
Lessons from previous US recessions and recoveries

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The US economy is emerging from a period of significant weakness. This article examines how US economic activity evolved during previous post-WWII recessions and recoveries, and considers what this indicates for the current period.

Recoveries following previous US recessions have tended to be rapid and primarily a result of strength in the household sector. However, previous US recessions have not been associated with the significant financial disruptions that occurred during the global financial crisis. Recoveries in other economies following financial crises have tended to be protracted, especially when associated with synchronised global slowdowns.

Given current economic conditions, particularly the weakness in the household sector, the current US recovery is likely to be quite gradual. Consequently, recovery is likely to be more akin to the protracted recoveries seen in other economies following financial crises, rather than the rapid recoveries that have typically followed other post-WWII recessions in the US.

1 Introduction

The global financial crisis, which began in mid-2007 and continued through to mid-2009, had its origins in the US sub-prime mortgage market. Developments in this market resulted in significant and unexpected disruptions to both real activity and financial conditions in many economies. The US continues to play a central role in global financial markets and accounts for a significant proportion of global demand. As a result, it is likely that developments in the US will play a central role in determining how global activity evolves during the recovery period that has now begun. Consequently, it is useful to understand how the US economy has tended to behave during periods of recovery.

This paper compares the recent US downturn to earlier post-WWII recessions and examines how US activity evolved during previous periods of recovery. It then considers what this may indicate for the current period and whether the current recovery will differ from previous periods as a result of the significant financial stress that contributed to the downturn. It finds that:

- The current US recession has been particularly severe, with very large contractions in business and residential investment. It has also resulted in a significant deterioration in the health of the household sector.
- Previous US recoveries have been rapid, irrespective of the depth or duration of the preceding recession.

This has primarily been a result of rapid and sustained growth in household spending. However, these periods have not been associated with the significant financial stress that contributed to the recent downturn in US activity.

- Given current economic conditions, particularly the weakness in the household sector, the current US recovery may be quite gradual. Such a recovery would be more akin to the protracted recoveries seen in other economies following financial crises, rather than the rapid recoveries that have followed other post-WWII recessions in the US.

The paper is structured as follows: Section 2 briefly summarises the causes of the current recession. Section 3 describes how developments during the current recession compared to previous recessions. Section 4 describes how economic activity evolved during previous recoveries. Section five concludes by considering what previous periods may indicate for the current period.

2 Causes of the recession¹

The recent US recession was contributed to by a range of factors including a pronounced housing market downturn,

¹ This work uses the NBER's dating of US recessions: <http://www.nber.org/cycles.html>

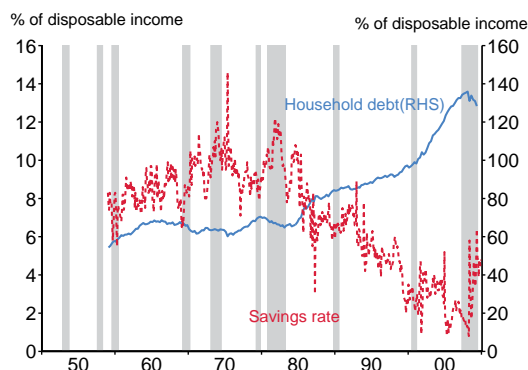
significant financial stress, high real oil prices and a synchronised slowdown in global activity. Additionally, during this period, household and business confidence fell to extremely low levels.

2.1 Housing market and financial conditions

Weakness in the housing market and tight financial conditions were important catalysts for the recent period of weakness in US activity. Much of the strength in housing market activity that preceded the recent recession was a result of unusually low interest rates and relaxed lending standards. These conditions contributed to increased lending to less credit-worthy borrowers. There was also a significant increase in household debt levels reflecting the increased use of credit to fund consumption spending and residential investment (figure 2.1).

Official interest rates increased steadily in the two years prior to the crisis. As significant proportions of less credit-worthy borrowers entered into distress, a number of financial institutions experienced a marked deterioration in their financial positions (Bordo 2008). This prompted a significant tightening in global lending conditions and a marked decline in asset markets.

Figure 2.1
US savings and debt positions
(percent of households' disposable incomes)

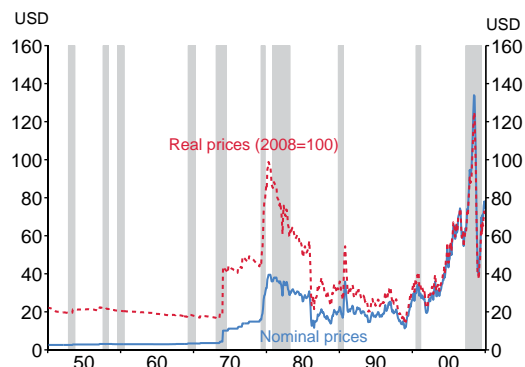


Notes: Recessions shaded.
Sources: Haver, Federal Reserve Bank of St Louis.

2.2 Real oil prices

The IMF (2009) has shown that contractions in output during recessions associated with oil price shocks tend to be particularly large (larger than during recessions associated with financial crises – see figure 3.4) but are generally not long-lasting. In real terms, oil prices climbed steadily for much of the previous decade with prices reaching record levels in 2007. While oil prices have now fallen significantly, they remain elevated in real terms (figure 2.2).

Figure 2.2
Nominal and real oil prices



Notes: Recessions shaded.
Sources: Federal Reserve Bank of St Louis.

2.3 Synchronised global slowdown

The deterioration in financial and real conditions during the global financial crisis was highly synchronised. Weakness in credit and asset markets were transmitted rapidly through the global economy. The related falls in confidence and demand (particularly in the US and other Western economies) contributed to a marked deterioration in global trade, with particular weakness in Asian economies. The weakness in real activity and in financial conditions reinforced each other for some time.

2.4 Comparison to previous periods

In the post-WWII period, there have been nine other US recessions. While these have been contributed to by a range of factors, previous post-WWII recessions in the US have not been associated with the significant financial stress that was seen during the most recent recession. Additionally, the number of factors contributing to the most recent slowdown was greater than usual (table 2.1).

Table 2.1

Causes of previous recessions

	Financial stress	Oil prices	Monetary tightening	Housing downturn	Global slowdown	Other	Details
July 1953 to May 1954			X			X	Post-Korean War changes in fiscal spending, tightening in monetary policy
August 1957 to April 1958			X				Tightening in monetary policy
April 1960 to February 1961						X	Monetary policy tightened prior to recession, fiscal policy contractionary
December 1969 to November 1970			X				Monetary policy tightening to offset inflation pressures, fiscal policy contractionary
November 1973 to March 1975		X			X		Oil price spike, stagflation associated with Vietnam war spending
January 1980 to July 1980			X			X	Monetary policy tightening to offset inflation pressures ("Volcker Disinflation")
July 1981 to November 1982		X	X				High oil prices, monetary policy tightening to offset inflation pressures
July 1990 to March 1991	X	X			X		Financial stress, high oil prices/first Iraq war, savings and loan crisis
March 2001 to November 2001					X	X	Rising unemployment, dot.com burst, September 11 attacks
December 2007 to June 2009	X	X		X	X		Bursting of housing market bubble, global financial crisis/synchronised global downturn, oil price spike

Sources: Labonte and Makinen (2002), NBER.

The only other US recession to be associated with significant financial stress and a synchronised global slowdown was the Great Depression of the 1930s. The appendix of this paper provides a brief comparison of conditions during that period to the recent downturn. However, the Great Depression has been excluded from this analysis due to data limitations.

3 How does the current recession compare to previous recessions?²

The findings from this section are summarised in table 3.1 and figure 3.1.

Compared to previous post-WWII recessions, the most recent US recession has been particularly deep and protracted. Significant weakness was evident in most GDP components, with particular weakness in business and residential investment. Additionally, the most recent recession has contributed to a significant deterioration in the financial health of households.

² This work uses data up to the end of 2009.

Table 3.1
Contributors to previous recession and recoveries

	Period	Contraction							
		Fall in GDP (peak to trough)	Duration of contraction (quarters)	PCE	Residential investment	Business investment	Exports	Imports	Government
Percentage change in output	1954	-2.6	3	-0.5	-3.6	-2.0	-3.9	-10.8	-4.2
	1958	-3.7	2	-1.3	-4.1	-9.7	-12.6	1.8	0.7
	1960	-1.6	3	1.0	-11.1	-1.5	5.8	-6.8	4.0
	1970	-0.6	2	1.4	-7.1	-1.2	4.4	-1.4	-2.0
	1974	-3.2	5	-0.8	-30.2	-10.1	3.8	-11.0	4.6
	1980	-2.2	2	-1.2	-17.1	-4.4	1.7	-13.9	-1.1
	1981	-2.9	4	-0.1	-15.4	0.0	-3.9	-0.1	0.8
	1991	-1.4	2	-1.1	-11.2	-4.4	1.6	-3.8	1.4
	2001	-0.3	-	0.4	0.5	-1.0	-1.3	-1.5	1.5
	2008	-3.7	4*	-1.7	-25.6	-19.7	-15.0	-18.5	2.5
Average ex-2008		-2.1	2.9	-0.2	-11.0	-3.8	-0.5	-5.3	0.6
Contributions to change in GDP	1954	-2.6		-0.5	-0.2	-0.1	-0.2	0.4	-1.0
	1958	-3.7		-0.8	-0.2	-1.0	-0.6	-0.1	0.2
	1960	-1.6		0.6	-0.6	-0.1	0.3	0.3	0.8
	1970	-0.6		0.9	-0.3	-0.1	0.2	0.1	-0.5
	1974	-3.2		-1.0	-1.3	-0.5	0.2	0.1	0.7
	1980	-2.2		-0.8	-0.8	-0.6	0.2	1.6	-0.2
	1981	-2.9		0.6	-0.7	-0.9	-0.7	-0.3	0.4
	1991	-1.4		-0.7	-0.4	-0.5	0.2	0.4	0.3
	2001								
	2008	-3.6		-1.2	-1.0	-2.4	-1.6	3.1	0.7
Average ex-2008		-2.3		-0.2	-0.6	-0.5	-0.1	0.3	0.1
Percentage contribution to change in GDP	1954			18%	7%	5%	6%	-16%	36%
	1958			22%	5%	26%	17%	2%	-6%
	1960			-40%	38%	8%	-19%	-21%	-52%
	1970			-139%	50%	19%	-37%	-12%	74%
	1974			48%	66%	24%	-12%	-4%	-21%
	1980			35%	39%	27%	-8%	-74%	10%
	1981			-24%	26%	35%	27%	9%	-16%
	1991			53%	31%	36%	-11%	-30%	-21%
	2001								
	2008			35%	29%	68%	44%	-95%	-18%
Average ex-2008			-3%	33%	23%	-5%	-18%	0%	

Notes: * NBER's data procedure indicates that the most recent US recession began in December 2008. However, US GDP expanded in 2008 Q2. Hence, the peak-to-trough period for the current recession is 2008 Q2 to 2009 Q2 (four quarters).

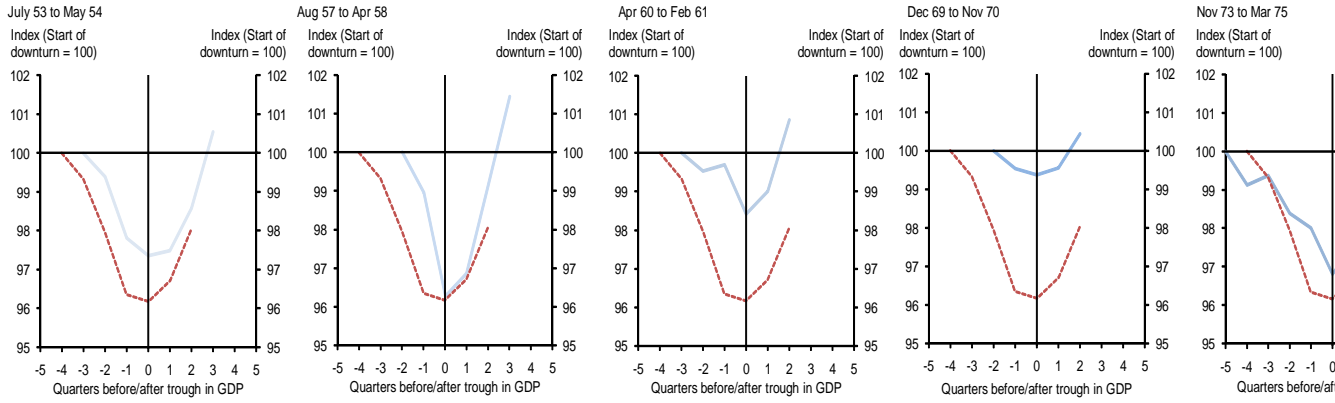
Sources: Haver, RBNZ estimates.

Recovery								
Inventory adjustments	Quarters to recover pre-recession level	PCE	Residential investment	Business investment	Exports	Imports	Government consumption and investment	Inventory adjustments
	3	4.8	20.1	1.3	15.8	3.4	-6.4	
	3	3.8	19.0	-2.2	0.5	8.1	5.3	
	2	1.5	0.8	-0.1	-2.1	0.7	1.6	
	2	3.0	14.5	-2.9	5.4	2.1	-2.5	
	3	4.2	14.0	-0.8	0.9	5.0	1.8	
	2	1.9	7.8	3.7	1.3	9.9	1.2	
	3	6.0	35.6	-9.3	-6.5	8.9	4.7	
	3	1.1	8.9	-2.4	8.4	7.0	-0.5	
	-	2.4	1.1	-7.3	-10.8	-6.5	3.7	
	2.6	3.2	13.5	-2.2	1.4	4.3	1.0	
-1.2		2.8	1.0	0.2	0.6	-0.2	-1.5	0.3
-1.3		1.6	0.3	-0.5	0.1	-0.1	0.7	1.0
-3.0		0.9	0.0	0.0	-0.1	0.0	0.3	1.3
-0.9		1.9	0.6	-0.3	0.3	-0.1	-0.5	1.0
-0.2		3.0	0.3	-0.8	0.1	0.6	0.7	-1.5
-1.6		1.2	0.3	0.5	0.2	-1.0	0.3	2.5
-1.2		3.0	1.2	-0.4	-0.2	-0.5	0.7	-0.3
-0.6		0.7	0.3	-0.3	0.8	-0.7	-0.1	0.7
-1.4								
-1.3		1.9	0.5	-0.2	0.2	-0.3	0.1	0.6
		87%	31%	6%	17%	-6%	-46%	
		54%	11%	-18%	2%	-5%	25%	
		37%	1%	0%	-4%	-1%	14%	
		66%	20%	-11%	11%	-4%	-19%	
		121%	11%	-29%	4%	21%	28%	
		30%	8%	12%	4%	-24%	7%	
		84%	34%	-11%	-6%	-14%	20%	
		49%	20%	-17%	54%	-47%	-8%	
		66%	17%	-9%	10%	-10%	2%	

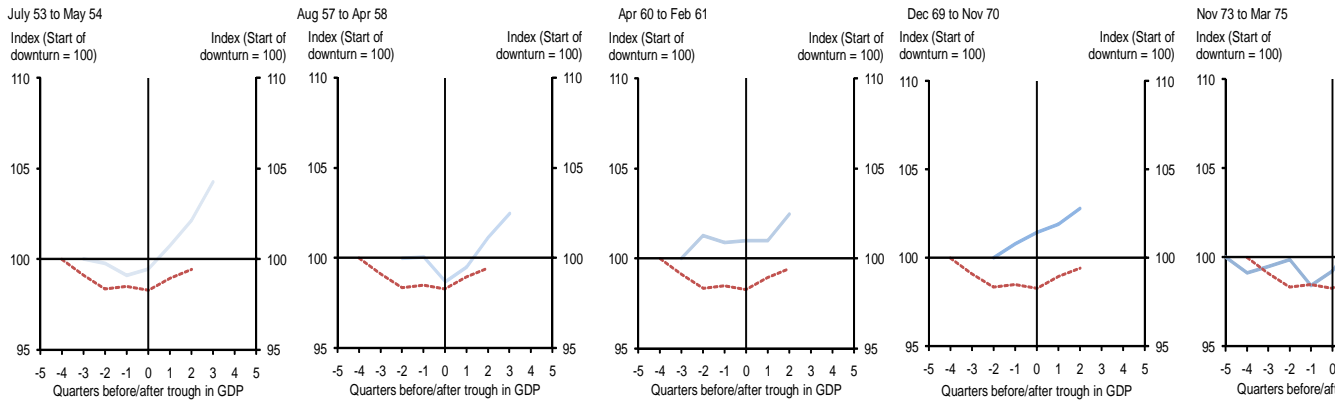
Figure 3.1

Evolution of main economic variables during recessions and recoveries

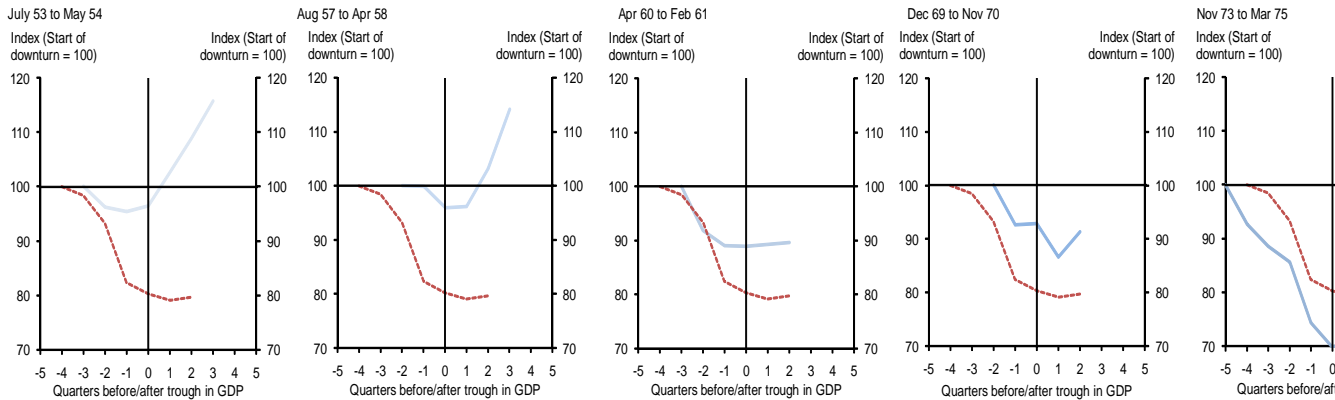
GDP



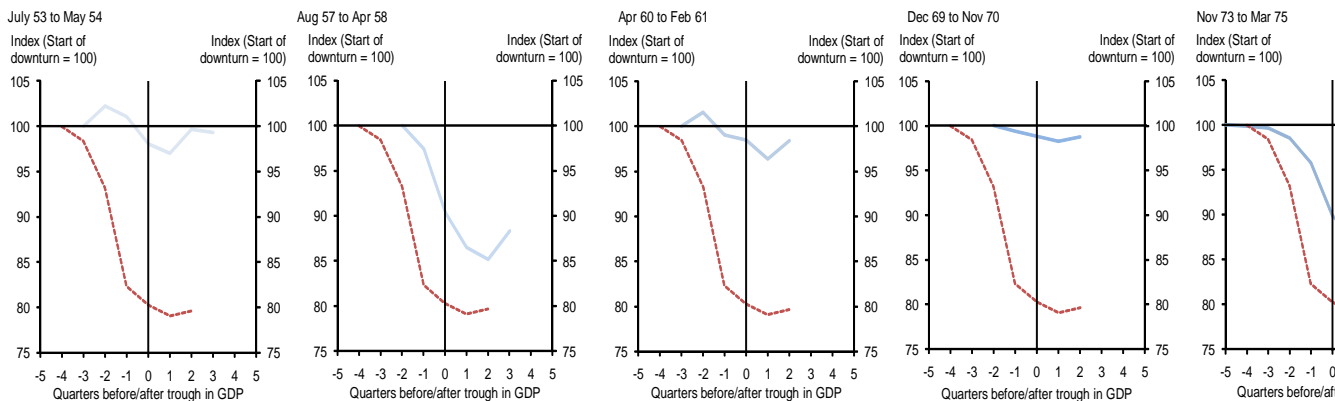
Private consumption spending



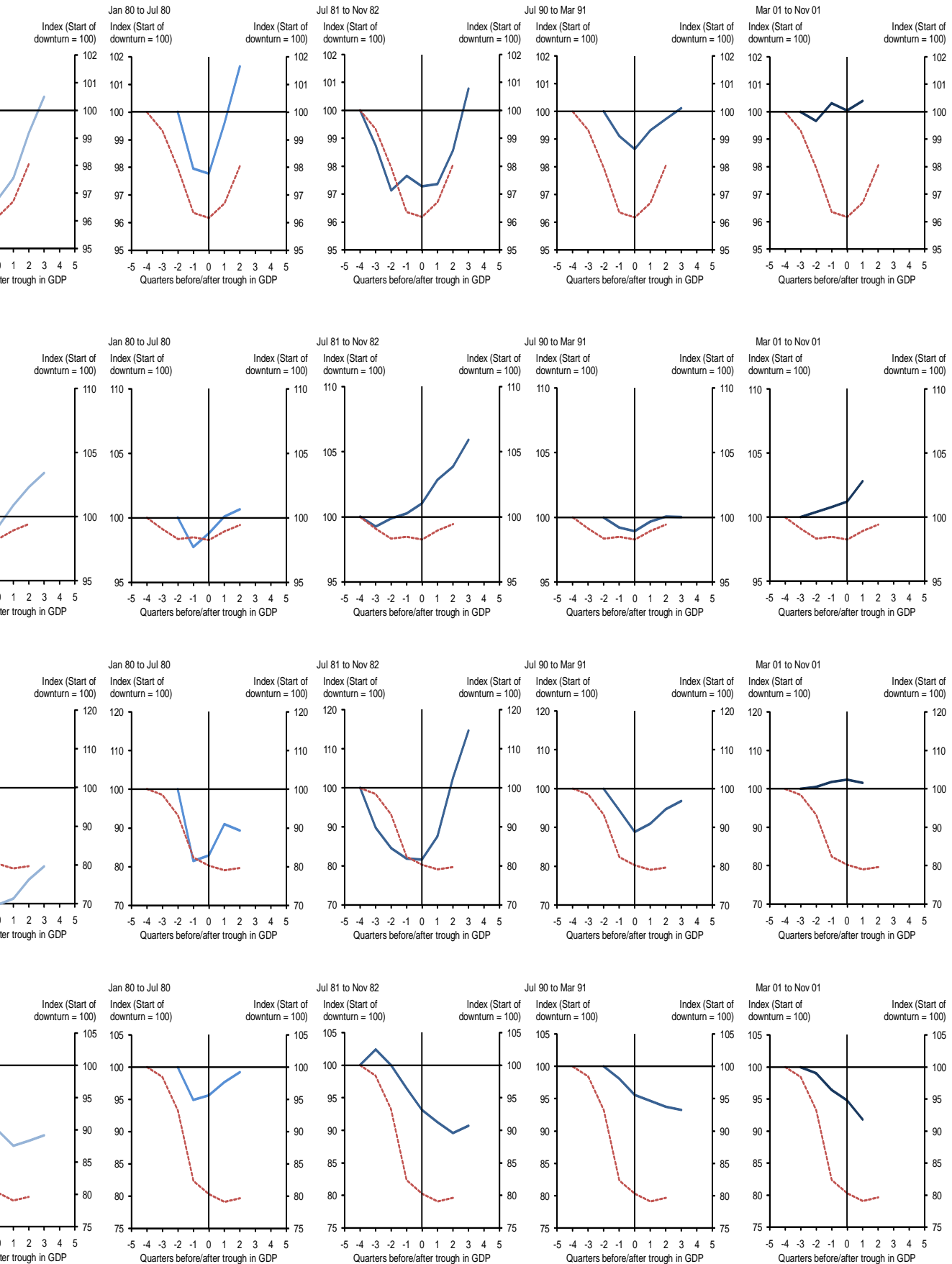
Residential investment



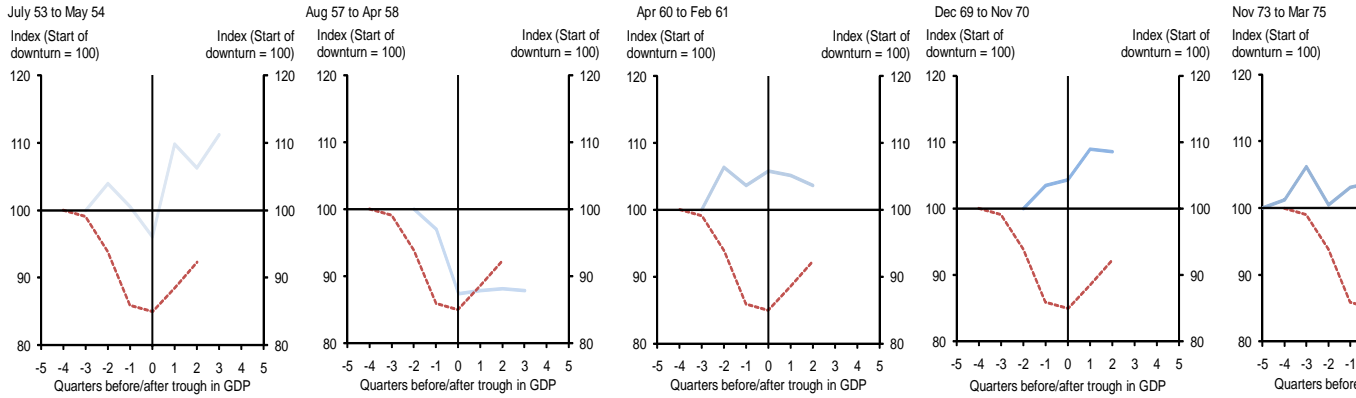
Business (non-residential) investment



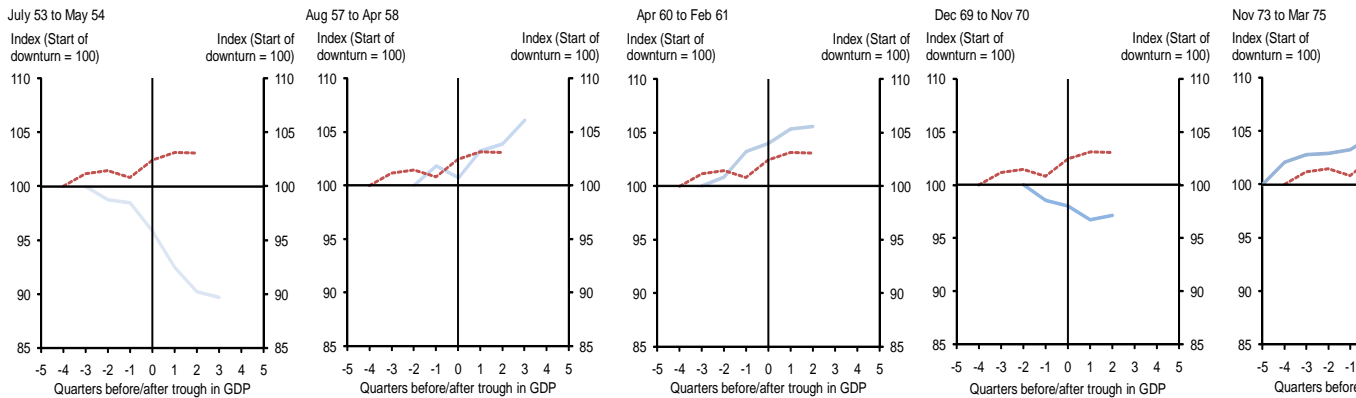
The following graphs show how major US activity measures evolved during previous recessions and recoveries. To allow for comparability, all series have been indexed to 100 at the start of each downturn and the troughs in GDP have been aligned.



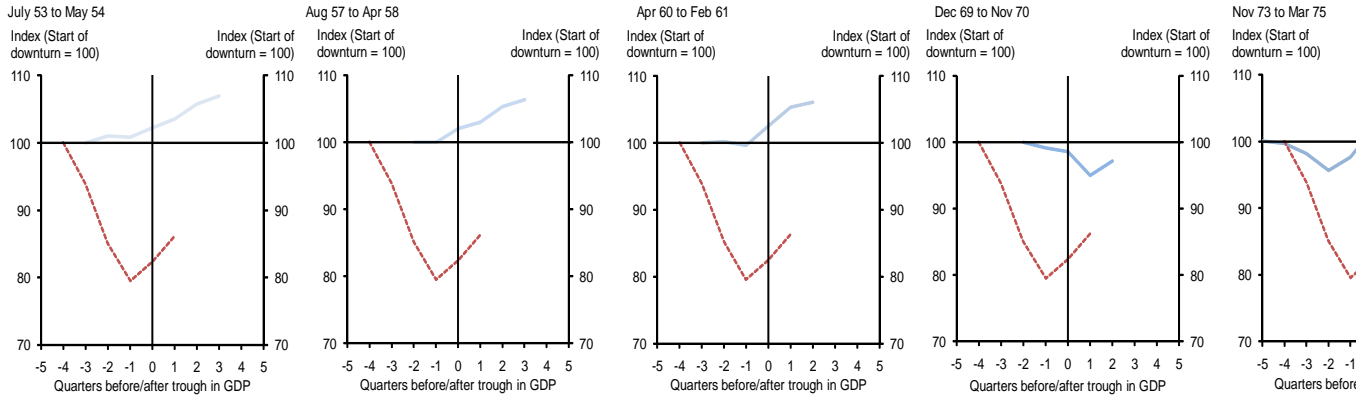
Exports



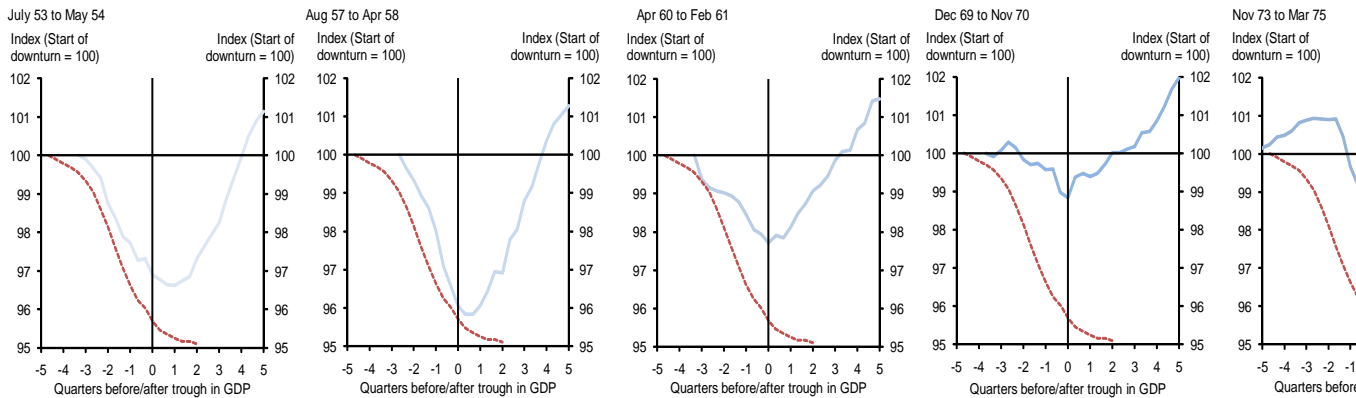
Government consumption and investment spending



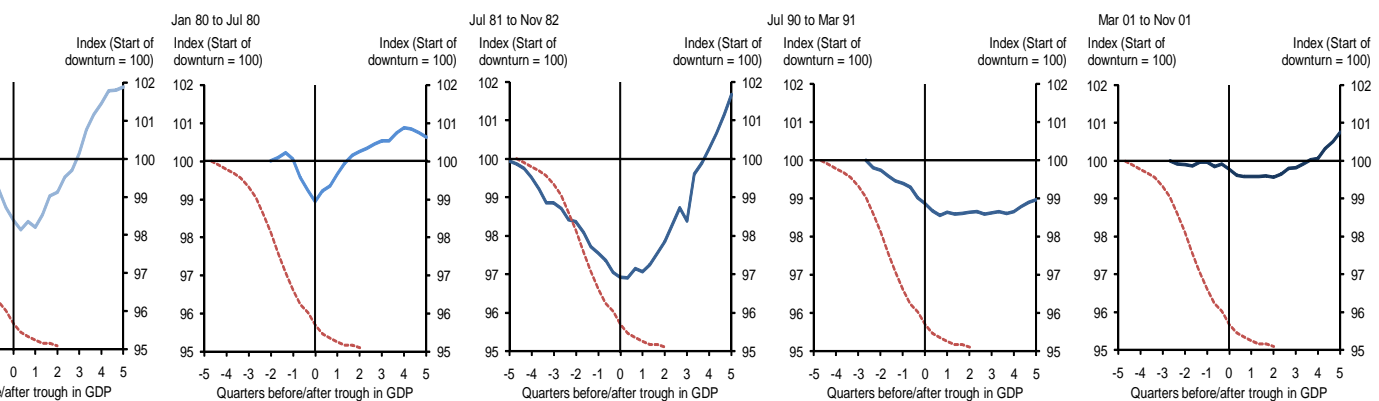
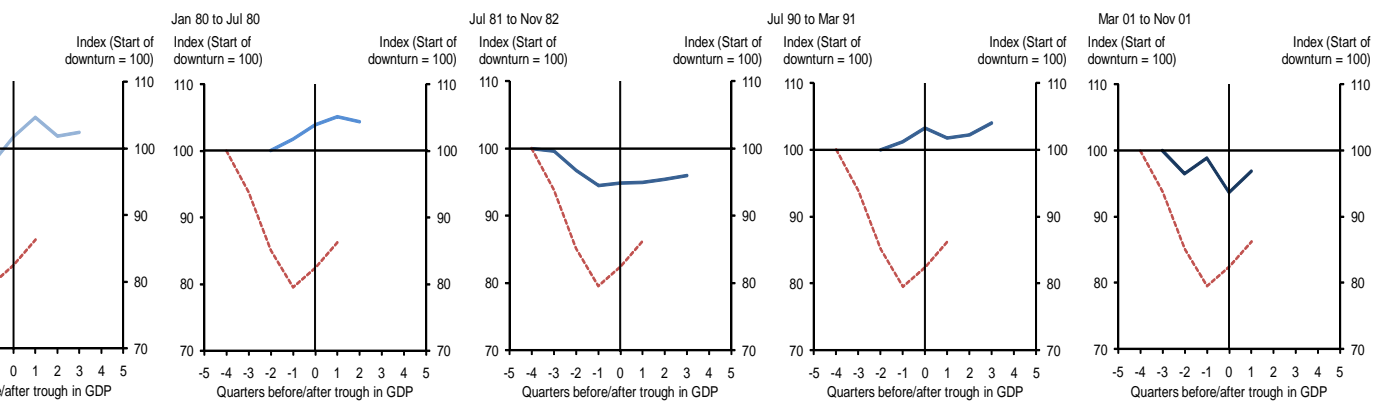
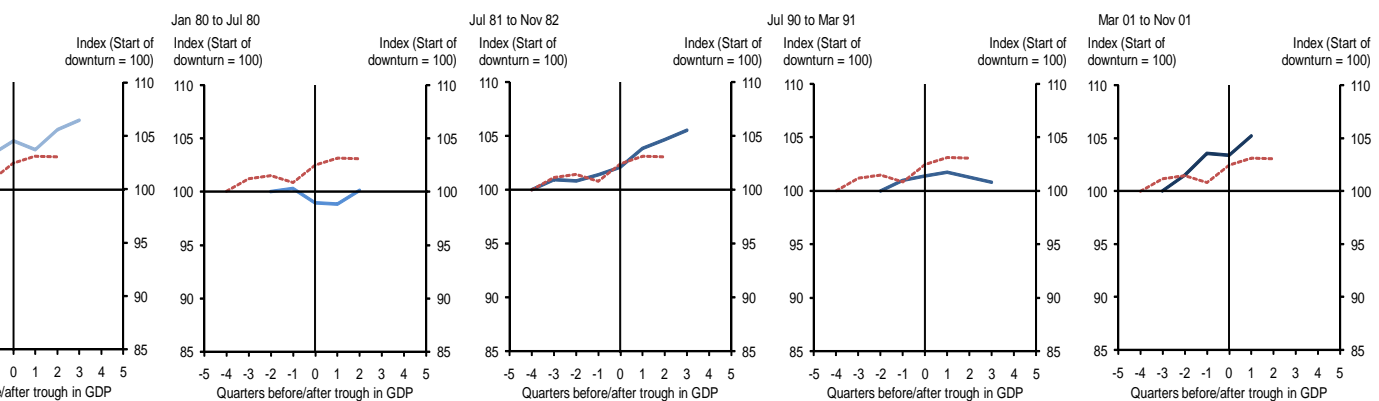
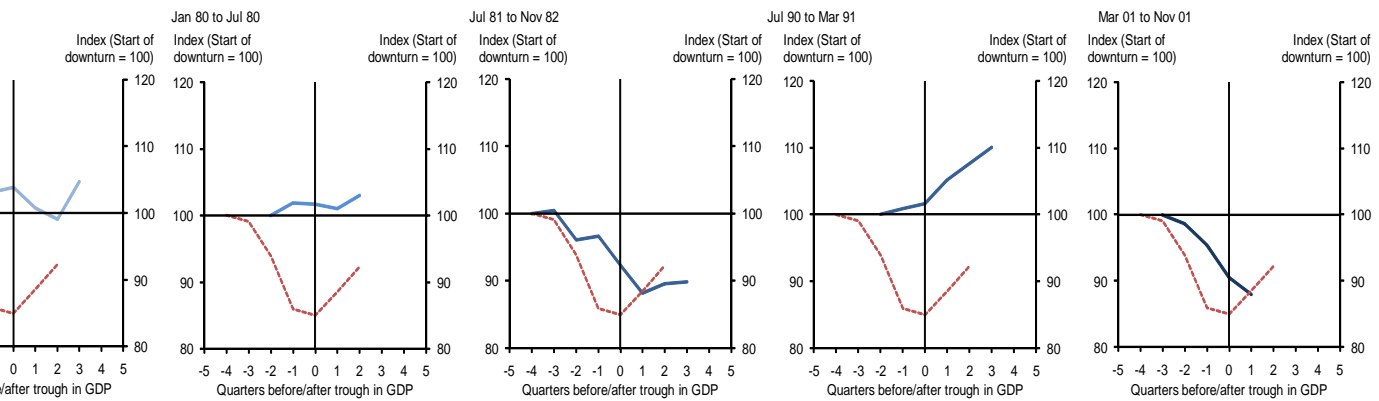
Real wealth



Non-farm payrolls



Sources: Haver, RBNZ estimates.



3.1 Depth and duration

The recent US recession was particularly severe compared to previous periods. The 3.6 percent peak-to-trough fall in GDP was well in excess of the average decline seen during earlier recessions and the largest decline since WWII. The associated 5.2 percent decline in non-farm payrolls since December 2007 was also the largest since WWII, resulting in the unemployment rate rising to its highest level since 1983.

As well as being particularly deep, the recession was more protracted than usual, lasting for six quarters (compared to an average of three quarters).³ Such an extended period of weakness potentially exacerbated the severity of the downturn due to the very high degree of uncertainty and reduced opportunities to delay spending.

3.2 Behaviour of GDP components

During the recession there were falls in all expenditure GDP components except for government consumption and government investment. Compared to previous periods, the extent of the declines in each component was large, particularly in the case of business investment and residential investment.

- Business investment declined by 20 percent and was the major contributor to the contraction in GDP. Even accounting for the length of the recession, the degree of weakness in business investment has been unusual compared with previous periods. Hooper and Slok (2009) show that, relative to depreciation, business investment has not been this weak at any point over the past 50 years. Such weakness was likely contributed to by the impairment of credit conditions, as well as continued downside surprises in economic activity, which resulted in high levels of uncertainty and low levels of confidence.
- As with many US recessions, the recent downturn was associated with weakness in residential investment. Residential investment fell by a massive 56 percent since its peak in 2005. And, although most of this weakness

preceded the start of the recession, it undoubtedly contributed to the more general deterioration in economic and financial conditions. Compared to previous recessions, the weakness in residential investment was unusual, as it was related to the bursting of a significant housing bubble.

- Both consumption spending and exports experienced falls that were very large by historical standards. The pronounced weakness in exports was a result of the highly synchronised nature of the downturn.
- The drag from inventories was only slightly larger than average.

3.3 Additional characteristics

As well as the large contraction in GDP, the recent US recession had a number of defining characteristics. Most notable was the significant deterioration in the health of the household sector (table 3.2). In addition to the aforementioned falls in employment, the decline in real wealth (down by around 17 percent) was more than three times that seen during the most severe of the other post-WWII recessions. This was a result of both declines in the value of real assets such as housing and declines in financial wealth.

The response of fiscal and monetary authorities to the crisis has also been historically unusual. The American Recovery and Reinvestment Act (2009) introduced nearly US\$800 billion in fiscal stimulus for the economy in the form of tax cuts, direct government spending and government aid to states and individuals. This is equivalent to around 3 percent of US GDP in each of 2009 and 2010 (Romer 2009). Additionally, nominal official interest rates have been cut to record low levels (figure 3.2) and a number of measures have been put in place to ensure the functioning of financial markets.

³ **Output contracted during five of the six quarters that NBER lists the US economy as being in recession.**

Table 3.2

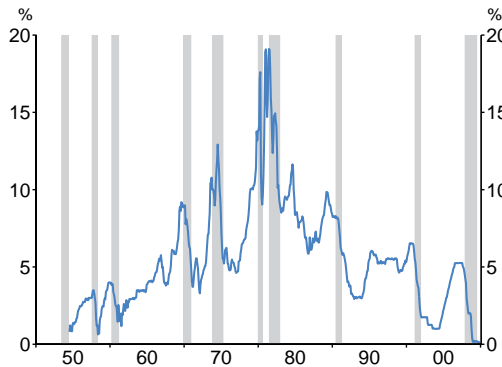
Household characteristics

	1954	1958	1960	1970	1974	1980	1981	1991	2001	2008	Average of downturns prior to 2008
Decline in payrolls during recession	-3.1%	-4.0%	-2.3%	-1.2%	-1.8%	-1.1%	-3.1%	-1.1%	-1.2%	-5.2%	-2.0%
Change in real wealth during recession	2.2%	2.0%	2.5%	-1.4%	1.7%	3.9%	-3.3%	3.3%	-3.5%	-17.6%	0.3%
Debt levels (% of household incomes, average during recession)	-	-	60%	64%	63%	70%	66%	85%	101%	132%	72.7%
Savings rates (% of household incomes, average during recession)	-	-	7.3%	9.4%	10.6%	9.4%	11.2%	6.6%	2.7%	3.2%	8.2%

Notes: For the most recent period, the decline in payrolls until the end for 2009 has been used.
Sources: Haver, Federal Reserve Bank of St Louis, RBNZ estimates.

Figure 3.2

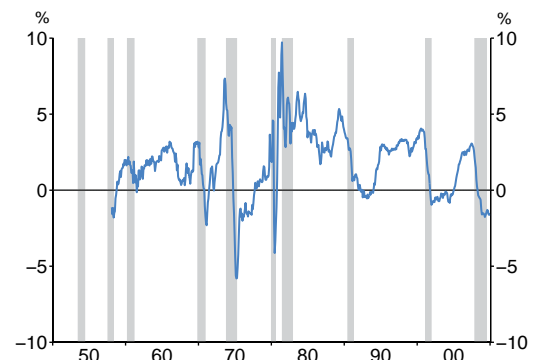
Effective Federal Funds rate



Notes: Recessions shaded.
Source: Federal Reserve Bank of St Louis.

Figure 3.3

Real effective Federal Funds rate



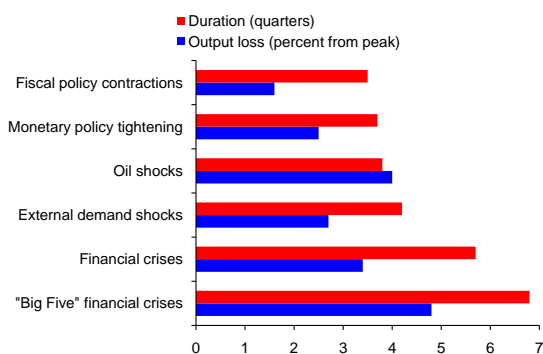
Notes: Deflated using CPI excluding food and fuel prices.
Recessions shaded.
Sources: Federal Reserve Bank of St Louis, RBNZ estimates.

3.4 Recession associated with banking crises

As noted earlier, previous post-WWII recessions in the US have not have been associated with significant financial stress as seen during the most recent recession. Dell’Ariccia et al (2005) show that banking crises tend to have a significant negative impact on output. And in other economies, recessions associated with such financial stress have tended to be deeper and more protracted than during other periods. The IMF (2009) estimates that contractions associated with financial crises tend to last for around six quarters, with an output loss of around 3.5 percent (figure 3.4). Compared to other recessions, such periods have also tended to be associated with employment continuing to decline for substantially longer than GDP (Reinhart and Rogoff, 2008).

Recessions associated with significant financial stress and synchronised global downturns have tended to be particularly severe. The IMF (2009) highlights six occasions when economies in Europe experienced such conditions. These downturns were long-lasting and resulted in large falls in GDP (more than 4.5 percent).

Figure 3.4
Summary statistics on the depth and duration of recessions



Source: IMF (2009), p114.

4 Characterising previous periods of recovery

The findings from this section are summarised in table 3.1 and figure 3.1.

The US economy has now entered a period of recovery, with growth returning to positive rates in 2009 Q3. Following previous downturns, the time taken for US GDP to recover its pre-recession levels has been relatively short, with rapid growth in personal consumption spending the main contributor to the recovery in activity. However, previous post-WWII recessions in the US were not associated with the significant financial stress seen during the most recent recession. In other economies, the recovery from such periods of financial stress has tended to be more gradual than following other recessions.

4.1 Speed of recovery

In previous periods, deeper recessions have tended to be associated with stronger recoveries. Consequently, the time taken to recover the decline in output following previous recessions has been relatively short (between two to three quarters), irrespective of the depth or duration of the contraction in GDP.

4.2 Contributions to growth

In all of the previous periods, the main contributor to the recovery in US GDP has been strong growth in private consumption spending, which has tended to lead the more general recovery in activity. Inventories have also tended to make a large contribution to the recovery in output.

The contribution from other expenditure components to recoveries has been varied:

- Business investment tends to lag the more general recovery in output, typically contracting for one quarter more than GDP and taking longer to recover its pre-recession level.
- The performance of residential investment spending during recoveries has been mixed – lagging the more general recovery in activity in some periods, leading it in

others. The recovery in residential investment does not appear to be closely tied to the depth or duration of the associated recession.

- The performance of exports during recoveries has also been mixed. The IMF (2009) suggests that exports are likely to make a stronger contribution to the recovery in activity when the slowdown in activity is specific to an economy, rather than part of a more general slowdown in global activity.

4.3 How has growth evolved during recovery periods?

Growth in the second two quarters following a recession has tended to be stronger than in the first two (figure 4.1). Contributing to this pattern has been accelerating consumption spending growth, combined with the more gradual pick-up in business and residential investment. Such a pattern was observed following seven of the nine post-WWI recessions. The periods where this pattern did not occur were 1980 (when the economy recovered only briefly before slipping back into recession) and 2001, when GDP actually increased over the recession period.⁴

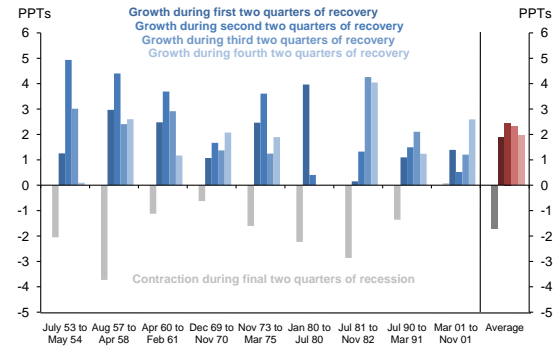
4.4 The behaviour of other economic variables during recoveries

The recovery in labour market conditions tends to lag the recovery in GDP. Employment often continues to decline for a short period after GDP ceases contracting and tends to recover its pre-recession level only after GDP has recovered. Additionally, structural changes in the US labour market have meant that jobs growth following the previous two US recessions was very modest, resulting in ‘jobless’ GDP recoveries (this can be seen from the 1991 and 2001 panels in the final row of figure 3.1). The reasons for this change include a shift towards ‘just in time employment’ (such as the use of temporary workers and increased use of overtime hours) as well as a shift toward permanent, rather than temporary layoffs (Kontek II and Terry 2009). Similar trends

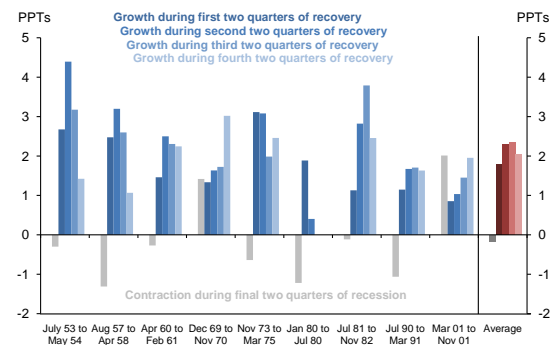
⁴ While GDP increased during the 2001 recession, growth was negative in two of the five quarters during this period. The period was also associated with rising unemployment.

Figure 4.1
Growth in US GDP components following recessions

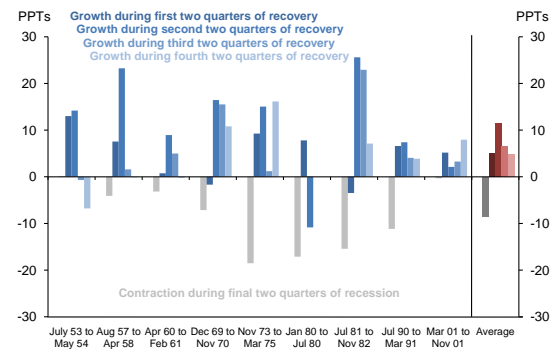
GDP



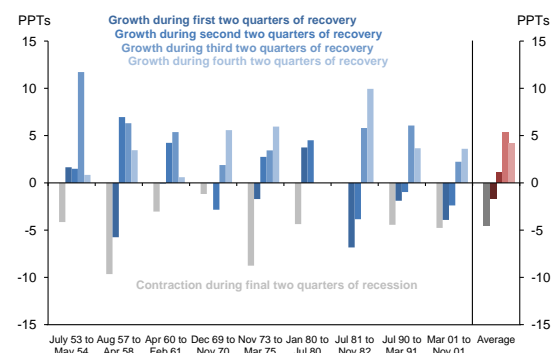
Personal consumption spending



Residential investment



Business investment



Sources: Haver, RBNZ estimates.

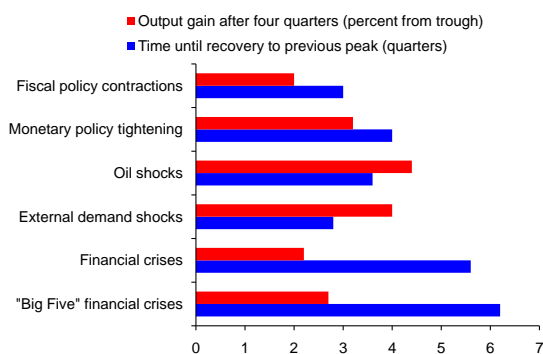
in employment and job losses have been seen during the early stages of the current period.

In terms of the impact of policy during recoveries, the IMF (2009) finds that monetary policy can assist the speed of recovery but tends to be less effective following periods of financial stress. This is because following such periods, both credit demand and supply can be impaired. The IMF also finds that expansionary fiscal policy tends to shorten the duration of recessions (even during periods of financial stress) but is more effective when public debt levels are low.

4.5 Recoveries and financial crises

In other economies, recoveries associated with significant financial stress have tended to be relatively gradual (figure 4.2). Such periods have been associated with weak growth in consumption spending and continued contractions in residential and business investment following the trough in GDP. Adding to the weakness in activity during these periods has been tightness in credit conditions and reduced demand for credit, limiting the effectiveness of monetary policy.⁵

Figure 4.2
Summary statistics on the strength and speed of recoveries



Source: IMF (2009), p. 114.

The IMF (2009) notes that recoveries from periods of financial stress have often been related to strength in external demand that has offset weakness in domestic demand. However, at times when financial crises have been associated with synchronised slowdowns in activity, recoveries have tended to be weak.

⁵ IMF (2009), based on recessions in New Zealand (1986 Q4 to 1987 Q4), Australia, Japan and several European economies.

5 Conclusion: What do previous periods indicate for the current recovery?

The US economy has now entered a period of recovery. While growth thus far has been relatively firm, this is in large part a result of fiscal stimulus and the turn in the inventory cycle, the impacts of which will fade over the coming quarters. Further ahead, the recovery for US activity remains subject to high levels of uncertainty.

Recoveries following previous US recessions have tended to be rapid and primarily a result of strength in the household sector. However, current economic conditions indicate that this recovery may differ from earlier post-WWII recoveries. The US household sector, which was the major contributor to previous recoveries, is entering the current recovery in a particularly weak state. Additionally, the US continues to face substantial financial headwinds, activity in many of the US's trading partners remains soft, and elevated private and public debt positions are likely to pose significant challenges over the coming years.

These conditions suggest that the current recovery in US activity may be quite gradual. This would be more akin to the recoveries seen in other economies following periods of significant financial stress, rather than the rapid recoveries that have typically followed other post-WWII recessions in the US. However, a gradual recovery in activity does not necessarily mean that growth will be below trend. Instead, it means that growth is unlikely to rebound to the very elevated rates seen following previous recoveries (as shown in figure 4.1).

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Appendix

Comparing the 2008-09 recession to the Great Depression

As with the most recent US recession, the Great Depression was associated with significant financial stress, including bank failures and sharp declines in asset markets. It was also associated with a synchronised global slowdown.

The Great Depression saw much deeper and more protracted deterioration in US activity than any other US recession on record, including the most recent one.

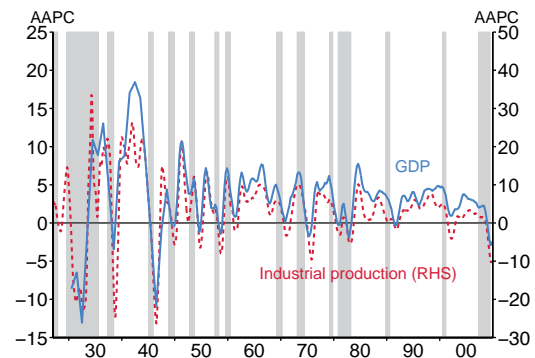
- According to the NBER, the US economy was in recession for 15 quarters, between August 1929 and March 1933 (the most recent recession lasted for six quarters) and tightening in policy saw the economy slipping back into recession in 1937.
- During this period there was an extremely sharp deterioration in US activity. GDP declined by 27 percent, unemployment rose to nearly 25 percent and there was a cumulative loss in industrial production of 52 percent. In the current period, GDP has declined by a total of 3.9

percent and unemployment has risen to 9.8 percent – (figure A1).

- Compared to the most recent period, global economic conditions were also weaker at the start of the Great Depression, with Germany already in a recession and price declines in Germany, the UK and US (IMF 2009).

As during the current period, there were also significant responses by monetary and fiscal authorities, though the fiscal response was relatively small compared to the response during the current period. Fiscal stimulus during the Great Depression was equivalent to around 1 percent of US GDP,

Figure A1
US GDP and industrial production



Notes: Annual GDP data are used prior to 1948. Recessions shaded.

Sources: Federal Reserve Bank of St Louis, Haver.