

AUSTRALIAN MARKETS WEEKLY



High household debt likely weighs on consumer spending

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Analysis – High household debt likely weighs on consumer spending

- The Reserve Bank believes the main domestic risk to the outlook is consumer spending, where the bank missed the slump in spending over the past year, which reflected weak incomes and the hit to wealth from the drop in house prices. The bank forecasts a turnaround in spending given lower interest rates and income tax cuts, although their initial impact has been a disappointment given weak retail sales in July.
- Australia's slow growth in consumer spending per person over the past decade is similar to the experience of other advanced economies, which is surprising given Australia avoided the worst of the global financial crisis. Other countries have also experienced weak spending as households have reduced their gearing. This is something yet to be seen in Australia, where household debt has stabilised, but at an all-time high of 120% of GDP, which is also nearly a world record.
- Adapting work showing high public debt stifles growth, we examined the relationship between household debt and consumer spending across the advanced economies. We found that high debt of more than 90% of GDP was associated with weaker growth in spending and spending per capita. This analysis does not guarantee causation, although there is also an association between high debt and weak future growth in spending per capita. Locally, this suggests to us that high debt has played a role in holding back spending, something that should continue given households' debt-servicing ratios remain high despite the lowest level of mortgage rates in decades.

The week ahead – AU NAB business survey; ECB policy easing; UK election speculation

- In Australia, Tuesday's NAB Business Survey for August draws on the larger quarterly business survey sample of companies and continues to be closely watched by the RBA. After falling sharply over the past year, business conditions have been relatively stable over recent months and were at a level of 2 in July.
- Internationally, an aggressive easing package is expected at Thursday's ECB meeting. The consensus expects the deposit rate to be cut by 10bp to -0.5% (we expect a larger 20bp cut to -0.6%), tiering of the deposit rate, and a resumption of QE at €30bn a month. The risk is the ECB underwhelms with a split emerging between policy-makers on the need for QE. Given this division, we think the ECB will talk about a new QE programme, but delay the release of specifics and implementation. In the UK, the timing of a possible election dominates given the passage of a bill to extend the Brexit deadline to 31 January 2020 in the event parliament is unable to agree on a Brexit deal by 19 October. Parliament is set to be suspended by Thursday. PM Johnson wants to call an election before 31 October, while the opposition prefers a later date in order to minimise the risk of a no-deal Brexit.

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[Ask the Economists](#)

[Ask the FX Strategists](#)

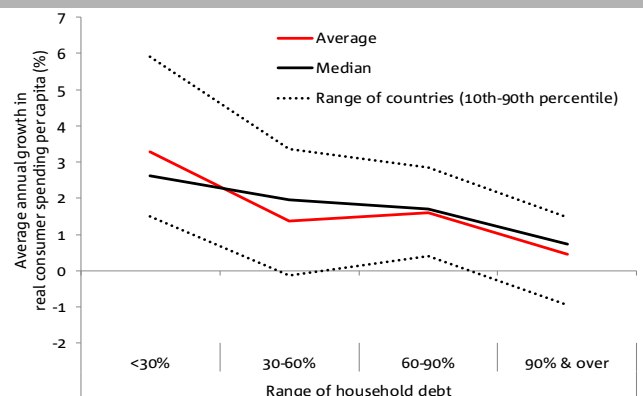
[Ask the Interest Rate Strategists](#)

Key markets over the past week

| | Last | % chg week | | Last | bp/% chg week |
|---------|--------|------------|-----------|------|---------------|
| AUD | 0.6857 | 2.1 | RBA cash | 1.00 | 0.0 |
| AUD/CNY | 4.88 | 1.3 | 3y swap | 0.83 | 0.1 |
| AUD/JPY | 73.3 | 2.7 | ASX 200 | 6649 | 1.1 |
| AUD/EUR | 0.622 | 1.6 | Iron ore | 91.0 | 5.8 |
| AUD/NZD | 1.067 | 0.2 | Brent oil | 62.1 | 5.8 |

Source: Bloomberg

Chart of the week: High debt weighs on spending



High household debt likely weighs on consumer spending

- The Reserve Bank believes the main domestic risk to the outlook is consumer spending, where the bank missed the slump in spending over the past year, which reflected weak incomes and the hit to wealth from the drop in house prices. The bank forecasts a turnaround in spending given lower interest rates and income tax cuts, although their initial impact has been a disappointment given weak retail sales in July.
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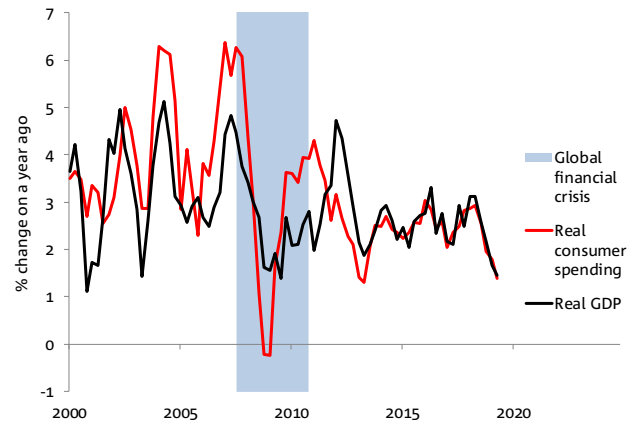
Uncertainty about consumer spending is the main domestic risk to the outlook

In a recent key speech, Reserve Bank Deputy Governor Debelle said the two main risks to the outlook were:

- The escalating trade and technology disputes between the US and China; and
- The outlook for consumer spending, which has been “the primary risk for some time”.¹

The focus on consumer spending is not surprising considering that consumption accounts for 55% of GDP and with real GDP and real consumer spending growing in lockstep over recent years.

Chart 1: Consumer spending has grown in lockstep with GDP over recent years

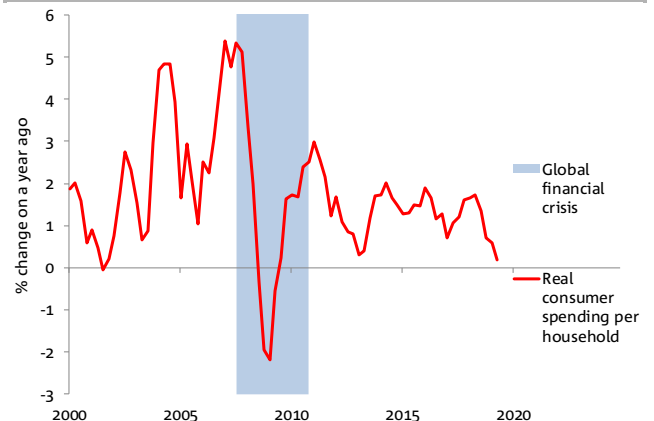


Source: Australian Bureau of Statistics, National Australia Bank

The Reserve Bank missed the slowdown in spending

Consumer spending has slowed sharply over the past year, and real consumption per household has almost stalled on our calculation. This weakness reflects weak income, where we estimate that real income per household has stagnated over recent years, as well as falling household wealth, which should soon stabilise given the improvement in house prices.

Chart 2: Consumer spending per household has almost stalled

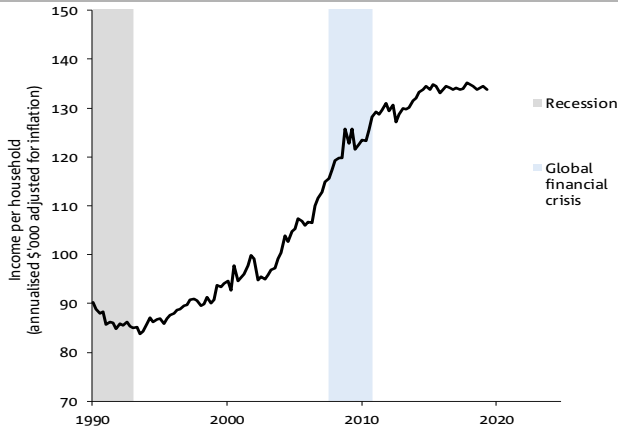


Note: The number of households was estimated by NAB using data from the Survey of Income and Households.

Source: Australian Bureau of Statistics, National Australia Bank

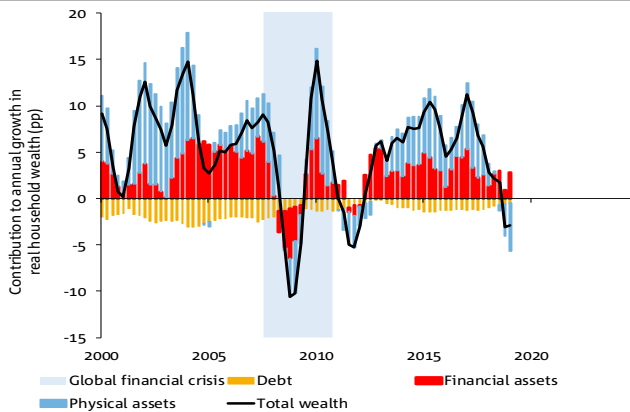
¹ See Reserve Bank Deputy Governor Debelle, *Risks to the outlook*, 15 August 2019.

Chart 3: Income per household has broadly stagnated in real terms



Note: The number of households was estimated by NAB using data from the Survey of Income and Households.
Source: Australian Bureau of Statistics, National Australia Bank

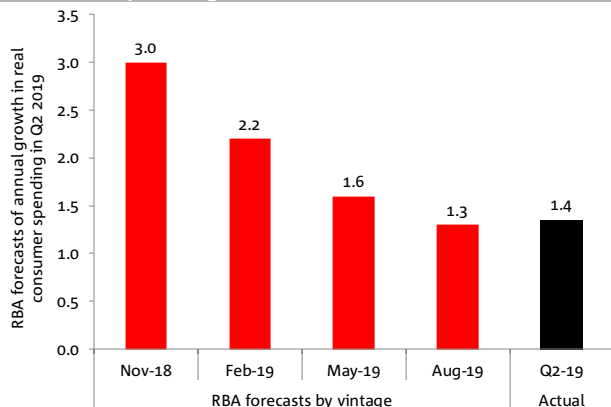
Chart 4: Household wealth should stabilise given the improvement in house prices



Note: Physical assets = value of the housing stock + the stock of consumer durables
Source: Australian Bureau of Statistics, National Australia Bank

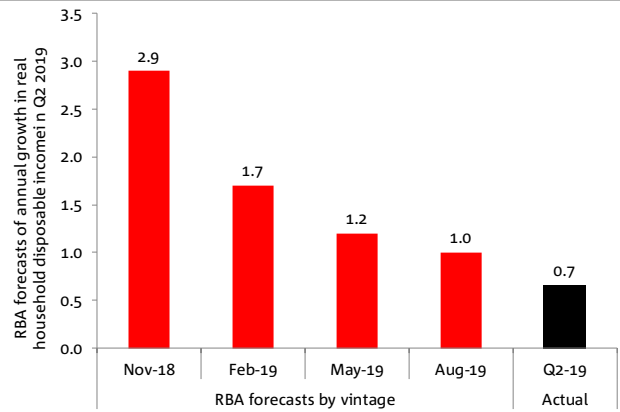
For its part, the Reserve Bank significantly overestimated consumer spending over the past year, which largely reflects an overestimation of household income. For example, late last year the bank thought consumer spending and household income would both be growing at an annual rate of 3% by Q2 this year. Instead, growth in consumer spending slowed to 1.4%, while incomes are up only 0.7%.

Chart 5: The Reserve Bank has overestimated growth in consumer spending ...



Source: Australian Bureau of Statistics, Reserve Bank of Australia, National Australia Bank

Chart 6: ... and household income



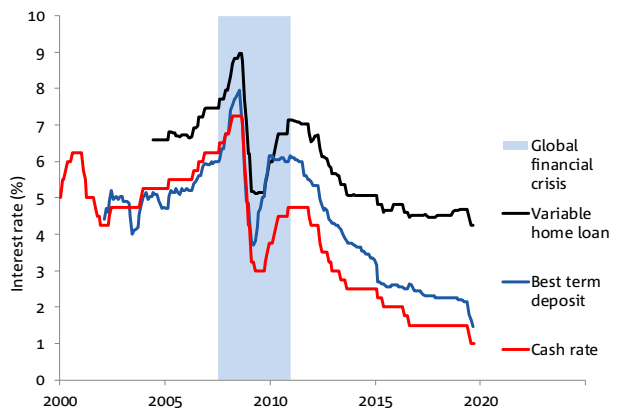
Source: Australian Bureau of Statistics, Reserve Bank of Australia, National Australia Bank

The Reserve Bank forecasts a recovery in spending given lower interest rates and tax cuts

The Reserve Bank believes that the slowdown in consumer spending is temporary given it anticipates a large lift to household income from lower interest rates and the government's income tax cuts.

We agree that lower interest rates will boost incomes given that the June and July rate cuts were reflected in lower mortgage and deposit rates, where household debt greatly exceeds household deposits. Similarly, the tax cuts – which started flowing in July and amount to \$7.2b in 2018-19 as a whole – will further boost incomes.

Chart 7: Lower interest rates will boost household income in Q3



Source: Reserve Bank of Australia, National Australia Bank

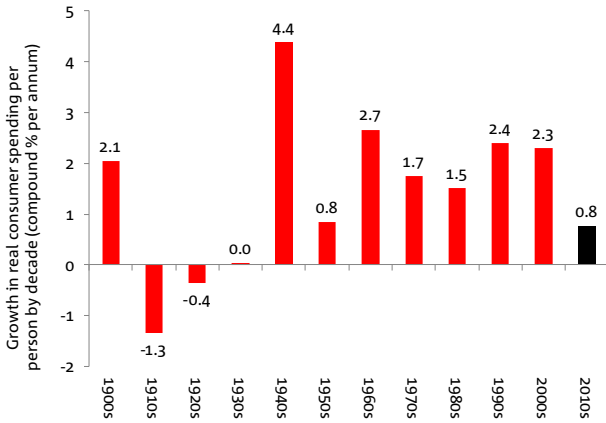
However, the initial impact of both the rate cuts and tax cuts was a let-down based on retail sales, which fell by 0.1% in July. The Reserve Bank has said it expects the boost to sales to come in August, although the experience of the global financial crisis was that cash handouts were immediately reflected in a spike in spending.

The more fundamental issue is that consumer spending has been weak since the global financial crisis

Stepping back from assessing recent trends and the near-term outlook for spending, the more striking feature of consumer spending is the weak growth over the decade to date. That is, we calculate that growth in spending per person over the 2010s to date has averaged 0.8%, which is the weakest growth since the 1950s.

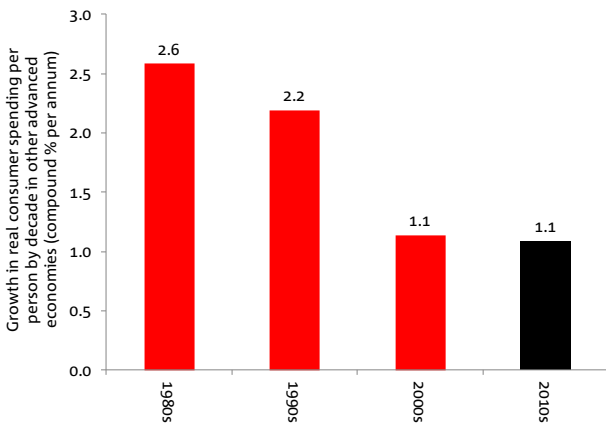
Interestingly, though, the weakness in spending per capita is broadly similar to the experience of other advanced economies. We estimate that consumer spending per capita across Australia’s peers has averaged 1.1% in the 2010s to date, when spending fell in many advanced economies during the global financial crisis.

Chart 8: Consumer spending per person has been exceptionally weak in the 2010s to date



Source: Australian Bureau of Statistics, Butlin, Reserve Bank of Australia, National Australia Bank

Chart 9: The weakness in spending is broadly in line with other advanced economies



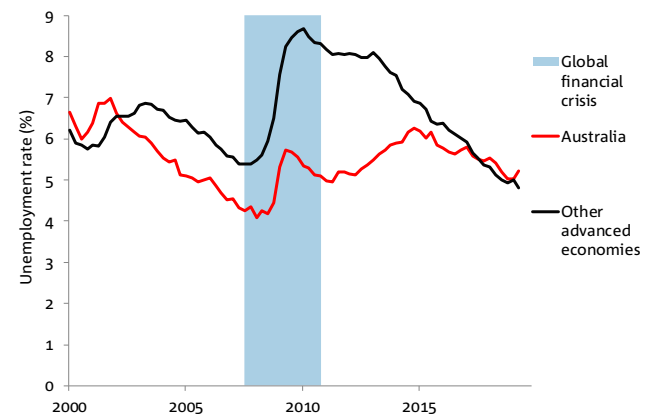
Note: Other advanced economy growth was constructed using PPP weights by NAB. The other advanced economies are: Austria, Belgium, Canada, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Iceland, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, Netherlands, New Zealand, Norway, Portugal, Singapore, Slovak Republic, Slovenia, South Korea, Spain, Sweden, Switzerland, Taiwan, United Kingdom, and United States of America. The 2010s are the decade to date.
Source: International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, World Bank, National Australia Bank

Other countries with weak spending endured much higher unemployment and household deleveraging

The broad similarity between growth in spending per capita in Australia and other countries is surprising given that Australia was fortunate to avoid the worst of the global financial crisis, as reflected in a lower unemployment rate over most of the 2010s than its peers.

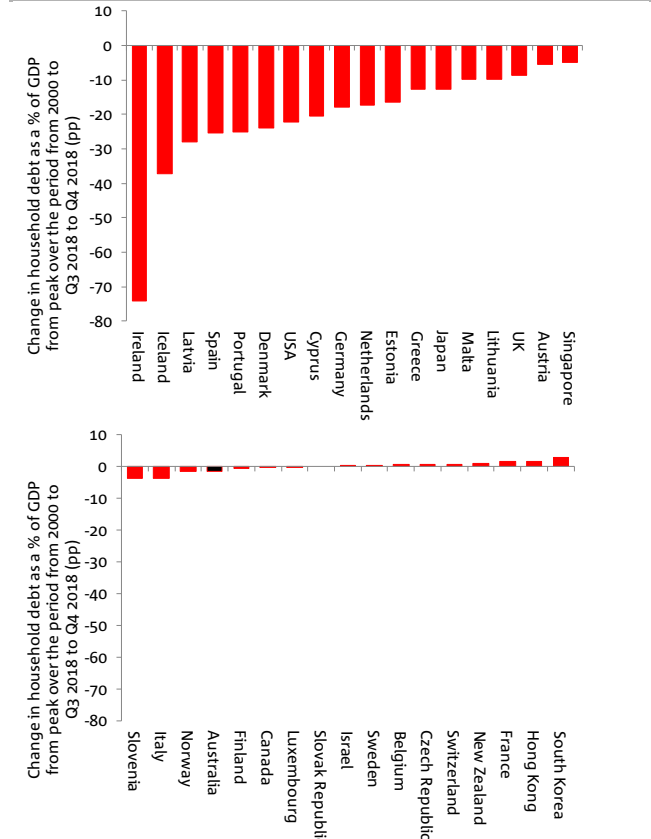
Many other countries experienced deleveraging, with the ratio of household debt to GDP falling by 5pp or more in about one in two advanced economies.

Chart 10: Australia was lucky to avoid the worst of the global financial crisis, as reflected in lower unemployment than other advanced economies



Note: Unemployment in other advanced economies was PPP-weighted by NAB. See the note to Chart 9 for the list of other advanced economies.
Source: International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, World Bank, National Australia Bank

Chart 11: Australia also avoided the deleveraging of households in other advanced economies



Source: Bank for International Settlements, International Monetary Fund, World Bank, National Australia Bank

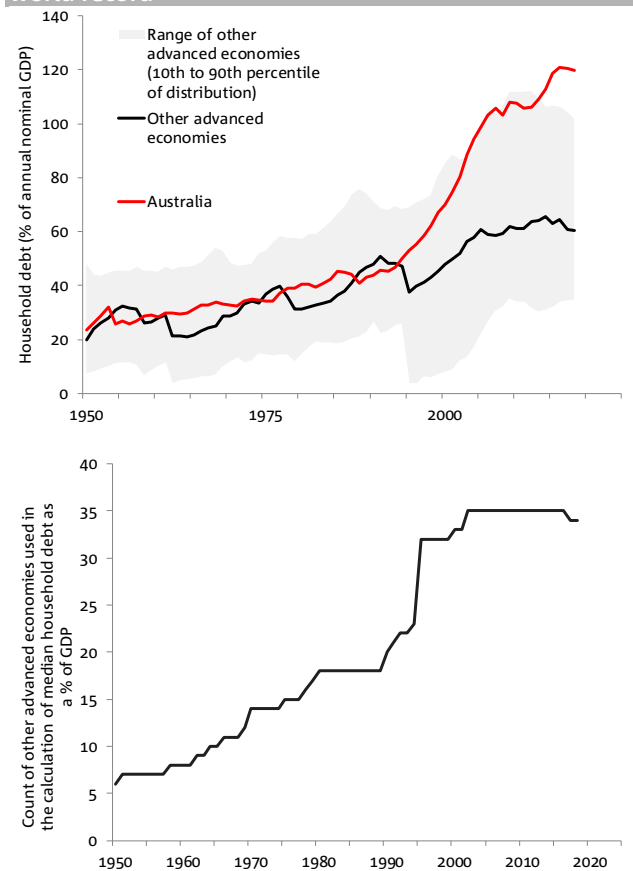
Australia is yet to experience a material episode of household deleveraging

The widespread experience of other countries reducing household leverage provides an interesting contrast given that Australia is yet to experience a material episode of deleveraging.

As is well known, household debt in Australia is currently at a record 120% of annual GDP, which equates to about 200% of annual household income if the remaining,

relatively minor, household liabilities are added to debt. This is a record high and nearly a world record among the advanced economies, surpassed only by Switzerland at 129% of GDP.

Chart 12: Australia's record household debt is almost a world record



Source: Bank for International Settlements, International Monetary Fund, World Bank, National Australia Bank

High levels of household debt are associated with weak consumer spending

While deleveraging is an obvious drag on consumer spending, it may be that household debt can reach a point where it is also a restraint on consumption.

The idea of high public debt can stifle growth has been explored at length in the wake of the pioneering analysis a decade ago by Carmen Reinhart and Kenneth Rogoff, two Harvard academics who showed that public debt of 90% or more of GDP was associated with markedly slower growth.

The Reinhart and Rogoff work was important because it drew on the experience of a large range of advanced economies over a very long time-span. Although there was a unfortunate mistake in one of their initial publications, the idea that high debt stifles growth has been broadly supported by more sophisticated analysis by the Bank for International Settlements and International Monetary Fund.

Taking a leaf out of Reinhart and Rogoff's work, we examined whether high levels of household debt weigh on consumer spending. Although we incorporated almost every advanced economy into our analysis, the time period was much shorter than Rogoff's work given household debt estimates are generally only available in the post-WW2 period.²

Calculating average and median growth in spending for when household debt is classed as either low (<30% of GDP), moderate (30-90%) or high (90% or more), the results show:

- **High household debt is associated with weaker consumer spending.** Moderate debt levels are associated with average annual growth in real spending of 2-2.3%, which slows to 1.3% when debt is high. The median growth rates slow from 2.5-2.6% under moderate debt to 1.5% with high debt.
- **High household debt is associated with weaker consumer spending per person.** Moderate debt levels are associated with average growth in real spending per capita of 1.4-1.6%, which falls to 0.5% when debt is high. The median growth rates fall from 1.7-2.0% when debt is moderate to 0.7% when debt is high.
- **High household debt is associated with weaker future consumer spending per person.** Moderate debt levels are associated with average growth in real spending per capita over the next five years of 1.2-1.5%, which falls to 0.2% when debt is high. The median growth rates drop from 1.2-1.7% when debt is moderate to 0.2% when debt is high.

Table 1: High household debt weighs on consumer spending

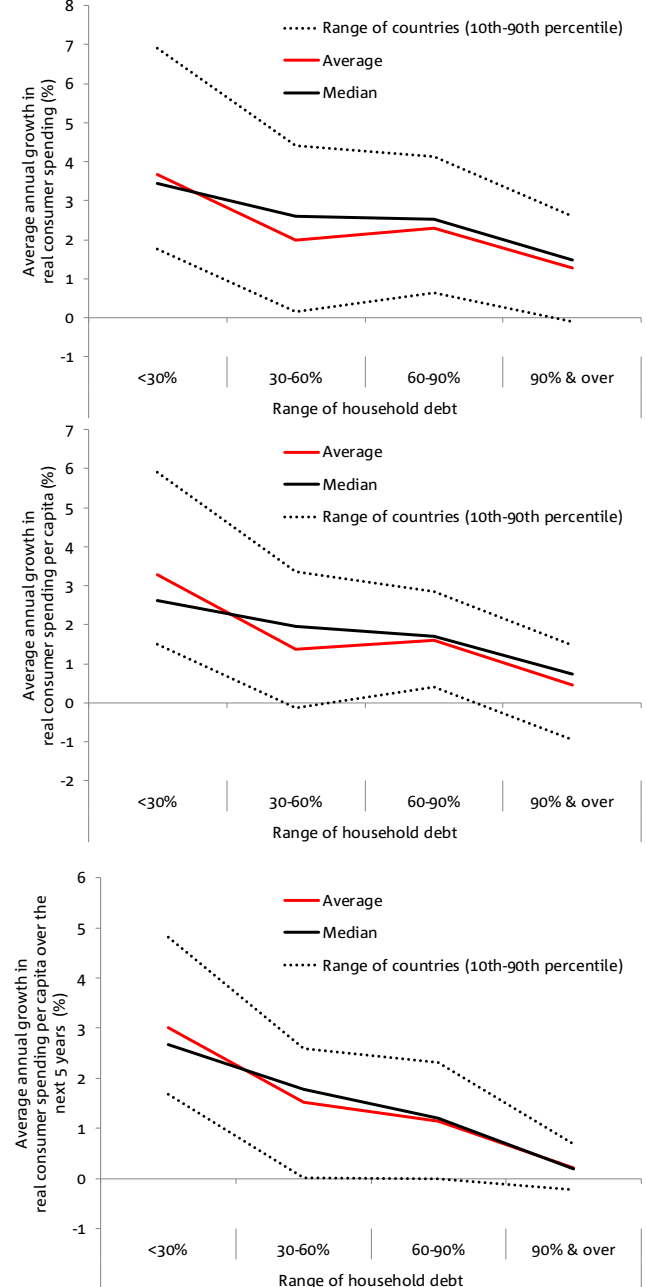
| (Average growth rate) | Range of household debt: | | | |
|--------------------------------------------------------------------|--------------------------|--------------------|----------------|--------------------|
| | Low <30% | Moderate 30-60% | High 60-90% | High 90% & over |
| Real consumer spending (% yoy) | 3.6 | 2.0 | 2.3 | 1.3 |
| Real consumer spending per capita (% yoy) | 3.2 | 1.4 | 1.6 | 0.5 |
| Real consumer spending per capita over the next five years (% yoy) | 3.0 | 1.5 | 1.2 | 0.2 |
| (Median growth rate) | Range of household debt: | | | |
| | Low <30% | Moderate 30-60% | High 60-90% | High 90% & over |
| Real consumer spending (% yoy) | 3.2 | 2.6 | 2.5 | 1.5 |
| Real consumer spending per capita (% yoy) | 2.5 | 2.0 | 1.7 | 0.7 |
| Real consumer spending per capita over the next five years (% yoy) | 2.5 | 1.7 | 1.2 | 0.2 |

Note: See the note to Chart 9 for the list of other advanced economies.
Source: Australian Bureau of Statistics, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, World Bank, National Australia Bank

² The Jorda-Schularick-Taylor database has a much longer history of household debt for a number of advanced

economies, but the older estimates are generally narrower in scope.

Chart 13: Higher household debt is associated with weaker actual and future growth in consumer spending



Note: See the note to Chart 9 for the list of other advanced economies.
 Source: Australian Bureau of Statistics, Bank for International Settlements, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, World Bank, National Australia Bank

High debt seems likely to continue to weigh on spending given debt-servicing ratios

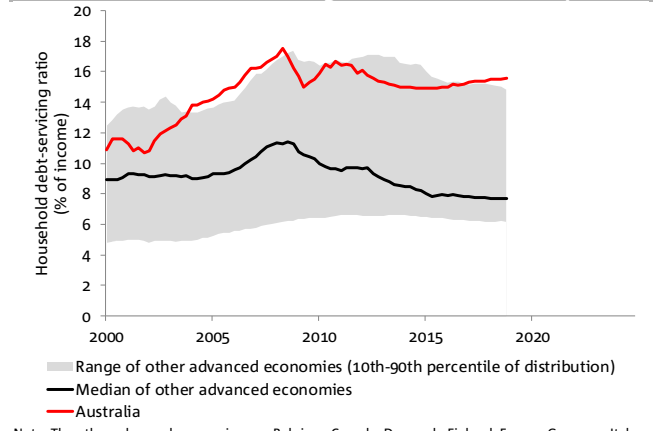
The association between high levels of household debt and weak actual spending in the advanced economies does not prove that high debt plays a role in causing weak spending. However, the fact that high debt is associated with weak *future* growth in spending suggests that high debt levels do weigh on consumption.

We plan to formally examine this issue using a panel regression of spending across the advanced economies, also allowing for interaction with public debt, although older work by the Bank for International Settlements weakly suggests household debt of more than 85% of GDP is a drag on GDP growth.³

Pending the results of that work, this initial analysis suggests that some of the weakness in spending reflects high levels of household debt and that spending will remain under pressure for some time. This may seem surprising given the low level of interest rates, but the estimated debt-servicing ratio for households remains high at 16% of income. This is close to the 18% peak reached in 2008 when mortgage rates reached 9%, more than double the current level of home loan rates.

Kieran Davies

Chart 14: High debt means the household debt-servicing ratio in Australia is near its global financial crisis peak



Note: The other advanced economies are: Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Korea, Netherlands, Norway, Portugal, Spain, Sweden, United Kingdom, and United States of America.
 Source: Bank for International Settlements, National Australia Bank

³ See Stephen Cecchetti, MS Mohanty and Fabrizio Zampolli, *The real effects of debt*, Bank for International Settlements Working paper No. 352, September 2011.

CALENDAR OF ECONOMIC RELEASES

| Country | Economic Indicator | Period | Forecast | Consensus | Actual | Previous | GMT | AEST |
|----------------------------------------------------------|--------------------------------|--------|----------|-----------|--------|----------|--------------------|-------|
| Monday, 9 September 2019 | | | | | | | | |
| UK | Monthly GDP (MoM) | Jul | | -- | | 0 | 8.30 | 18.30 |
| UK | Industrial Production MoM | Jul | | -- | | -0.1 | 8.30 | 18.30 |
| CH | New Yuan Loans CNY | Aug | | 1200 | | 1060 | 9 to 15 September | |
| CH | Money Supply M2 YoY | Aug | | 8.2 | | 8.1 | 9 to 15 September | |
| Tuesday 10 September 2019 | | | | | | | | |
| NZ | REINZ House Sales YoY | Aug | | -- | | 3.7 | 10 to 15 September | |
| NZ | ANZ Truckometer Heavy MoM | Aug | | -- | | 4.1 | 22.00 | 8.00 |
| AU | NAB Business Conditions | Aug | | -- | | 2 | 1.30 | 11.30 |
| AU | NAB Business Confidence | Aug | | -- | | 4 | 1.30 | 11.30 |
| CH | CPI YoY | Aug | | 2.6 | | 2.8 | 1.30 | 11.30 |
| CH | PPI YoY | Aug | | -0.9 | | -0.3 | 1.30 | 11.30 |
| UK | Jobless Claims Change | Aug | | -- | | 28 | 8.30 | 18.30 |
| UK | ILO Unemployment Rate 3Mths | Jul | | -- | | 3.9 | 8.30 | 18.30 |
| US | NFIB Small Business Optimism | Aug | | -- | | 104.7 | 10.00 | 20.00 |
| CA | Housing Starts | Aug | | -- | | 222.013 | 12.15 | 22.15 |
| Wednesday 11 September 2019 | | | | | | | | |
| NZ | Net Migration SA | Jul | | -- | | 3100 | 22.45 | 8.45 |
| AU | Westpac Consumer Conf Index | Sep | | -- | | 100 | 0.30 | 10.30 |
| US | PPI Final Demand MoM | Aug | | 0.1 | | 0.2 | 12.30 | 22.30 |
| US | Wholesale Inventories MoM | Jul F | | -- | | 0.2 | 14.00 | 0.00 |
| Thursday 12 September 2019 | | | | | | | | |
| NZ | Food Prices MoM | Aug | | -- | | 1.1 | 22.45 | 8.45 |
| JN | PPI MoM | Aug | | -0.2 | | 0 | 23.50 | 9.50 |
| JN | Core Machine Orders MoM | Jul | | -7.9 | | 13.9 | 23.50 | 9.50 |
| AU | Consumer Inflation Expectation | Sep | | -- | | 3.5 | 1.00 | 11.00 |
| GE | CPI MoM | Aug F | | -- | | -0.2 | 6.00 | 16.00 |
| EC | Industrial Production SA MoM | Jul | | -- | | -1.6 | 9.00 | 19.00 |
| EC | ECB Main Refinancing Rate | Sep 12 | | -- | | 0 | 11.45 | 21.45 |
| EC | ECB Marginal Lending Facility | Sep 12 | | -- | | 0.25 | 11.45 | 21.45 |
| EC | ECB Deposit Facility Rate | Sep 12 | | -- | | -0.4 | 11.45 | 21.45 |
| EC | ECB Draghi speaks in Frankfurt | Sep 12 | | -- | | | 12.30 | 22.30 |
| US | CPI MoM | Aug | | 0.1 | | 0.3 | 12.30 | 22.30 |
| US | CPI YoY | Aug | | 1.7 | | 1.8 | 12.30 | 22.30 |
| Friday 13 September 2019 | | | | | | | | |
| NZ | BusinessNZ Manufacturing PMI | Aug | | -- | | 48.2 | 22.30 | 8.30 |
| JN | Industrial Production MoM | Jul F | | -- | | 1.3 | 4.30 | 14.30 |
| US | Retail Sales Advance MoM | Aug | | 0.3 | | 0.7 | 12.30 | 22.30 |
| US | U. of Mich. Sentiment | Sep P | | 90 | | 89.8 | 14.00 | 0.00 |
| US | U. of Mich. Expectations | Sep P | | -- | | 79.9 | 14.00 | 0.00 |
| Upcoming Central Bank Interest Rate Announcements | | | | | | | | |
| Europe, ECB | | Sep 12 | -0.6 | -0.5 | | -0.4 | | |
| US, Federal Reserve | | Sep 18 | 1.75/2 | 1.75/2 | | 2/2.25 | | |
| UK, BOE | | Sep 19 | -- | -- | | 0.75 | | |
| New Zealand, RBNZ | | Sep 25 | 1 | 1 | | 1 | | |
| Australia, RBA | | Oct 1 | 1 | 1 | | 1 | | |

GMT: Greenwich Mean Time; AEST: Australian Eastern Standard Time

FORECASTS

| Economic Forecasts | | | | | | | | | | | | | | | | | | | | |
|--------------------------------|-----------------|------|------|------|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | Annual % change | | | | Quarterly % change | | | | | | | | | | | | | | | |
| | 2018 | 2019 | 2020 | 2021 | 2018 | | | | 2019 | | | | 2020 | | | | 2021 | | | |
| Australia Forecasts | 2018 | 2019 | 2020 | 2021 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Household Consumption | 2.6 | 1.5 | 2.0 | 2.5 | 0.4 | 0.8 | 0.3 | 0.4 | 0.3 | 0.4 | 0.5 | 0.6 | 0.4 | 0.5 | 0.7 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 |
| Underlying Business Investment | 0.9 | -0.3 | 2.2 | 2.1 | 0.6 | -1.0 | -2.1 | 0.0 | 0.6 | -4.4 | 0.6 | 0.3 | 0.7 | 0.5 | 0.9 | 0.5 | 0.5 | 0.5 | 0.2 | 0.5 |
| Residential Construction | 4.7 | -8.2 | -8.1 | -1.4 | 4.1 | 1.7 | 0.7 | -2.9 | -2.5 | -0.4 | -3.0 | -2.2 | -2.0 | -1.7 | -1.8 | -0.8 | -0.2 | 0.5 | 0.2 | 0.8 |
| Underlying Public Spending | 5.0 | 5.4 | 4.5 | 4.1 | 1.4 | 0.4 | 2.5 | 1.6 | 1.1 | 1.4 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 |
| Net Exports (a) | 0.7 | 1.1 | -0.1 | -0.2 | 0.5 | 0.2 | 0.3 | -0.2 | 0.2 | 0.6 | 0.2 | 0.2 | 0.1 | 0.0 | -0.1 | 0.0 | -0.1 | -0.1 | -0.1 | 0.0 |
| Inventories (a) | 0.1 | -0.2 | -0.1 | 0.0 | -0.1 | 0.2 | -0.3 | 0.2 | -0.1 | -0.7 | 0.0 | -0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Domestic Demand (q/q %) | -- | -- | -- | -- | 0.9 | 0.6 | 0.5 | 0.4 | 0.1 | 0.3 | 0.4 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 |
| Dom Demand (y/y %) | 2.9 | 1.3 | 2.0 | 2.6 | 3.4 | 3.2 | 2.8 | 2.4 | 1.6 | 1.0 | 1.2 | 1.3 | 1.6 | 1.9 | 2.2 | 2.3 | 2.5 | 2.6 | 2.7 | 2.8 |
| Real GDP (q/q %) | -- | -- | -- | -- | 1.0 | 0.9 | 0.3 | 0.2 | 0.4 | 0.5 | 0.6 | 0.7 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 |
| Real GDP (y/y %) | 2.8 | 1.8 | 2.3 | 2.4 | 3.1 | 3.1 | 2.8 | 2.4 | 1.8 | 1.4 | 1.7 | 2.2 | 2.3 | 2.4 | 2.3 | 2.2 | 2.3 | 2.4 | 2.4 | 2.5 |
| CPI headline (q/q %) | -- | -- | -- | -- | 0.4 | 0.4 | 0.4 | 0.5 | 0.0 | 0.6 | 0.4 | 0.6 | 0.4 | 0.4 | 0.5 | 0.7 | 0.5 | 0.5 | 0.6 | 0.7 |
| CPI headline (y/y %) | 1.9 | 1.5 | 1.8 | 2.2 | 1.9 | 2.1 | 1.9 | 1.8 | 1.3 | 1.6 | 1.6 | 1.6 | 2.0 | 1.7 | 1.8 | 1.9 | 2.1 | 2.2 | 2.3 | 2.3 |
| CPI underlying (q/q %) | -- | -- | -- | -- | 0.5 | 0.5 | 0.3 | 0.4 | 0.2 | 0.4 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| CPI underlying (y/y %) | 1.8 | 1.4 | 1.5 | 1.9 | 1.9 | 1.7 | 1.7 | 1.7 | 1.4 | 1.4 | 1.3 | 1.3 | 1.5 | 1.4 | 1.5 | 1.7 | 1.8 | 1.9 | 2.0 | 2.0 |
| Private wages (q/q %) | -- | -- | -- | -- | 0.5 | 0.6 | 0.6 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| Private wages (y/y %) | 2.1 | 2.3 | 2.5 | 2.8 | 1.9 | 2.1 | 2.2 | 2.3 | 2.4 | 2.3 | 2.3 | 2.4 | 2.5 | 2.5 | 2.6 | 2.6 | 2.7 | 2.7 | 2.8 | 2.8 |
| Unemployment Rate (%) | 5.3 | 5.2 | 5.3 | 5.4 | 5.5 | 5.5 | 5.1 | 5.0 | 5.1 | 5.2 | 5.2 | 5.3 | 5.3 | 5.3 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 |
| Terms of trade | 1.8 | 4.1 | -7.6 | 1.8 | 3.2 | -1.2 | 1.1 | 2.9 | 3.1 | 2.7 | -4.4 | -4.7 | -2.6 | -0.6 | 0.9 | -0.2 | 1.2 | 0.6 | -0.1 | -0.1 |
| Current Account (% GDP) | -2.0 | -0.4 | -1.8 | -1.6 | -2.2 | -2.5 | -2.1 | -1.3 | -0.6 | 1.2 | -0.3 | -1.1 | -1.7 | -1.8 | -1.7 | -1.8 | -1.6 | -1.5 | -1.6 | -1.6 |

Source: NAB Group Economics; (a) Contributions to GDP growth

| Exchange Rate Forecasts | | | | | | |
|-------------------------|-------|--------|--------|--------|--------|--------|
| | 9-Sep | Dec-19 | Mar-20 | Jun-20 | Sep-20 | Dec-20 |
| Majors | | | | | | |
| AUD/USD | 0.686 | 0.65 | 0.66 | 0.67 | 0.69 | 0.70 |
| NZD/USD | 0.64 | 0.62 | 0.62 | 0.63 | 0.65 | 0.65 |
| USD/JPY | 106.9 | 104 | 104 | 105 | 106 | 106 |
| EUR/USD | 1.10 | 1.12 | 1.11 | 1.13 | 1.14 | 1.15 |
| GBP/USD | 1.23 | 1.20 | 1.18 | 1.20 | 1.22 | 1.24 |
| USD/CNY | 7.12 | 7.40 | 7.40 | 7.30 | 7.20 | 7.10 |
| USD/CAD | 1.32 | 1.36 | 1.38 | 1.38 | 1.36 | 1.35 |
| USD/CHF | 0.99 | 0.97 | 0.95 | 0.96 | 0.96 | 0.96 |

| Australian Cross Rates | | | | | | |
|------------------------|-------|--------|--------|--------|--------|--------|
| | 9-Sep | Dec-19 | Mar-20 | Jun-20 | Sep-20 | Dec-20 |
| AUD/NZD | 1.07 | 1.05 | 1.06 | 1.06 | 1.06 | 1.08 |
| AUD/JPY | 73.3 | 68 | 69 | 70 | 73 | 74 |
| AUD/EUR | 0.62 | 0.58 | 0.59 | 0.59 | 0.61 | 0.61 |
| AUD/GBP | 0.56 | 0.54 | 0.56 | 0.56 | 0.57 | 0.56 |
| AUD/CNY | 4.88 | 4.81 | 4.88 | 4.89 | 4.97 | 4.97 |
| AUD/CAD | 0.90 | 0.88 | 0.91 | 0.92 | 0.94 | 0.95 |
| AUD/CHF | 0.68 | 0.63 | 0.63 | 0.64 | 0.66 | 0.67 |

| Interest Rate Forecasts | | | | | | |
|------------------------------|-------|--------|--------|--------|--------|--------|
| | 9-Sep | Dec-19 | Mar-20 | Jun-20 | Sep-20 | Dec-20 |
| Australian Rates | | | | | | |
| RBA cash rate | 1.00 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| 3 month bill rate | 1.00 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 3 Year Swap Rate | 0.83 | 0.75 | 0.80 | 0.90 | 0.95 | 1.00 |
| 10 Year Swap Rate | 1.19 | 1.05 | 1.05 | 1.20 | 1.35 | 1.45 |
| Offshore Policy Rates | | | | | | |
| US Fed funds | 2.25 | 1.75 | 1.75 | 1.75 | 1.75 | 1.75 |
| ECB deposit rate | -0.40 | -0.60 | -0.60 | -0.60 | -0.60 | -0.50 |
| BoE repo rate | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 1.00 |
| BoJ excess reserves rate | -0.10 | -0.10 | -0.10 | -0.10 | -0.10 | -0.10 |
| RBNZ OCR | 1.00 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| China 1yr lending rate | 4.35 | 4.10 | 4.10 | 4.10 | 4.10 | 4.10 |
| China Reserve Ratio | 13.5 | 12.50 | 12.00 | 12.00 | 12.00 | 12.00 |
| 10-year Bond Yields | | | | | | |
| Australia | 1.04 | 0.90 | 0.90 | 1.00 | 1.10 | 1.20 |
| United States | 1.56 | 1.50 | 1.50 | 1.60 | 1.70 | 1.80 |
| New Zealand | 1.13 | 0.95 | 0.95 | 1.05 | 1.10 | 1.30 |

Sources: NAB Global Markets Research; Bloomberg; ABS

| Global GDP | | | | |
|----------------|------|------|------|------|
| | 2018 | 2019 | 2020 | 2021 |
| Australia | 2.8 | 1.8 | 2.3 | 2.4 |
| United States | 2.9 | 2.2 | 1.7 | 1.8 |
| Eurozone | 1.9 | 1.1 | 1.2 | 1.4 |
| United Kingdom | 1.4 | 1.2 | 1.2 | 1.5 |
| Japan | 0.8 | 1.2 | 0.3 | 0.9 |
| China | 6.6 | 6.3 | 6.0 | 5.8 |
| India | 6.8 | 6.3 | 7.0 | 7.1 |
| New Zealand | 2.9 | 2.4 | 2.6 | 2.5 |
| World | 3.6 | 3.1 | 3.3 | 3.5 |

| Commodity prices (\$US) | | | | | |
|-------------------------|-------|--------|--------|--------|--------|
| | 9-Sep | Dec-19 | Mar-20 | Jun-20 | Sep-20 |
| Brent oil | 62.1 | 70 | 70 | 75 | 75 |
| Gold | 1507 | 1450 | 1483 | 1518 | 1547 |
| Iron ore | 91 | 76 | 72 | 68 | 71 |
| Hard coking coal* | 147 | 170 | 165 | 160 | 155 |
| Thermal coal | 64 | 90 | 93 | 90 | 88 |
| Copper | 5809 | 6300 | 6225 | 6150 | 6125 |
| Aus LNG** | 10 | 12 | 12 | 12 | 12 |

* FOB quarterly contract prices (thermal coal is JFY contract)

** Implied Australian LNG export prices

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