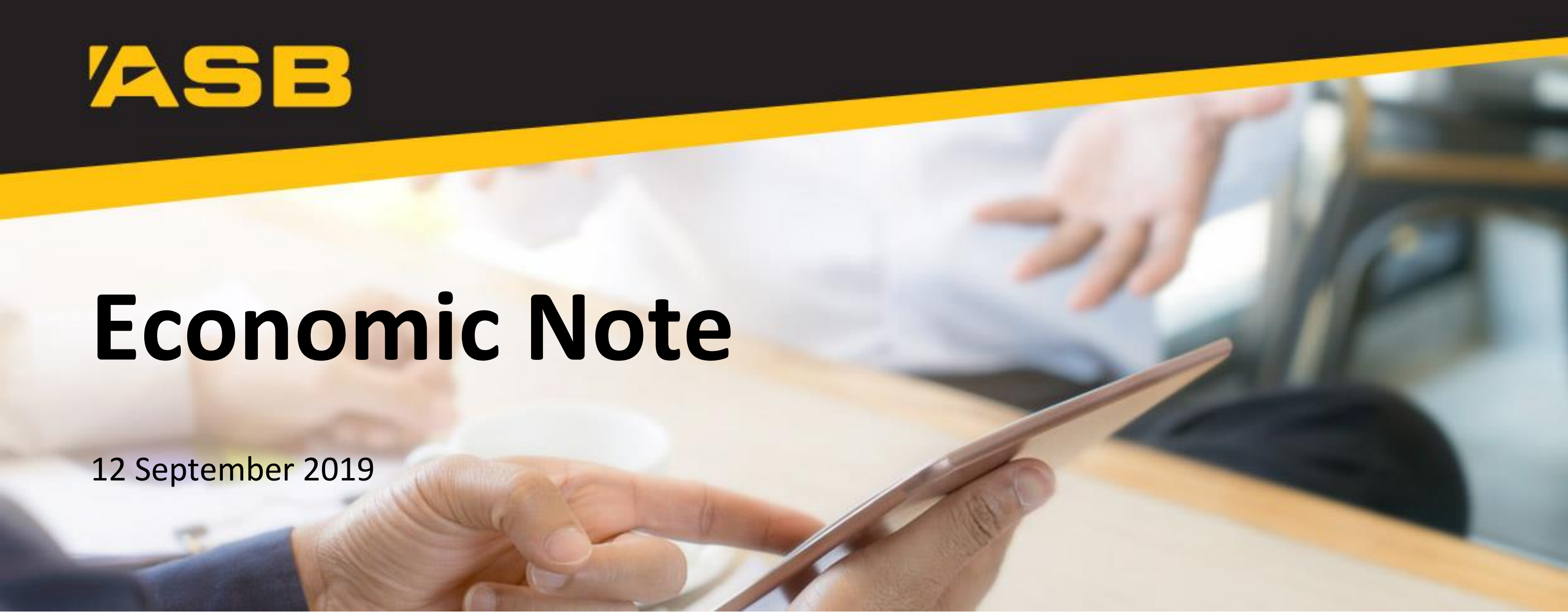


Economic Note

12 September 2019

Recession?

- ASB estimates a 30% probability that the NZ economy was in recession over Q2 2019.
- Top-down indicators point to an underlying quarterly growth rate in Q2 of around 0.3-0.4%, with risks skewed to the downside (although our formal forecast is for 0.5% GDP growth in Q2).
- Consumer confidence is the key variable to watch – if the labour market weakens and consumer confidence falls, the odds of a recession will likely spike higher.

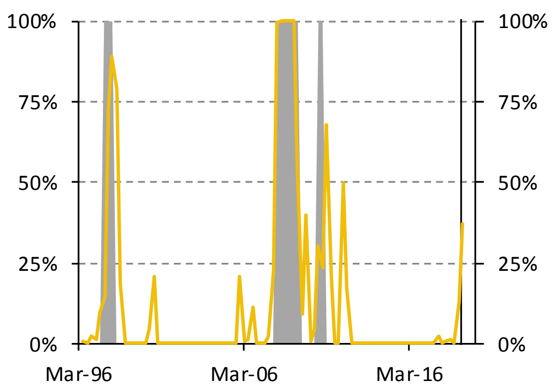
Introducing the ASB Recession Probability Model (RPM)

ASB RECESSION PROBABILITY ESTIMATES	
	Jun-19
Model A	37%
Model B	37%
Model C	15%
AVERAGE	30%

With NZ and global economic growth slowing over the past year, many have started to ask - how likely is it we are in, or heading into, a recession? In response, we set out to **build a model using key GDP growth indicators to estimate the probability that we are currently in, or about to head into, a recession** (more discussion on the definition of a recession and NZ's recession history is provided on Page 3). NZ GDP data are not published in a particularly timely fashion, with the first estimate released nearly a full quarter after the fact. In addition, these early estimates are subject to (potentially sizable) revisions, particularly so once the annual survey data are incorporated at the end of the year. In the case of the 2010 recession, we did not know at the time the NZ economy was in a 'technical' recession (i.e. 2 negative quarters) until a few years later!

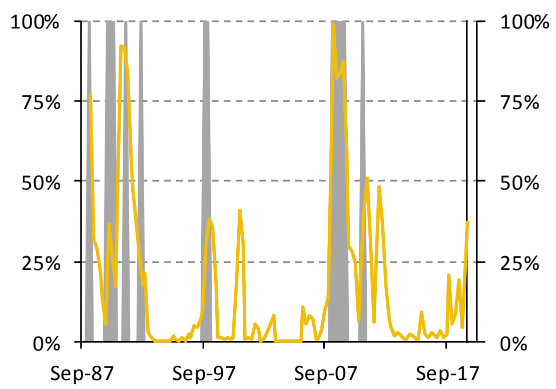
The aim of our model is to provide some additional clarity on the current state of the NZ economy by flagging the economy's vulnerable moments. **The average of our top 3 models suggests a 30% probability that the NZ economy entered recession during the June quarter.** This implies that there is some cause for concern about the growth outlook and, in our view, justifies the Reserve Bank of New Zealand's (RBNZ) bold action of slashing the Official Cash Rate (OCR) 50 basis points in August. In light of this work, we have also lowered our H2 2019 GDP growth forecasts,

ASB RECESSION PROBABILITY MODEL A



Source: ASB estimates

ASB RECESSION PROBABILITY MODEL B



Source: ASB estimates

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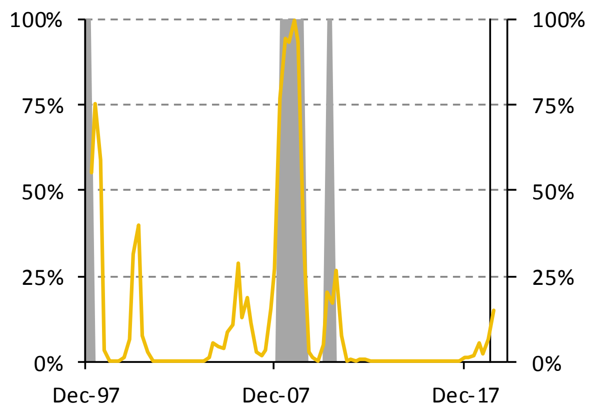
Please refer to the important disclosures at the end of this document.

and now expect calendar year annual growth to slow to just 2.1%.

However, all is not lost! At 30%, it's still more likely than not that NZ economic growth remains positive. Historically, a lift in the recession probability of this magnitude tends to be more consistent with below-potential GDP growth rather than recession. **Our key top-down indicators point to an underlying rate of quarterly GDP growth of 0.3-0.4% in Q2 2019, while our formal forecast is for quarterly growth of 0.5%.**

ASB RECESSION PROBABILITY MODEL C



Source: ASB estimates

Meanwhile, the front-line policy response to the recent growth slowdown has been relatively quick, with the Reserve Bank of New Zealand and other central banks moving swiftly to cut interest rates. Hopefully, this prompts a pick-up in economic growth, led by the interest-rate sensitive parts of the economy, and avoids a recession taking hold in NZ. However, if business confidence and other early growth indicators do not respond to the 75 basis points of OCR cuts already delivered, our recession model results highlight the downside risk to our economic growth and OCR outlook going forward.

Key indicators to watch

We estimated a range of multivariate probit models and narrowed our results down to our top 3 performing models, with the **average forecast suggesting a 30% probability the economy was in recession during Q2 2019**. **We also looked at how well individual GDP indicators performed in predicting a recession on their own.** A summary of each indicator's prediction of recession is included in the table (below), with the strongest performing variables highlighted in bold.

RECESSION RISK BY GDP INDICATOR		
GREEN LIGHT *All is hunky dory*	ORANGE LIGHT *Warning, check engine*	RED LIGHT *Call in the cavalry*
WMM Consumer Confidence **Architects Housing Activity** **BusinessNZ PSI** **GDP growth factor model** Net migration Consents Residential Consents Non Residential	**BusinessNZ PMI** **Yield Curve Slope** Architects Commercial Activity Commodity Prices	**QSBO Own Activity** **Short-term Visitor Arrivals**

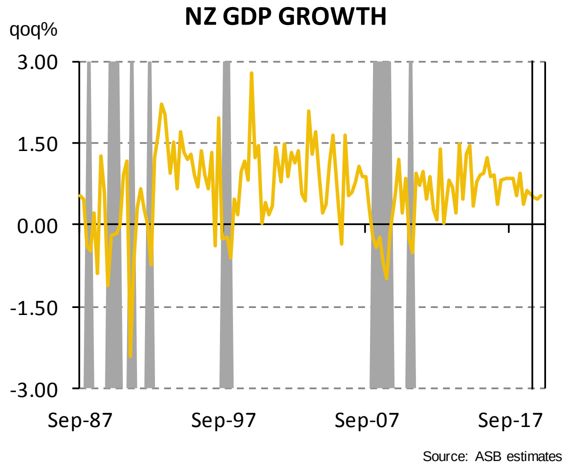
*Strongest recession indicators in bold

Two examples of the indicators which proved to be better predictors of a recession were the "Quarterly Survey of Business Opinion (QSBO) own activity" and the "Westpac McDermott-Miller consumer confidence (average of the three own activity related questions)". **Interestingly, when these indicators were used to individually estimate the probability of a recession, these two indicators are not in agreement. QSBO own activity suggests there is a 70% chance of recession, while consumer confidence puts the probability at just 21%.** This highlights the tipping point the NZ economy currently faces. Yes, **NZ economic growth has slowed, business confidence has dropped and businesses have pulled back somewhat on investment. However, the slowdown has not yet materially impacted households, with the labour market continuing to perform strongly.** If businesses cut back on hiring and wage growth, consumer confidence is likely to waver. Reduced employment confidence would likely impact household spending patterns and at that point the economic slowdown would probably become more entrenched and the risk of a recession taking hold would spike higher.

Along with business own activity and consumer own activity indicators, other indicators which provide some strong guidance include a factor model of trend quarterly GDP growth, visitor arrivals, QSBO Architect Own Activity for housing, the slope of the yield curve, the Business NZ PMI and the Business NZ PMI.

What is a recession?

Not all recessions are created equal. A technical recession is defined as two consecutive quarters of contraction in GDP. Another (stricter) definition of recession is a fall in annual GDP. **NZ's experiences with recession have – fortunately – moved from being commonplace to relatively infrequent.** In the GDP data available from late 1987 to 2019, NZ experienced 7 recessions in over 30 years. Four of those alone happened over 1988 to 1992, a period impacted by deregulation, share market and commercial property crashes, the Mother of All Budgets, and spiking oil prices. After this period of upheaval and the bedding in of inflation targeting, **NZ has had 3 recessions over the past 25 years (i.e. 1997/8, 2008/9 and 2010), which on average is a recession every 8 years – or at any given time a 12% chance of recession.**



NZ experienced technical recessions in 1992 and again in late 2010 (following monetary tightening, weak business confidence and the first Canterbury earthquake). In both periods, the recession was relatively short lived and the size of the recession relatively small. In contrast, NZ spent 18 months in recession during the 2008 Global Financial Crisis which had a much larger economic impact. And the 1991 recession is the deepest over the period analysed.

We find that the indicators and models are less confident of predicting when a technical recession strikes, but assign a stronger probability to the larger recessions, such as the Global Financial Crisis and the 1991 recession. We also found that the top 3 models did generally well at highlighting a small risk of recession risk during historical periods when the quarterly growth slowed and underperformed potential growth estimates.

We also looked at calculating the probability of a recession occurring out into the future. However, the indicators selected performed best when predicting a recession in the current quarter and provide little forward guidance at the year-ahead horizon. There is scope for future work in searching for an indicator which can robustly provide some earlier indication of a recession (say 1-year ahead).

Appendix:

ASB Recession probability models:

Model 1 variables include: WMM consumer confidence, QSBO Architect Own Activity for housing, short-term visitor arrivals and the slope of the yield curve.

Model 2 variables include: WMM consumer confidence, ANZ business own activity, short-term visitor arrivals.

Model 3 estimates the probability of a recession from a factor model of trend quarterly GDP growth (2 quarter moving average of quarterly GDP growth).

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