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# **Recessions and Recoveries in New Zealand's Post-War Business Cycles**

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# SOME MOTIVATING QUESTIONS

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- ✘ Has New Zealand's recent recession been its most severe?
- ✘ Does calling a recession based on two successive quarters of negative real GDP growth provide potentially misleading signals?
- ✘ Have New Zealand's real GDP and employment cycles been closely associated?
- ✘ What do average and most recent N.Z. & U.S. recoveries look like?
- ✘ How different has the recovery path from New Zealand's recent recession been?

# WHAT ARE BUSINESS CYCLES?

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- ✘ “**Business cycles** are a type of fluctuation found in the **aggregate activity** of nations; ... a cycle consists of **expansions** occurring at about the same time in many economic activities, followed by similarly general ... **contractions** ...” (Burns & Mitchell, 1946)

# WHAT ARE RECESSIONS?

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- ✘ A **recession** is a “ ... significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in production, employment, real income and other indicators.” U.S. National Bureau of Economic Research (NBER, 2010)
- ✘ **THE NBER Committee** that dates business cycles states that most but not all of their identified **U.S. recessions** consist of two or more quarters of declining real GDP, and that the committee relies neither on a simple rule of thumb such as two successive quarters of negative growth nor on real GDP alone.

# WHAT ARE RECOVERIES?

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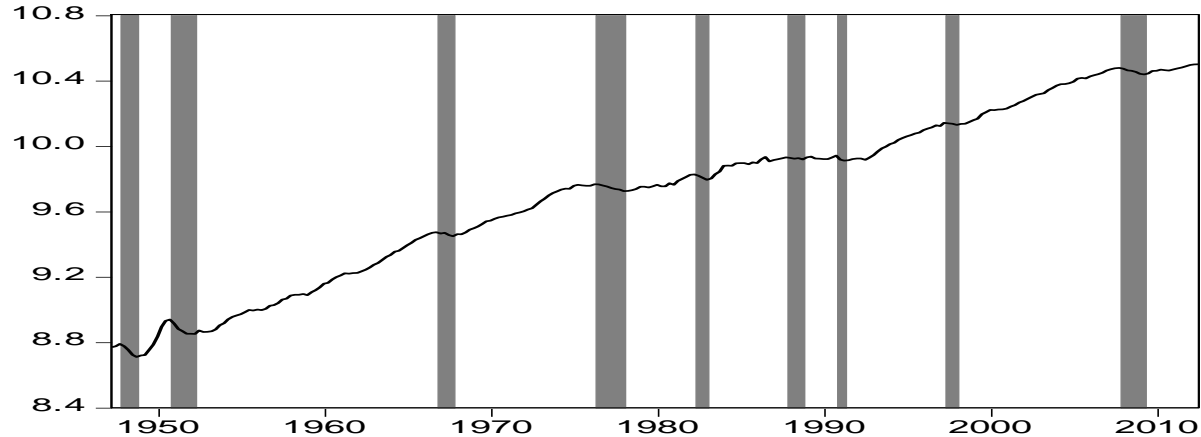
- ✘ The **recovery phase** of a business cycle is the initial part of a cycle's expansion phase, generally measured by the number of quarters taken to get back to the previous peak.

# WHAT ARE CLASSICAL AND GROWTH CYCLES?

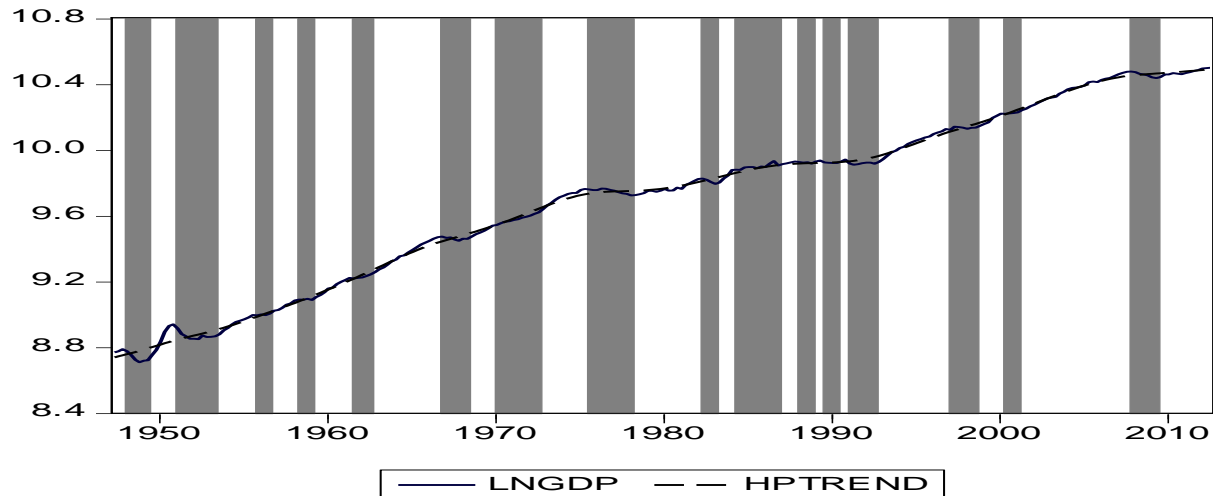
- ✘ A **Classical cycle** is concerned with **movements in the levels** (or log levels) of an aggregate economic series such as real GDP. We have used a Bry and Boschan (BB)(1971) computer algorithm to produce our business cycle turning points.
- ✘ A **growth cycle** reflects **fluctuations** in aggregate economic activity **relative to an appropriate trend** in the series. There are a considerable number of ways of 'de-trending' individual series, and hence of getting the corresponding 'deviations from trend' growth cycles. Our growth cycles reflect utilisation of the well-known and widely-used Hodrick and Prescott (1980) procedure (with  $\lambda$  set at 1600 for quarterly data). The BB algorithm was then used to date our growth cycle turning points.

# REAL GDP CLASSICAL & GROWTH CYCLES: 1947q2 - 2012q3

New Zealand Real GDP, log levels, 1947q2 to 2012q3  
Classical Business Cycle Contraction Phases/Recessions indicated by shading



New Zealand real GDP, log levels, 1947q2 to 2012q3  
Growth Cycle Contraction Phases/Recessions indicated by shading



# ARE GROWTH CYCLES USEFUL?

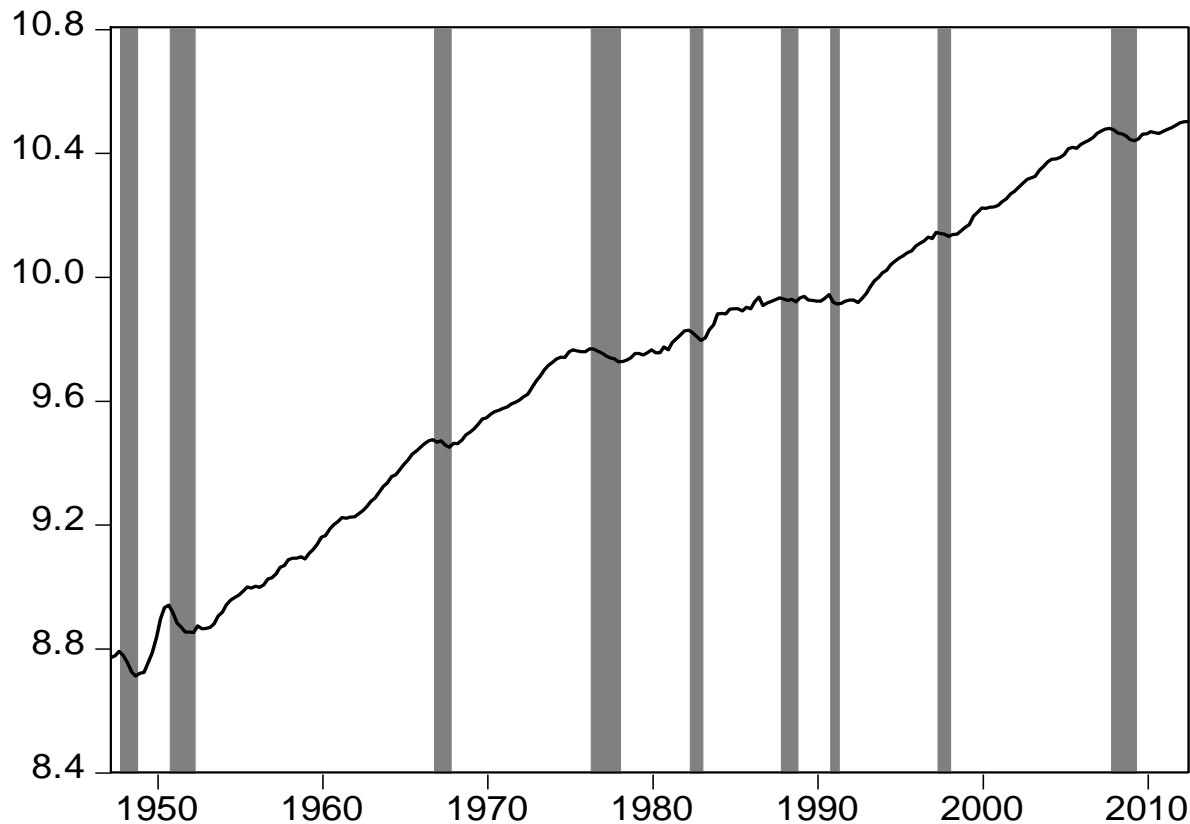
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- ✘ New Zealand's Real GDP movements have been volatile by international standards
- ✘ Our procedure documents 16 'growth recessions'
- ✘ For **macro policy** purposes, 'growth recession' measures create more confusion than clarity
  
- ✘ But sample average 'key business cycle facts' from growth cycles are still valuable for benchmarking academic, central bank and Treasury **macro models**



# CLASSICAL CYCLES: 1947q2 - 2012q3

New Zealand Real GDP, log levels, 1947q2 to 2012q3  
Classical Business Cycle Contraction Phases/Recessions indicated by shading



# MOST RECENT RECESSION

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- ✘ Commenced March 2008
  - ✘ Ended June 2009
  
  - ✘ Duration 6 quarters (vs. average 4.3)
  - ✘ Depth -3.90% (vs. average -3.95%)
  
  - ✘ Severity (-11.5%) less than the recessions of 1951/52, 1948, and 1977/78 (-37.2%, -15.6% and -12.8%) (vs. average -10.4% of GDP)
- Harding & Pagan (2002) cumulative loss measure

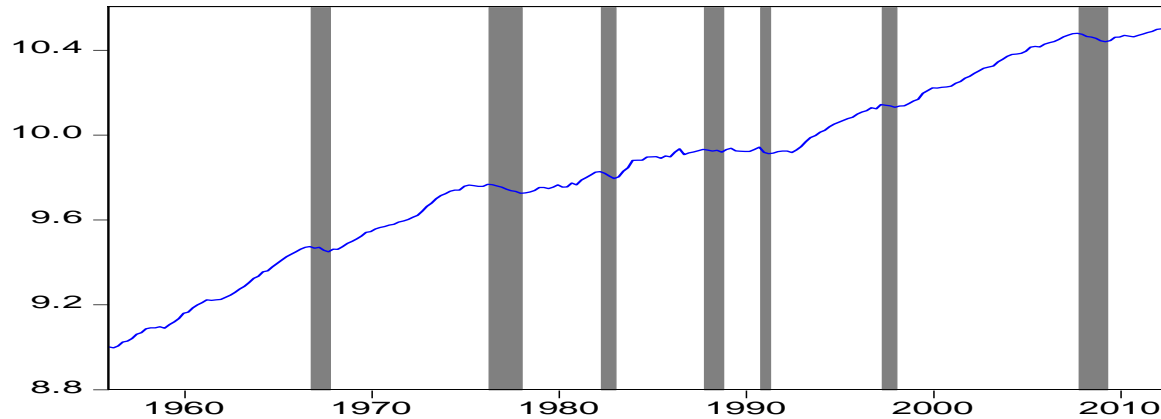
# IS A RECESSION 2 NEGATIVE QUARTERS?

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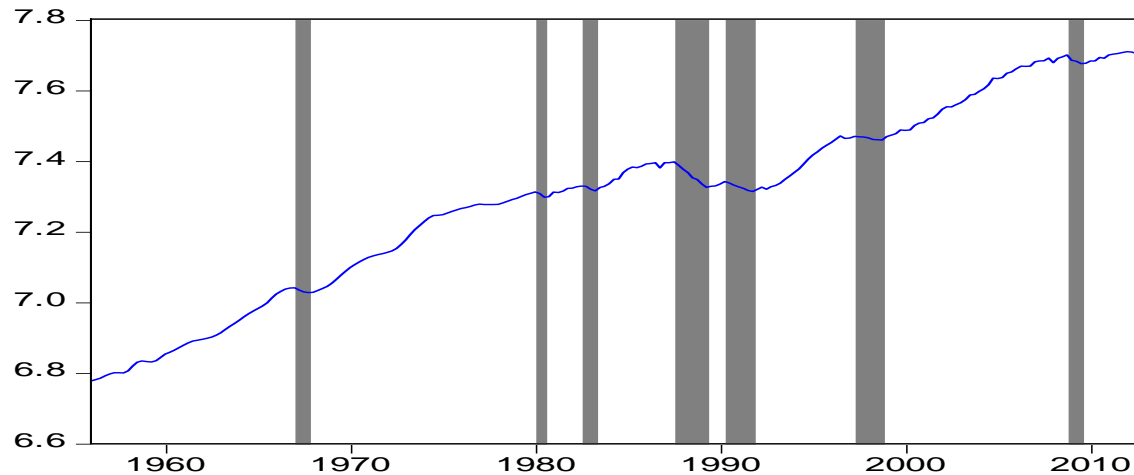
- ✘ Commonly-used practice
- ✘ Matches 6 of the 9 classical cycle recessions identified by the Bry-Boschan method
- ✘ Called 3 additional recessions:  
1975q3-q4; 1989q3-1990q2; **2010q3-q4**
- ✘ Also called differently by 2 quarters the timing of a beginning or end point for 3 of the 9 recessions

# CLASSICAL GDP & EMPLOYMENT CYCLES: 1956q1 - 2012q3

New Zealand Real GDP, log levels, 1956q1 to 2012q3  
Classical Business Cycle Contraction Phases/Recessions indicated by shading



New Zealand Total Employment, log levels, 1956q1 to 2012q3  
Classical Employment Contraction Phases/Recessions indicated by shading



# EMPLOYMENT CYCLES – ON AVERAGE

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- ✘ Number of peak-to-peak employment cycles and cycle phases: same as for the real GDP series, until end-2011. But, a recent extra employment expansion phase.
- ✘ Average durations are similar, but employment cycle and phase volatilities greater
- ✘ Employment and real GDP expansion and contraction phases “concordant” 89% of the time

# CONCORDANCE STATISTICS, 1956q1-2012q3

	Concordance	GMM t-test
Employment <b>lags</b> real GDP turning point		
1 quarter	.89	4.65***
2 quarters	.87	3.88***
3 quarters	.83	2.16**
Contemporaneous	.87	4.13***
Employment <b>leads</b> real GDP turning point		
1 quarter	.84	2.58***
2 quarters	.80	0.79

# EMPLOYMENT CYCLES – SPECIFIC CYCLES MATTER

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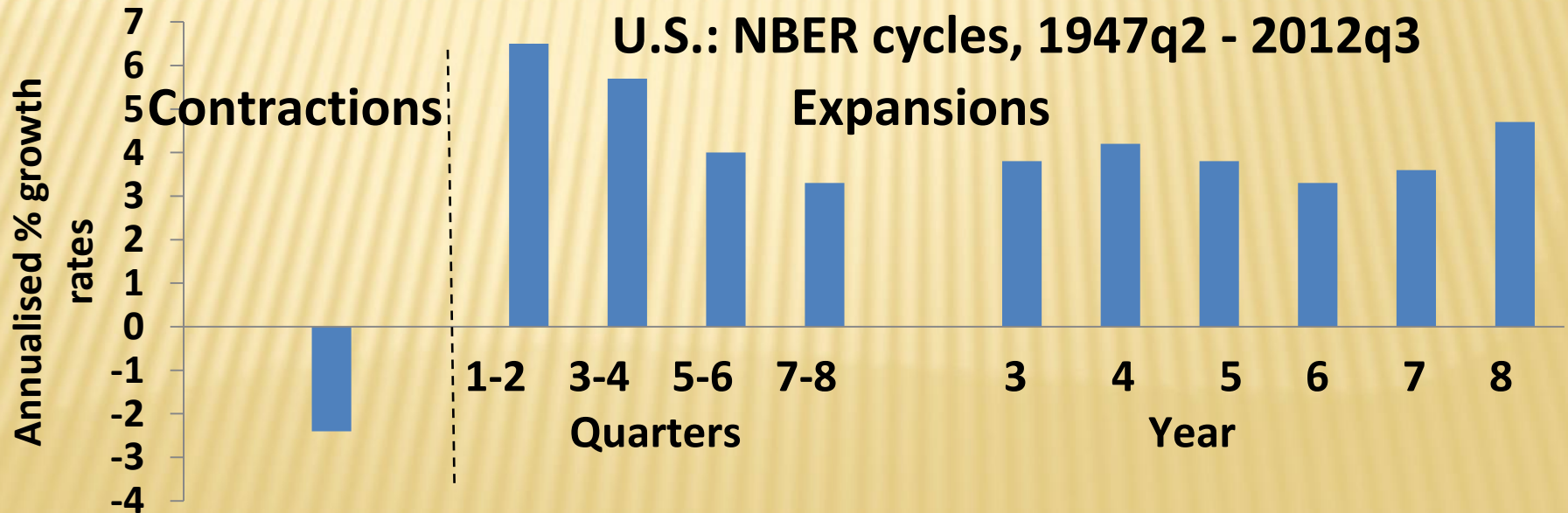
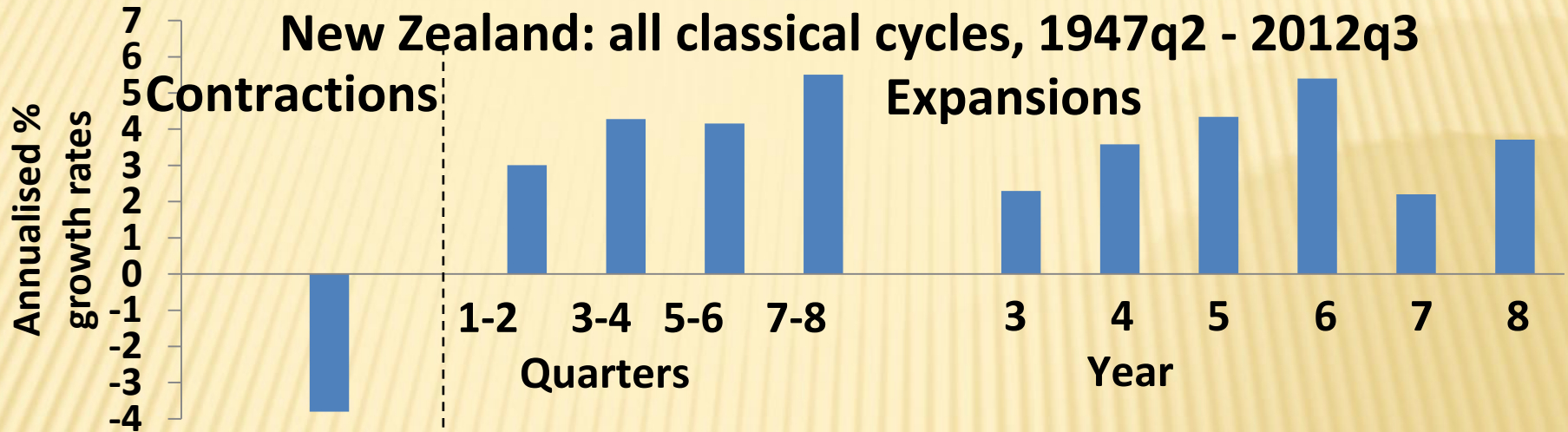
- ✘ Employment troughs lag output troughs for six of our seven cycle troughs
- ✘ But not every individual employment peak has lagged its real GDP peak by 1 quarter, e.g. 2012q1 is one of 3 employment peaks which have led a GDP peak

# RECOVERIES TO PREVIOUS PEAKS

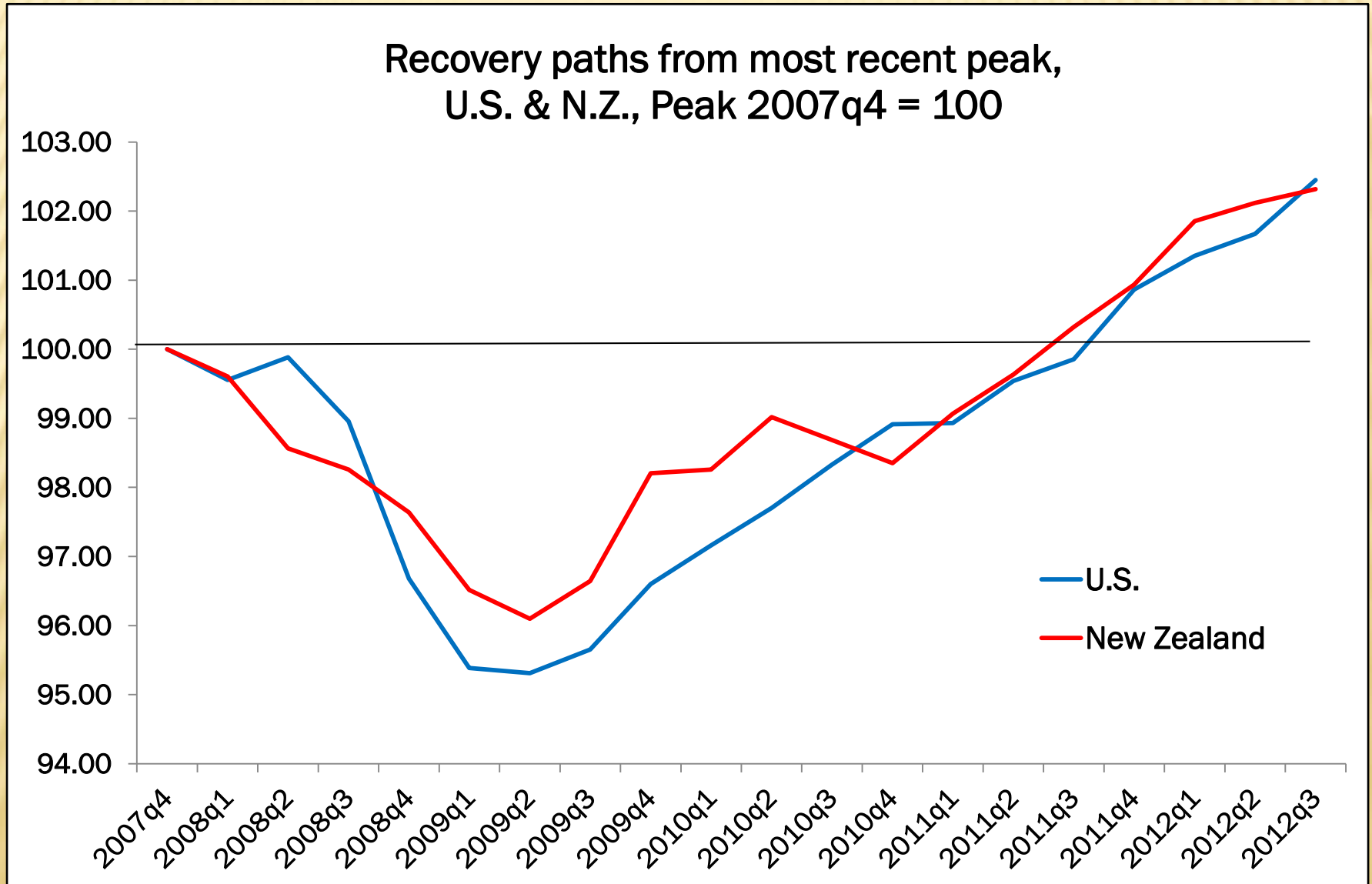
- ✘ Average duration 6.6 qtrs (range 2-13 qtrs)
- ✘ Current recovery to previous peak 2<sup>nd</sup> slowest (9 qtrs); but 8 qtrs from 1988q4, 7 qtrs from 1991q2
- ✘ Range of annualised rates of recovery:  
1.2% (from 1988q4) to 10.8% (from 1948q4)
- ✘ Some other annualised rates of recovery:  
7.0% (from 1983q1), 2.0% (from 1991q2),  
2.3% (from 1998q1) 2.0% (from 2009q2)



# AVERAGE RECOVERY PATHS: N.Z. & THE U.S.

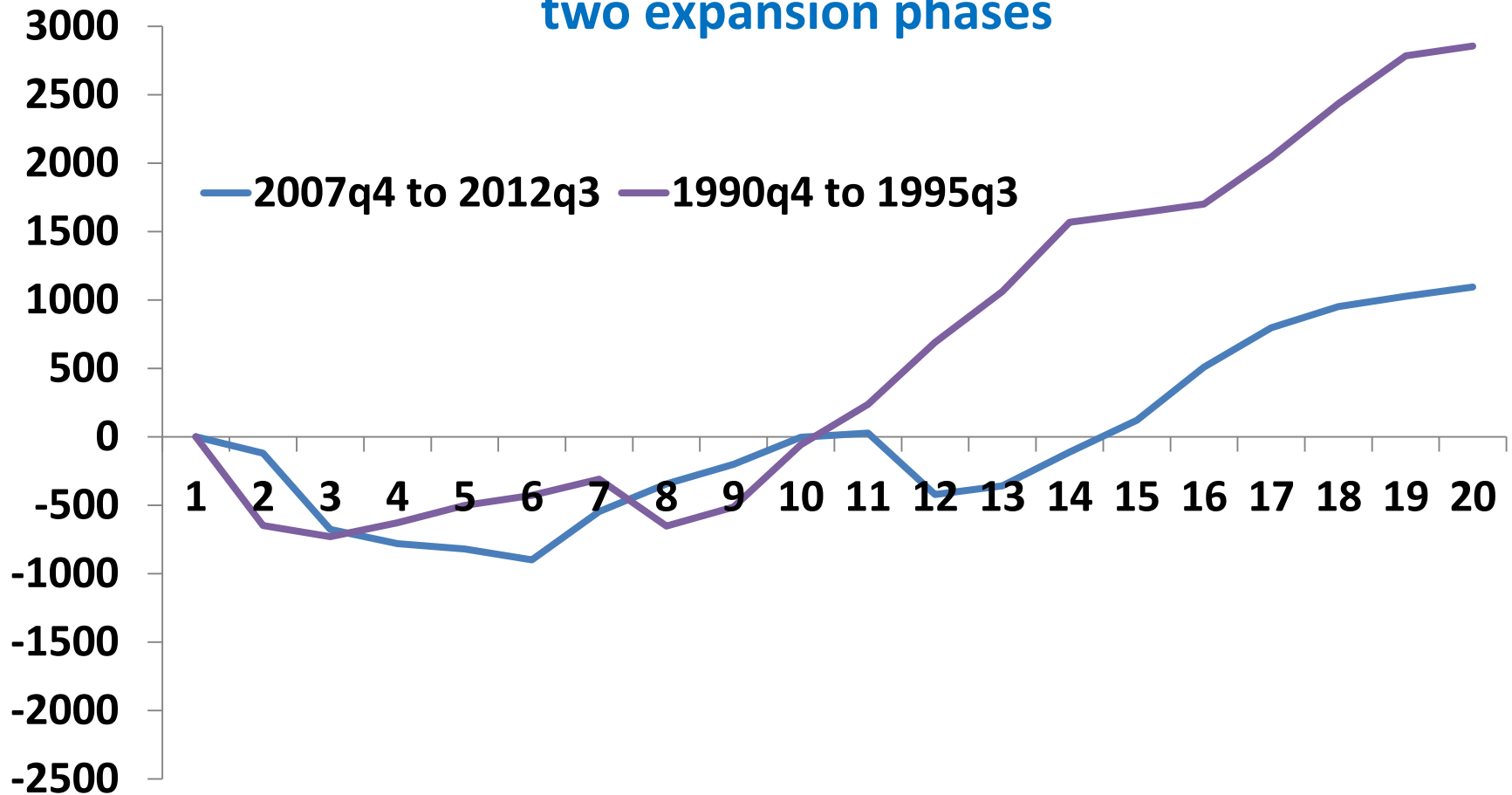


# MOST RECENT RECOVERY PATHS: N.Z. & THE U.S. AN ATYPICAL U.S. RECOVERY?



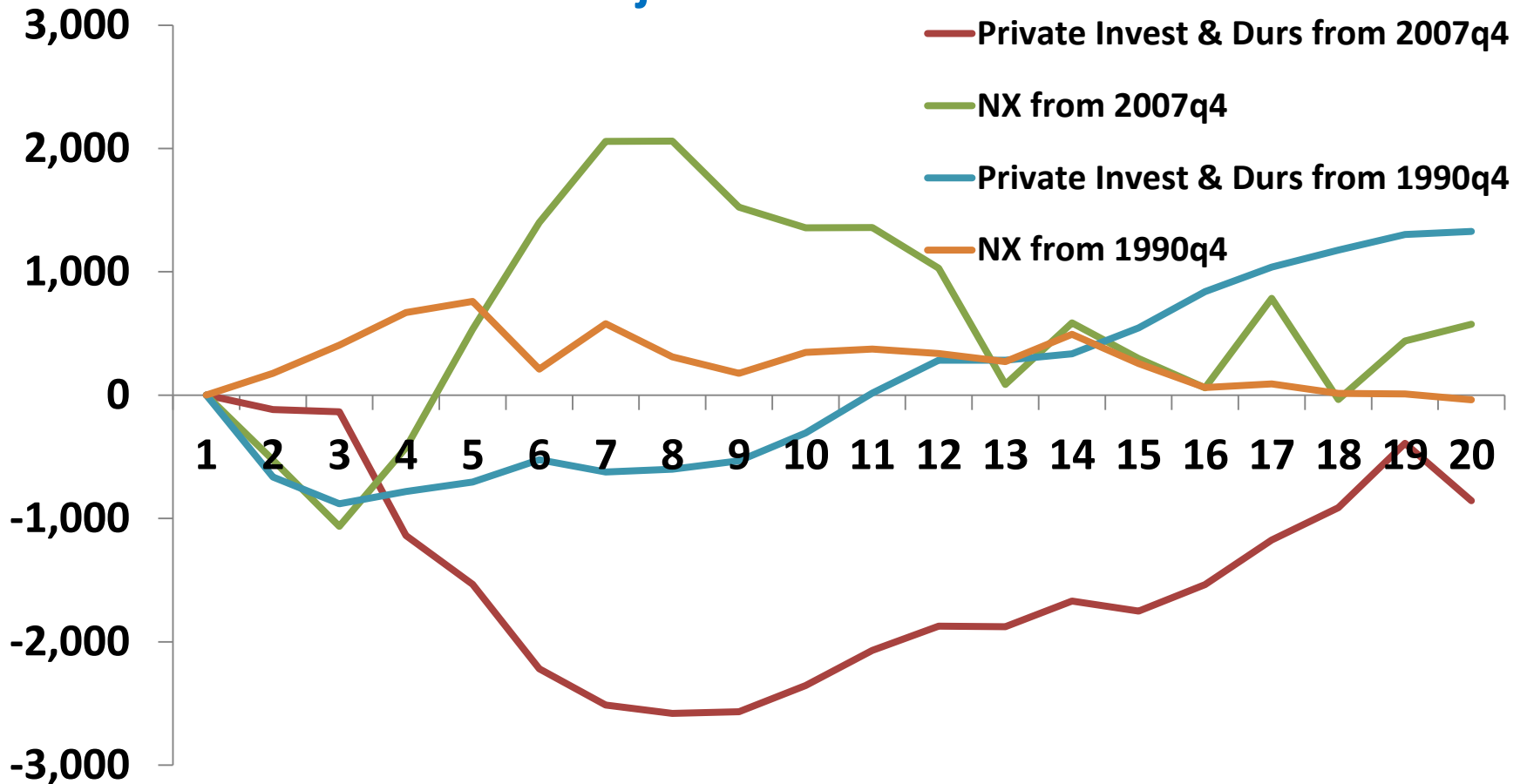
# COMPONENTS OF GDP: NEW ZEALAND

Cumulated movements, real GDP expenditure,  
two expansion phases



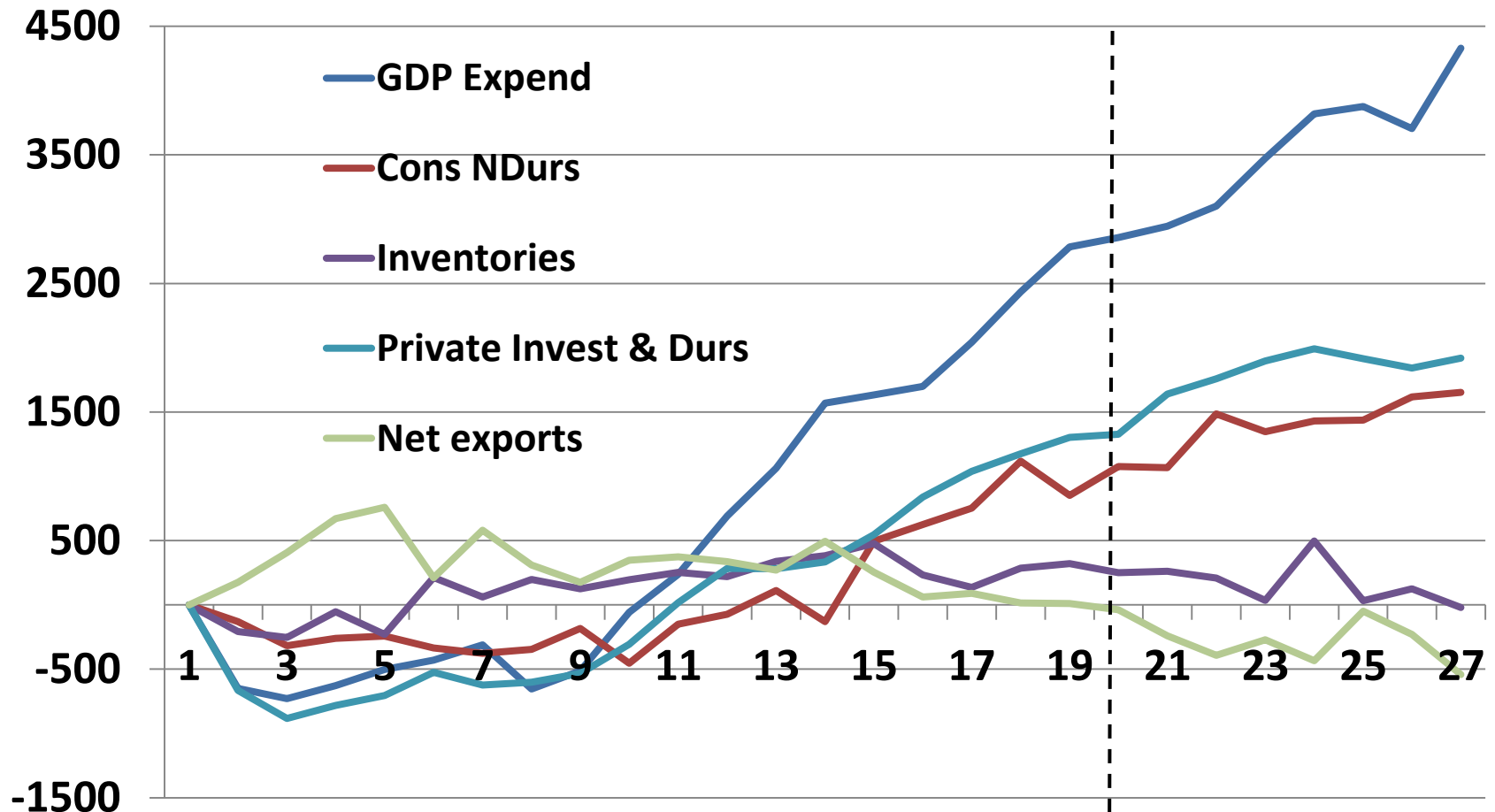
# COMPONENTS OF GDP

Cumulated expansion phase movements,  
two major contributors



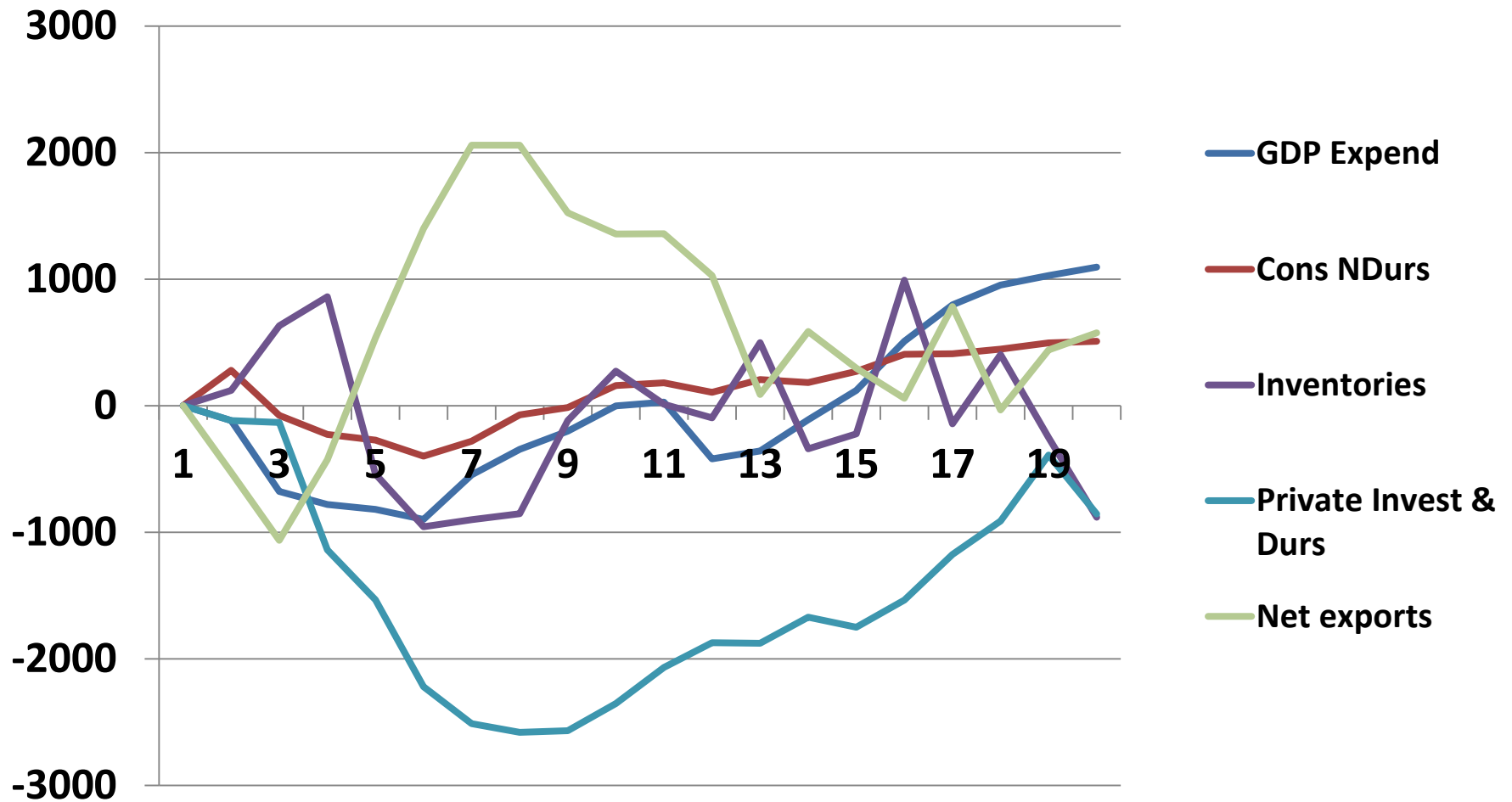
# WHICH COMPONENTS SUSTAIN RECOVERIES?

Cumulated movements: 1990q4 to 1997q2



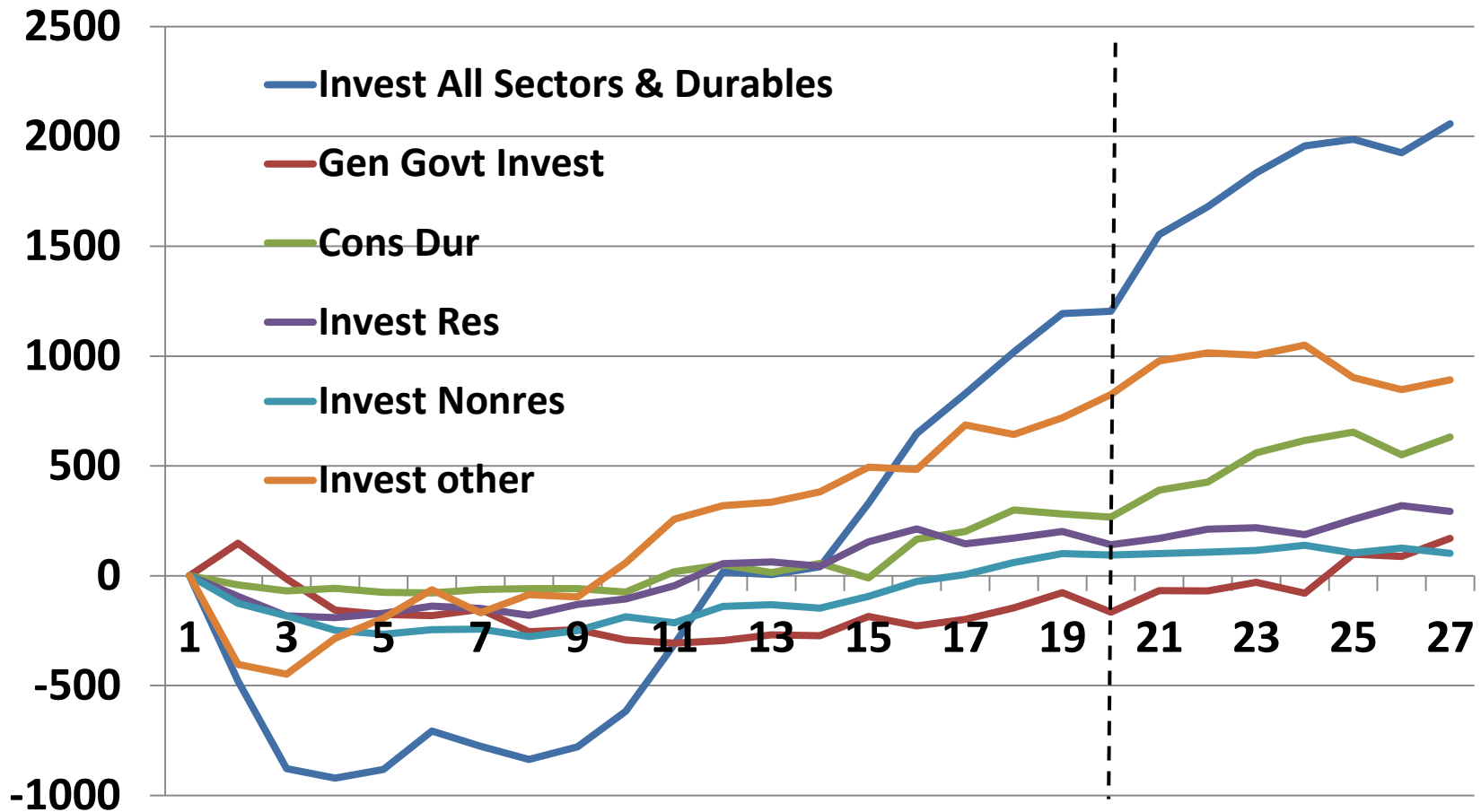
# WHICH COMPONENTS SUSTAIN RECOVERIES?

Cumulated movements: 2007q4 to 2012q3



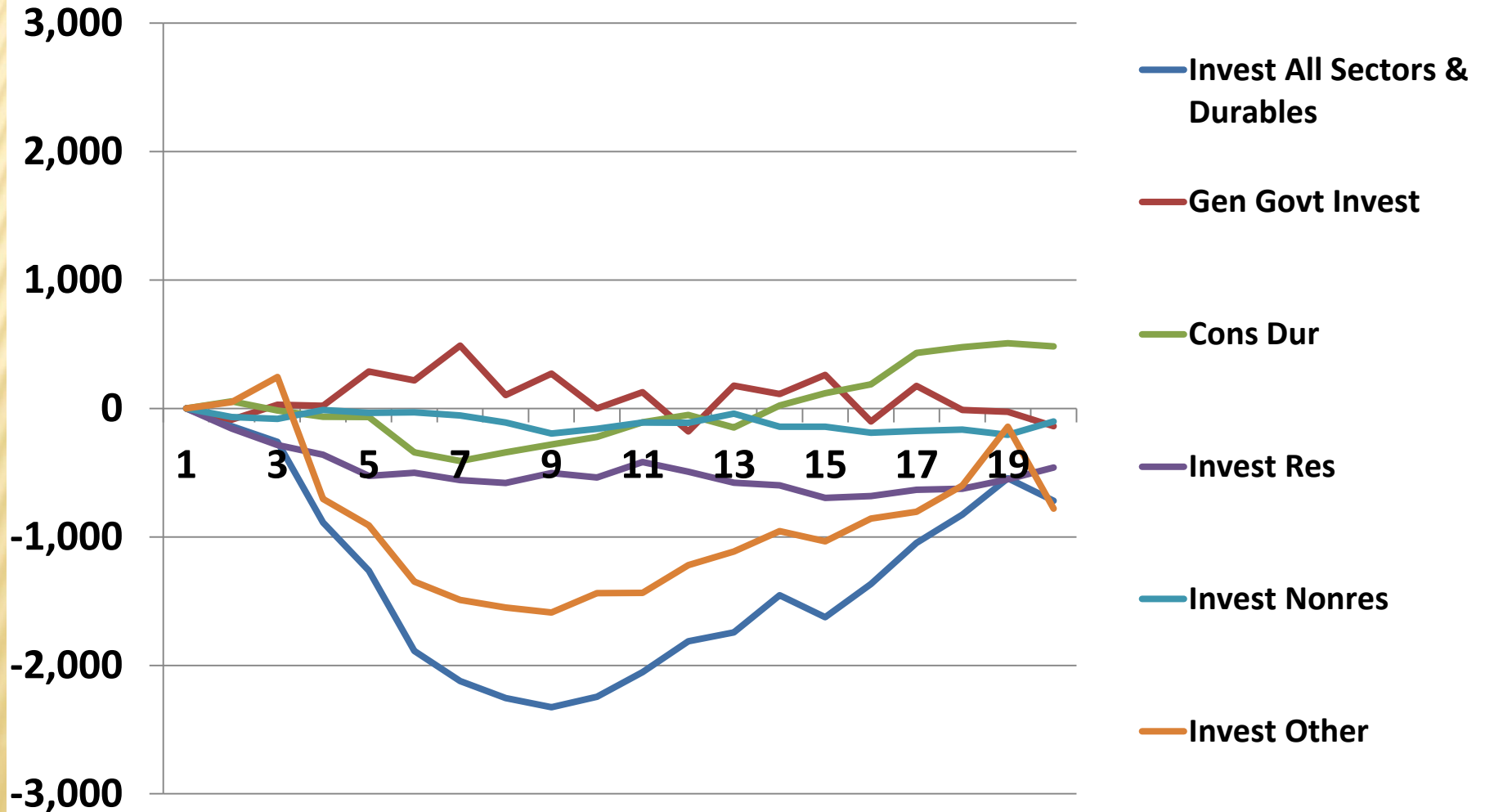
# SUSTAINERS AND NON-SUSTAINERS?

Cumulated movements: 1990q4 to 1997q2



# SUSTAINERS AND NON-SUSTAINERS?

Cumulated movements: 2007q4 to 2012q3





# SOME SUMMARY BROAD TAKEOUTS

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- ✘ Calling technical recessions can on occasions signal beginning & end points for recessions that are somewhat different from those computed by our BB method
- ✘ Classical cycles much more informative than growth cycles, for decision making & most policy analysis
- ✘ Real GDP & employment cycles have been remarkably similar on average, but interpreting particular contraction phase leads or lags needs additional care

# SOME SUMMARY BROAD TAKEOUTS

- ✘ Severity of previous recession may matter for subsequent recovery paths
- ✘ Valuable insights from assessing post-June 1991 and post-June 2009 recovery paths

# SOURCES

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- ✘ Hall, Viv B. and C. John McDermott (2013), “Recessions and Recoveries in New Zealand’s Post-World War II Business Cycles”, September.
- ✘ Hall, Viv B. and C. John McDermott (2011), “A quarterly post-Second World War real GDP series for New Zealand”, *New Zealand Economic Papers*, 45(3), December 2011, 273-298.
- ✘ Chapple, Simon (1994), “HLFS – Consistent labour market data”, NZIER Working Paper 94/16.
- ✘ NBER Business Cycle Dating Committee (2010), “The NBER’s Business Cycle Dating Committee” and “The NBER’s Business Cycle Dating Procedure: Frequently asked questions”, 20 September, downloaded 22 March 2011 from <http://www.nber.org/cycles/recessions.html>.