cycles.

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