

Inflation chart pack: September Quarter, 2021

ONE

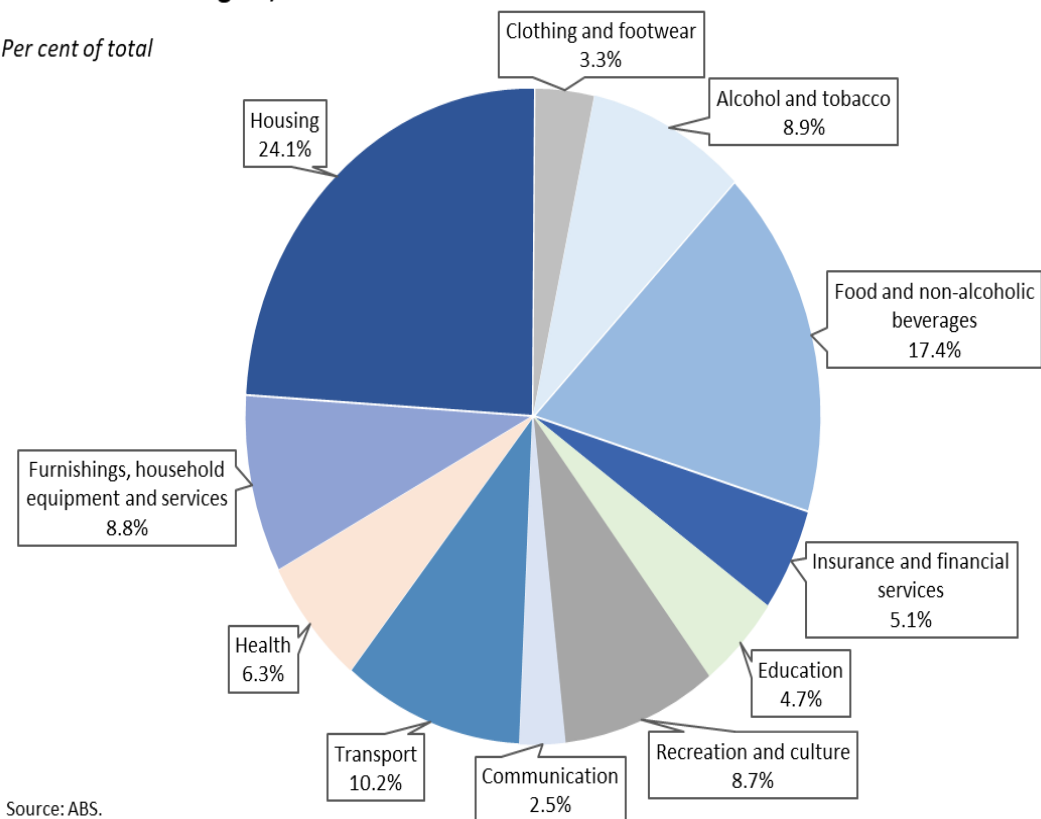
Notes on methodology

The Consumer Price Index (CPI)

- **The ABS Consumer Price Index (CPI)** measures quarterly changes in the price of a 'basket' of goods and services. The index tracks changes over time in the prices paid by Australian households for goods and services by weighting the index components by household spending patterns ('expenditure weights').
- The CPI comprises eleven groups: food and non-alcoholic beverages; alcohol and tobacco; clothing and footwear; housing; furnishings, household equipment and services; health; transport; communication; recreation and culture; education; insurance and financial services. Those groups are composed of 33 sub-groups and 87 categories or expenditure classes.
- The largest group in the CPI is housing (with a 24.1 per cent weighting), followed by food and non-alcoholic beverages (17.4 per cent) and transport (10.2 per cent).
- From the December quarter 2018, the expenditure weights have been updated annually using ABS Household Final Consumption Expenditure (HFCE) data. HFCE data captures household expenditure by Australian households only and excludes expenditure by non-residents in Australia.

Australia: CPI weights, 2020

Per cent of total

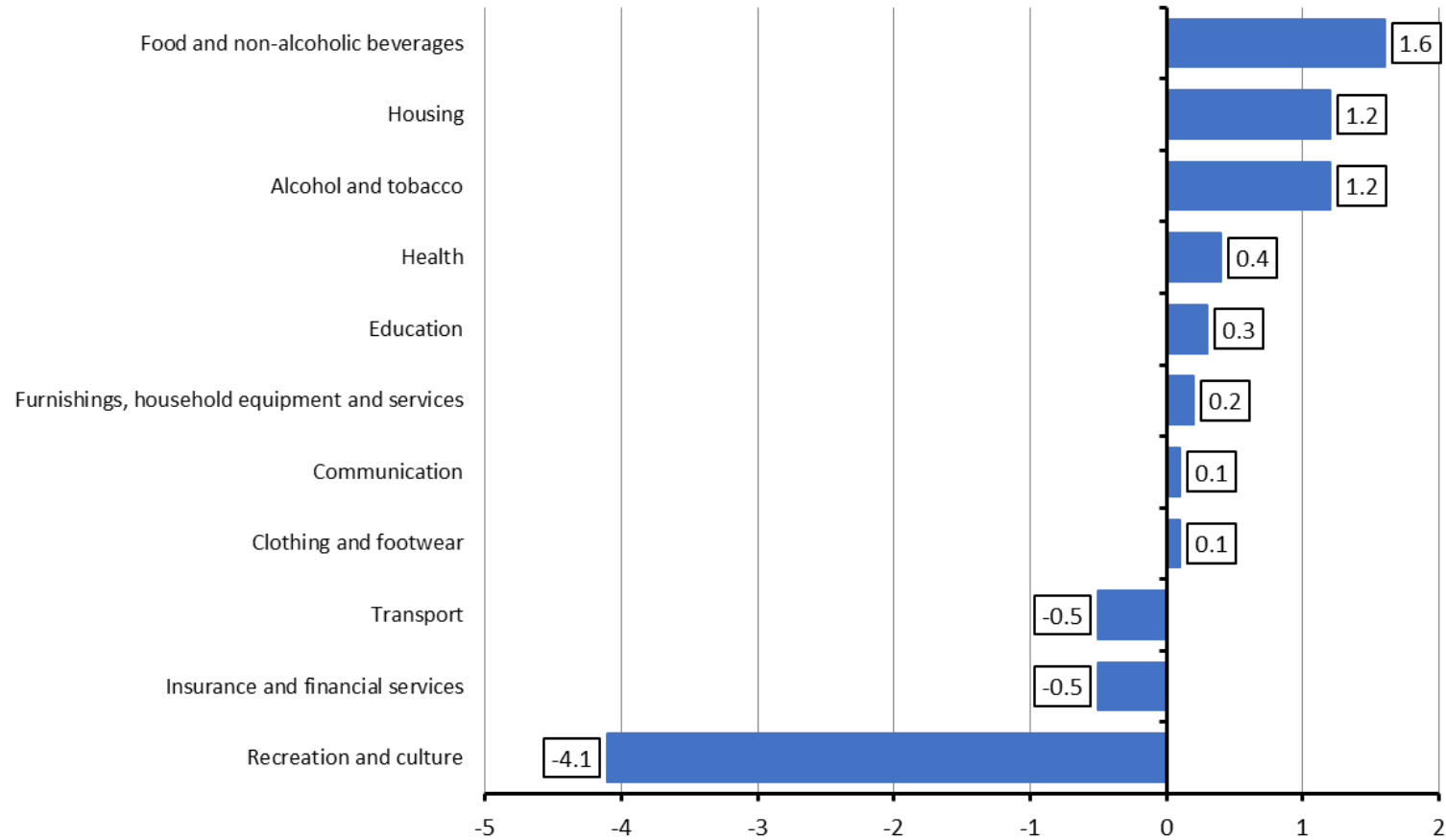


Source: ABS.

Change in CPI weights, 2020

Australia: Change in weights for CPI groups, 2020

Percentage point change relative to 2019



Source: ABS. Note, the large fall in the weight for the recreation and culture group reflects the impact of international holiday travel, which fell 3.3 percentage points. That in turn reflects the closure of Australia's international borders for holiday travellers. The rise in the weight of food and beverage expenditure reflects changes in the pattern of household consumption during lockdowns and the increase in WFH.

TWO

CPI

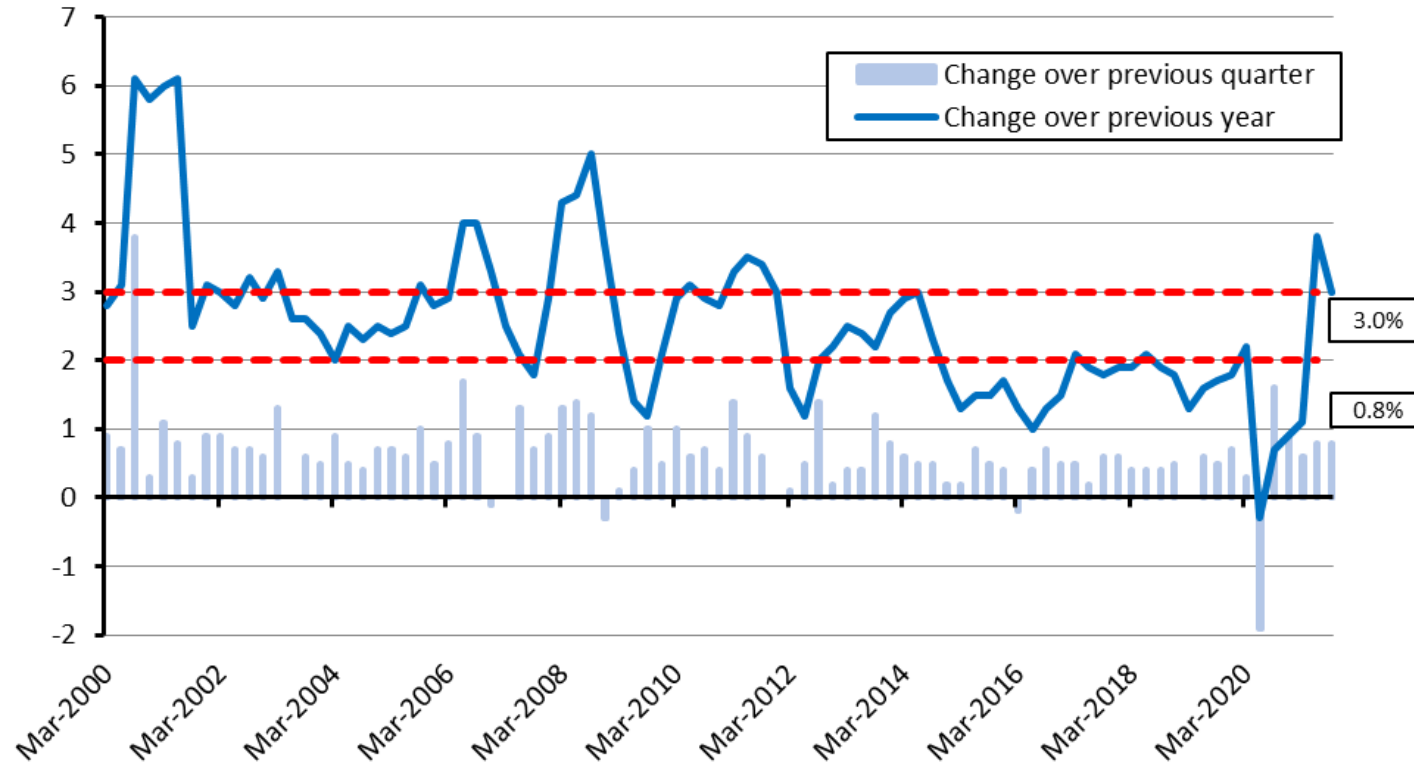
September Quarter, 2021

Consumer Price Inflation

Australia: Consumer price Index (CPI)

Per cent change in CPI over previous period, nsa

Australia's headline CPI rose 0.8% over the quarter and 3% over the year in Q3:2021, in line with market expectations. The rate of quarterly increase was unchanged from Q2 but the annual rate has slowed.



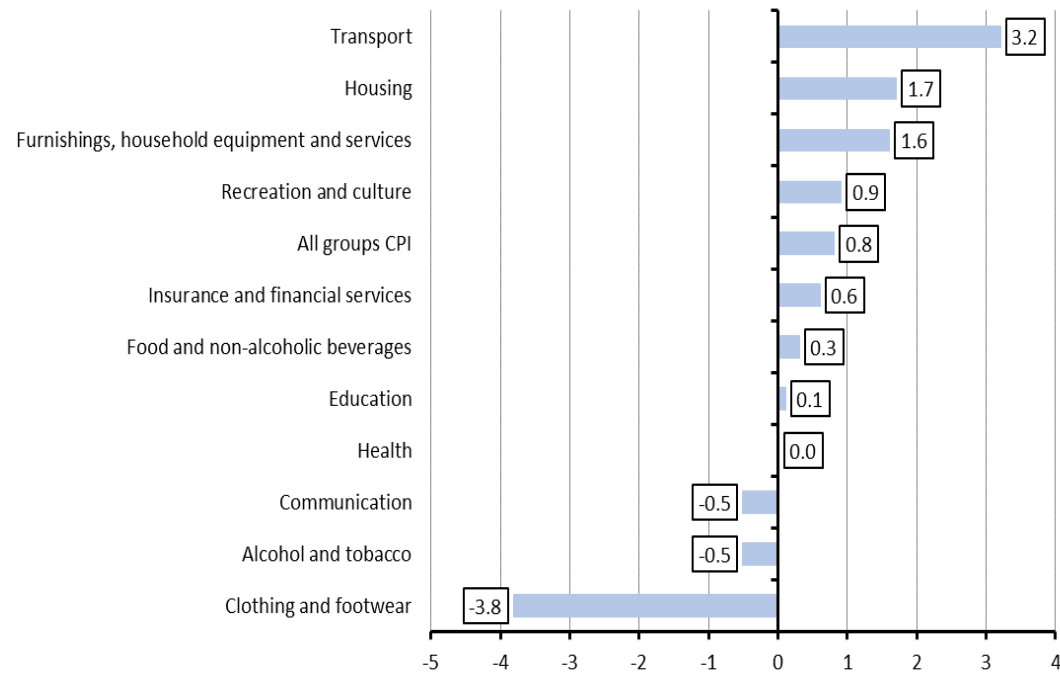
Source: Bloomberg and ABS. The RBA's target is 'to keep consumer price inflation between two and three per cent, on average, over time.' **Data to September quarter 2021.**

CPI by groups

The main drivers of the rise in the CPI in the September quarter were increases in transport, housing and furnishings, household equipment and services. Transport was pushed up by soaring automotive fuel prices and higher prices for motor vehicles; housing reflected a surge in new dwelling purchases by owner-occupiers; and furnishings and household services, in part reflected a broader rise in increased household spending on consumer durables along with an increase in the cost of childcare.

Australia: CPI by main groups, September quarter, 2021

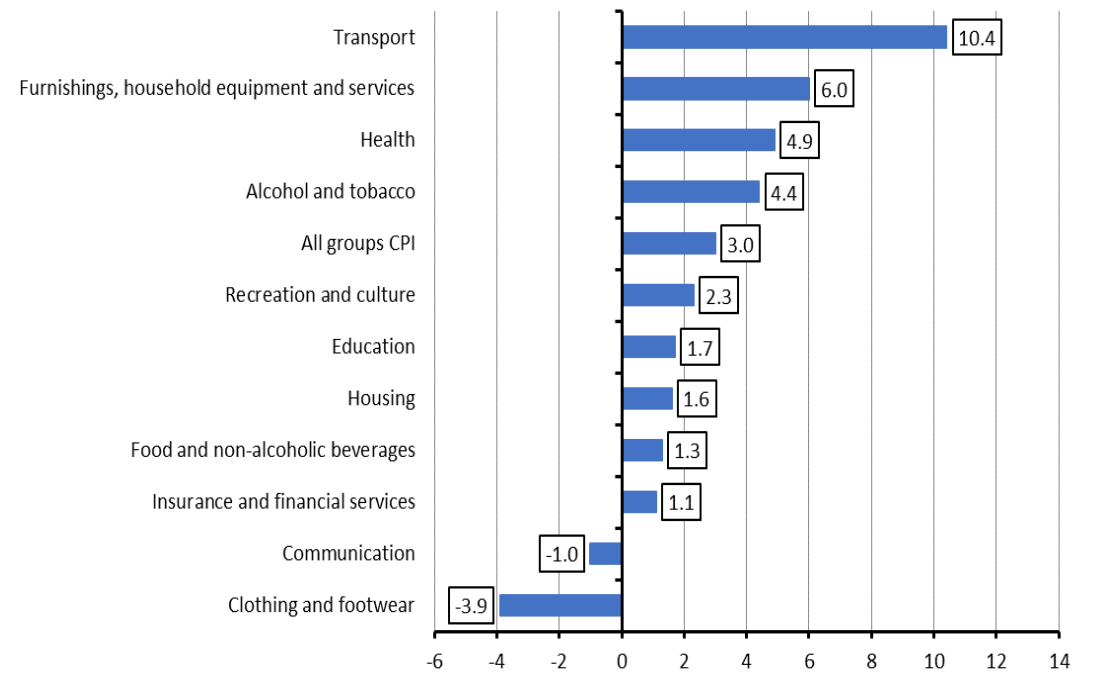
Per cent change over previous quarter, nsa



Source: Bloomberg and ABS

Australia: CPI by main groups, September quarter, 2021

Per cent change over previous year, nsa



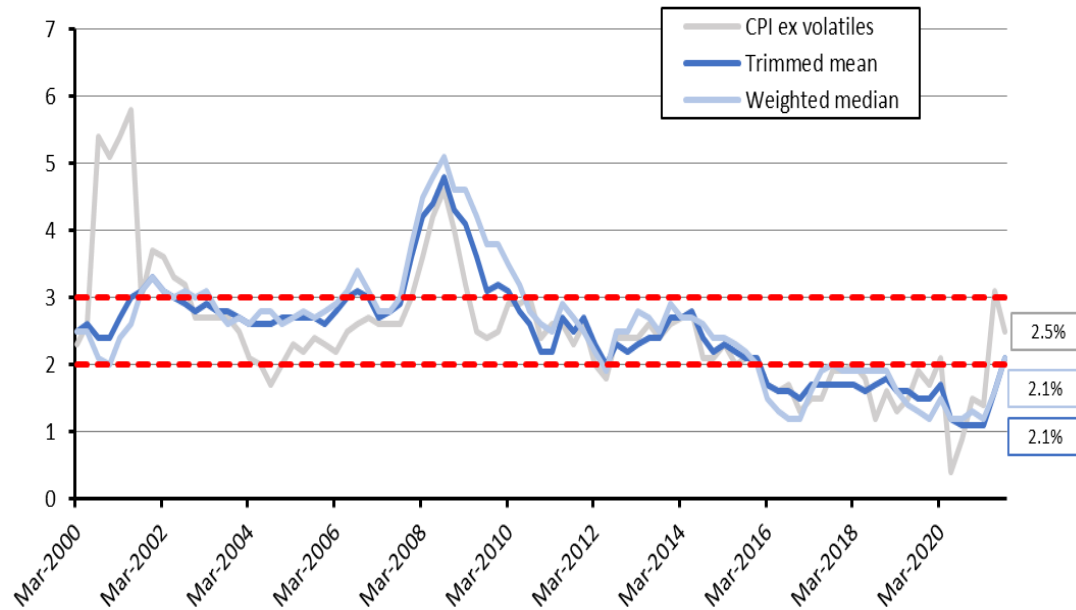
Source: Bloomberg and ABS

Underlying Inflation

Underlying inflation – as measured by the trimmed mean and weighted median – surprised on the upside in Q3:2021. The annual rate of trimmed mean inflation returned to the RBA's target band for the first time since 2015.

Australia: Measures of underlying inflation

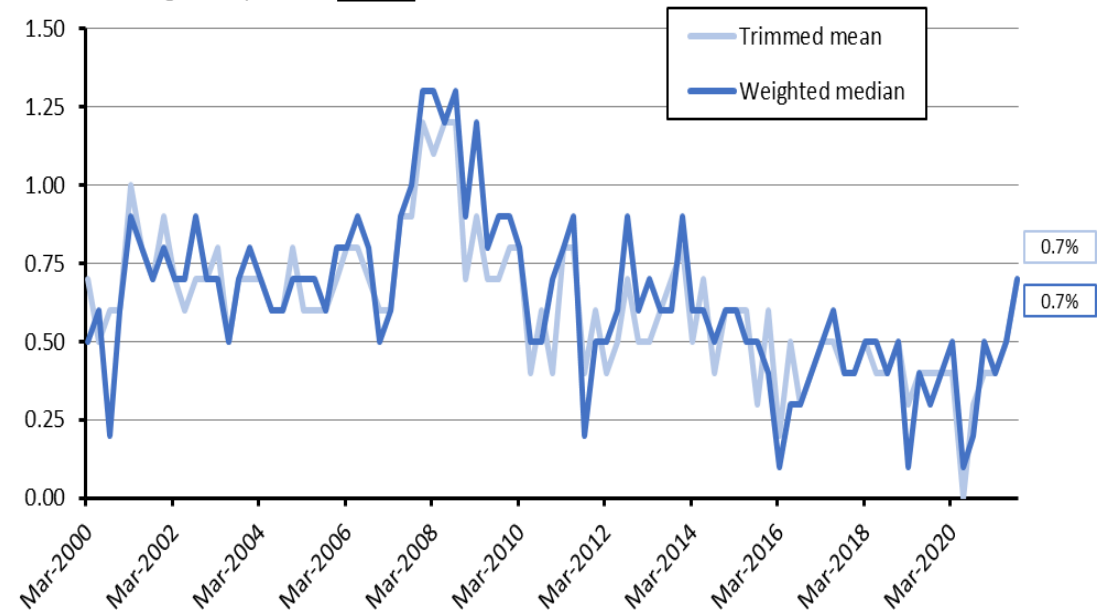
Per cent change over previous year, sa except CPI ex volatiles, nsa



Source: Bloomberg and ABS. The CPI ex volatiles excludes fruit, vegetables and fuel. The trimmed mean and weighted median are calculated by ordering all 87 expenditure classes by their quarterly, seasonally-adjusted price change. The trimmed mean is then the average rate of inflation of the middle 70 per cent of items after 'trimming' away the 15 per cent of items with the largest price rises and the 15 per cent with the largest price falls. The weighted median is the inflation rate of the item in the middle of the CPI price changes, at the 50th percentile. **Data to September quarter 2021.**

Australia: Measures of underlying inflation

Per cent change over previous quarter, sa



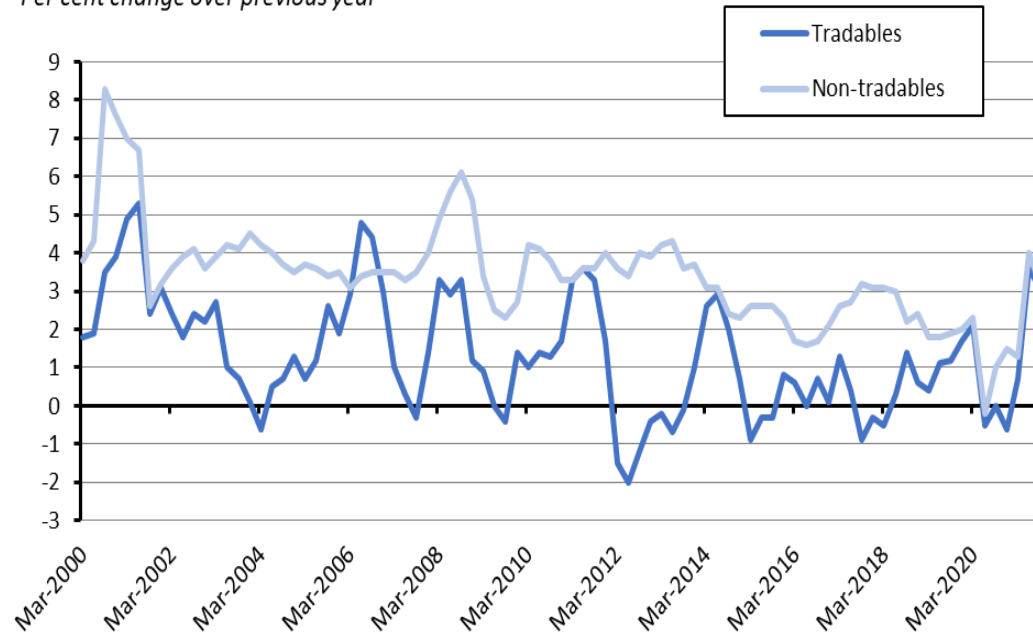
Source: Bloomberg and ABS. The trimmed mean and weighted median are calculated by ordering all 87 expenditure classes by their quarterly, seasonally-adjusted price change. The trimmed mean is then the average rate of inflation of the middle 70 per cent of items after 'trimming' away the 15 per cent of items with the largest price rises and the 15 per cent with the largest price falls. The weighted median is the inflation rate of the item in the middle of the CPI price changes, at the 50th percentile. **Data to September quarter 2021.**

Selected analytical measures of inflation

Tradables inflation was 3.1% in annual terms in Q3:2021 and 0.8% over the quarter, largely reflecting a strong rise in the price of automotive fuel. Non-tradables inflation was 3.2% over the year and 0.9% over the quarter, powered by new dwelling purchases by owner occupiers and restaurant meals.

Australia: Tradables and non-tradables inflation

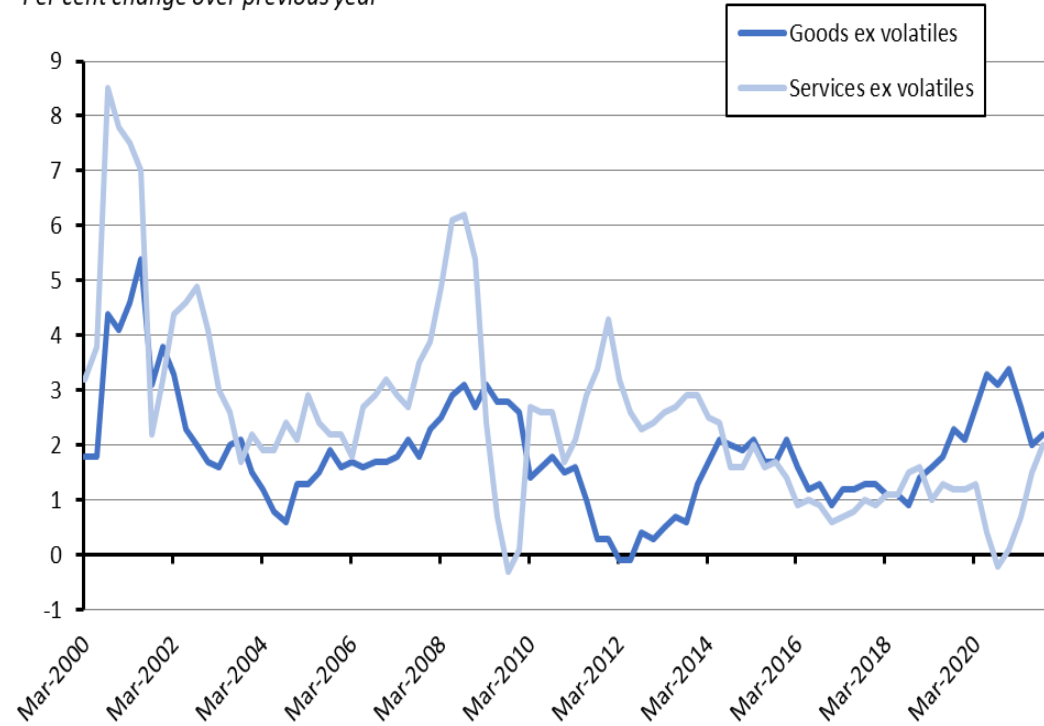
Per cent change over previous year



Source: Bloomberg and ABS. The tradables component of the CPI comprises all products whose price change is largely determined on the world market. A product is defined as tradable if a significant share of its domestic output is exported or if a significant share of its demand for domestic consumption is imported. The non-tradables component comprises the remaining products. Products are also defined as non-tradables where domestic taxes or subsidies make a significant contribution to the price paid by consumers. **Data to September quarter 2021.**

Australia: Goods and services inflation, ex volatiles

Per cent change over previous year



Source: Bloomberg and ABS. In addition to excluding fruit, vegetables and fuel these series also exclude utilities, property rates and charges, child care, health, urban transport fares, postal and education. **Data to September quarter 2021.**

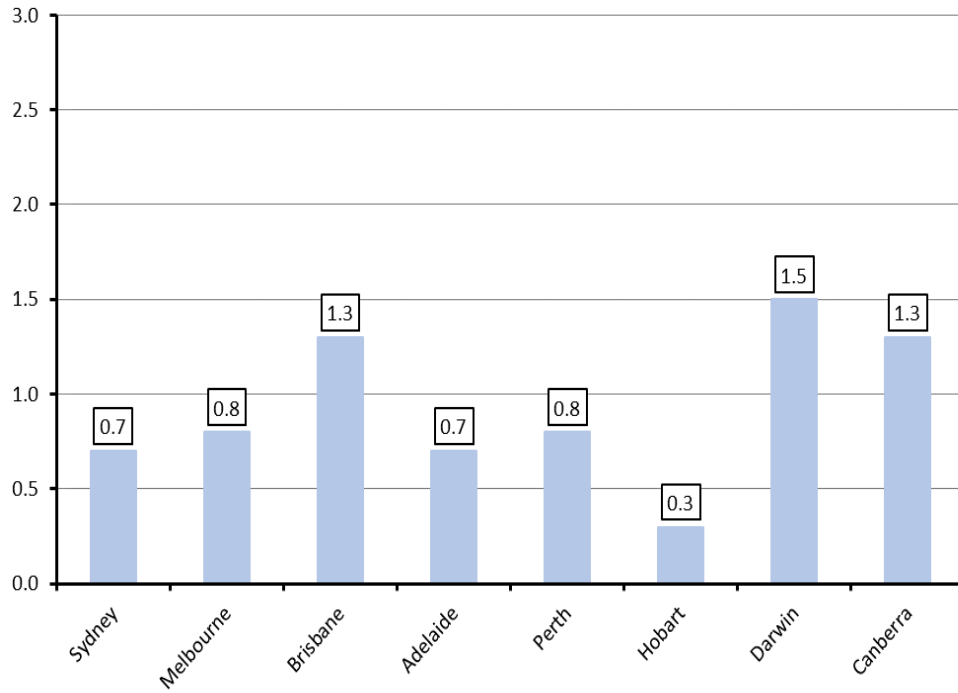
THREE

CPI by capital city

Inflation by capital city

Australia: CPI by capital city, September 2021 quarter

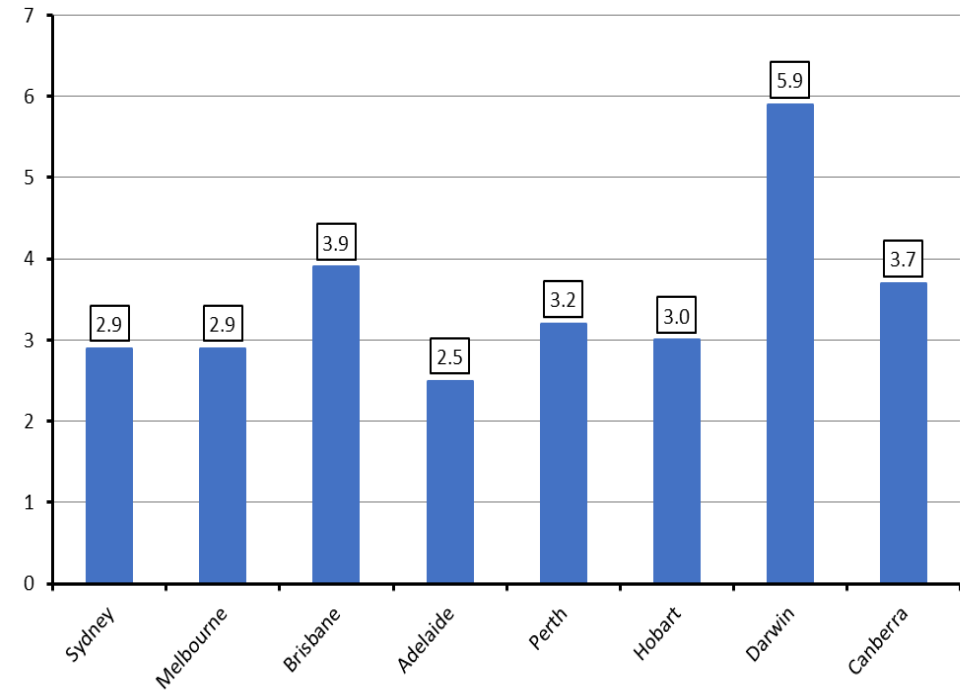
Per cent change over previous quarter



Source: Bloomberg and ABS

Australia: CPI by capital city, September 2021 quarter

Per cent change over previous year



Source: Bloomberg and ABS

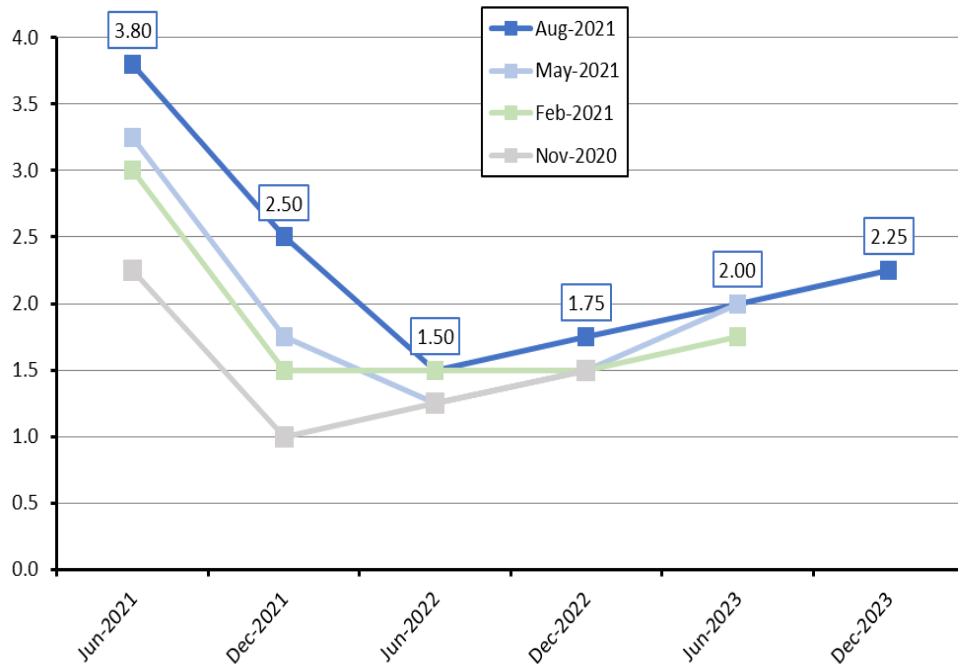
FOUR

Inflation expectations

RBA inflation forecasts

Australia: RBA forecasts for headline CPI

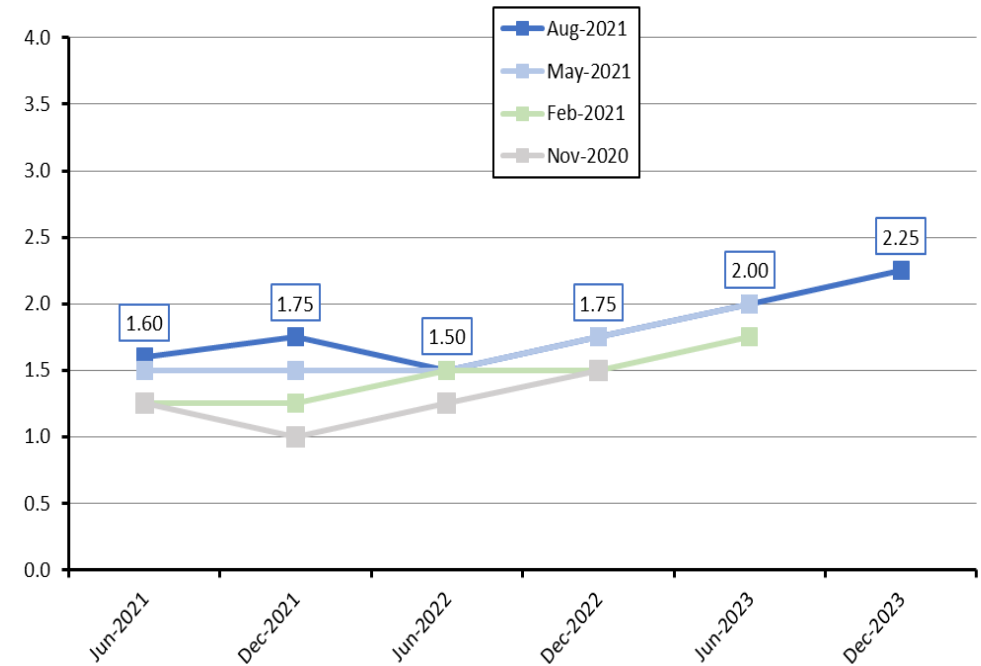
Per cent change, year-ended



Source: RBA Statement on Monetary Policy (SOMP), various. Labels for August 2021 SOMP only.

Australia: RBA forecasts for trimmed mean CPI

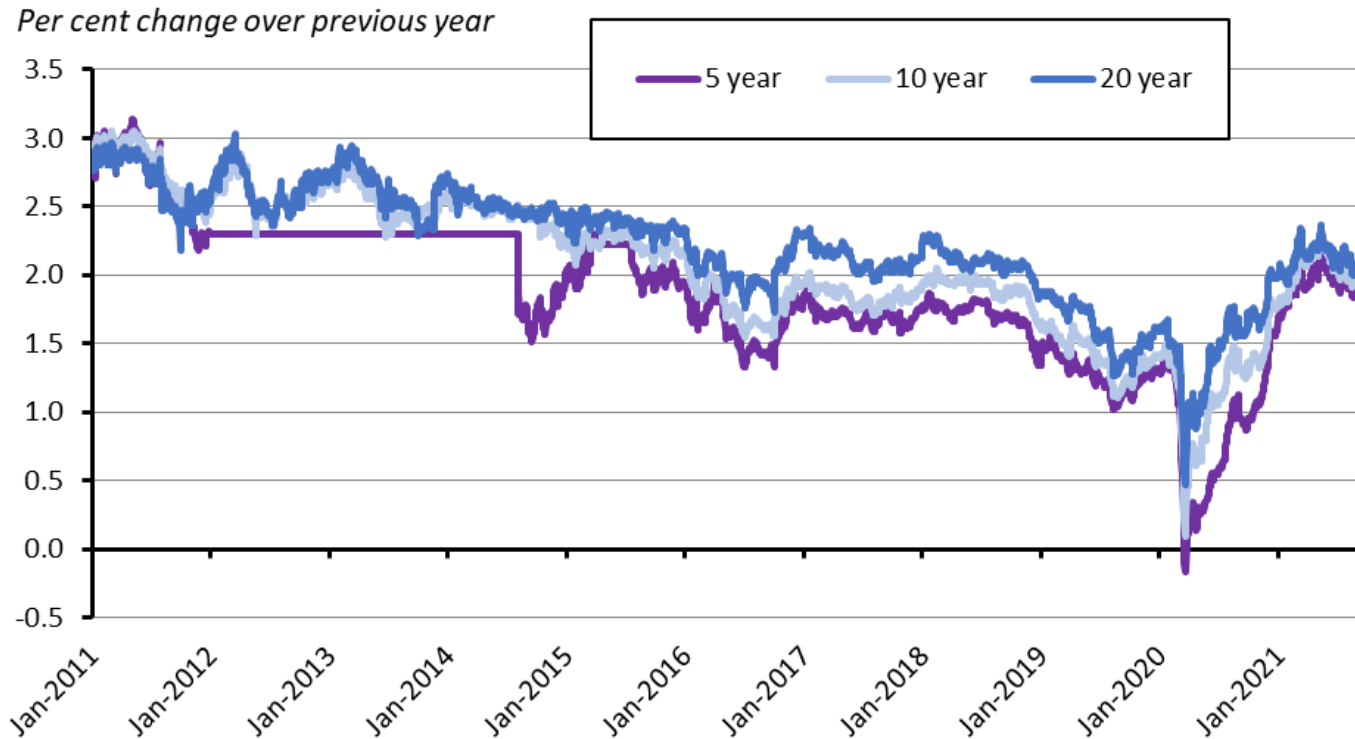
Per cent change, year-ended



Source: RBA Statement on Monetary Policy (SOMP), various. Labels for August 2021 SOMP only.

Inflation expectations (1): Financial market indicators

Australia: Inflation expectations - Break-even rates

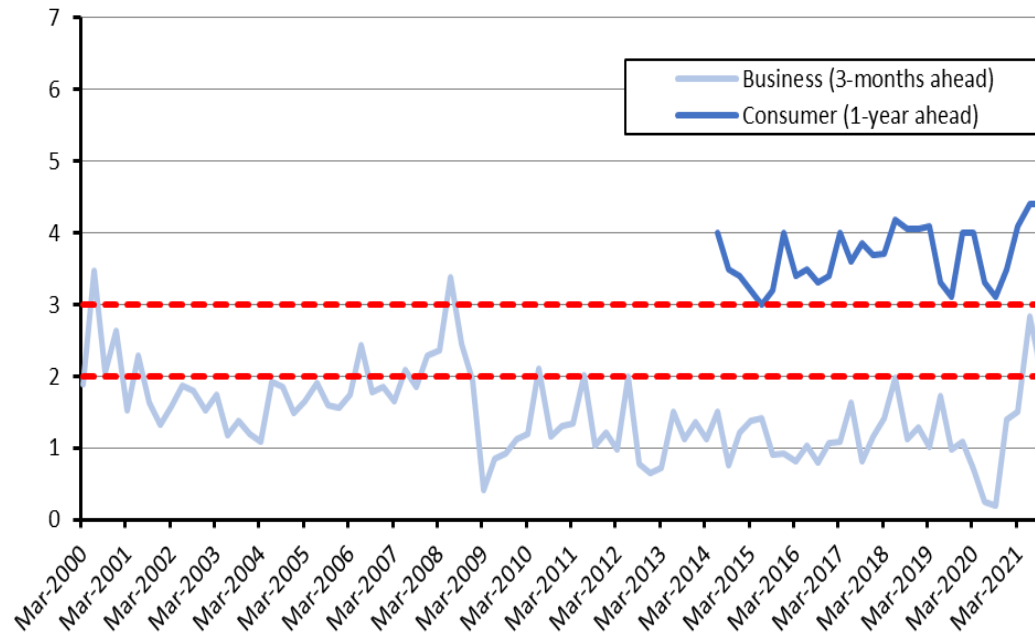


Source: Bloomberg. Break-even rates are calculated as the difference between the nominal and inflation-linked bond yields for government securities with the same maturity. For example, the break-even 10 year is given by the difference between the yields on nominal and inflation-indexed 10 year AGS. That returns the average rate of inflation over the next 10 years that equates the expected return on nominal 10 year AGS to the expected return on the inflation-indexed 10 year AGS. **Data to 27 October 2021.**

Inflation expectations (2): Businesses and Consumers

Australia: Business and consumer inflation expectations

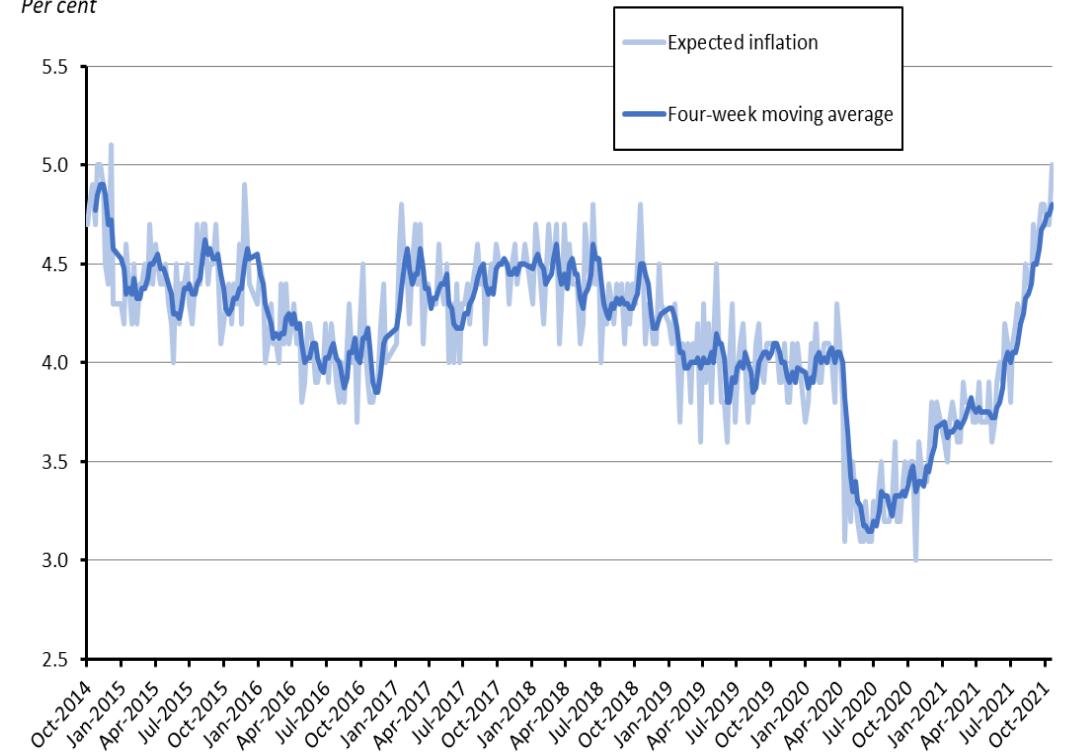
Per cent change over previous year



Source: RBA. Business expectations are from NAB quarterly survey and report respondents' expectations for increase in final product prices over next three months; Consumer expectations are the Melbourne Institute Survey of Consumer Inflationary Expectations trimmed mean expected inflation rate for the year ahead - available data start from Q2: 2014. **Data to September quarter 2021.**

Australia: ANZ Roy Morgan inflation expectations (two-year ahead)

Per cent

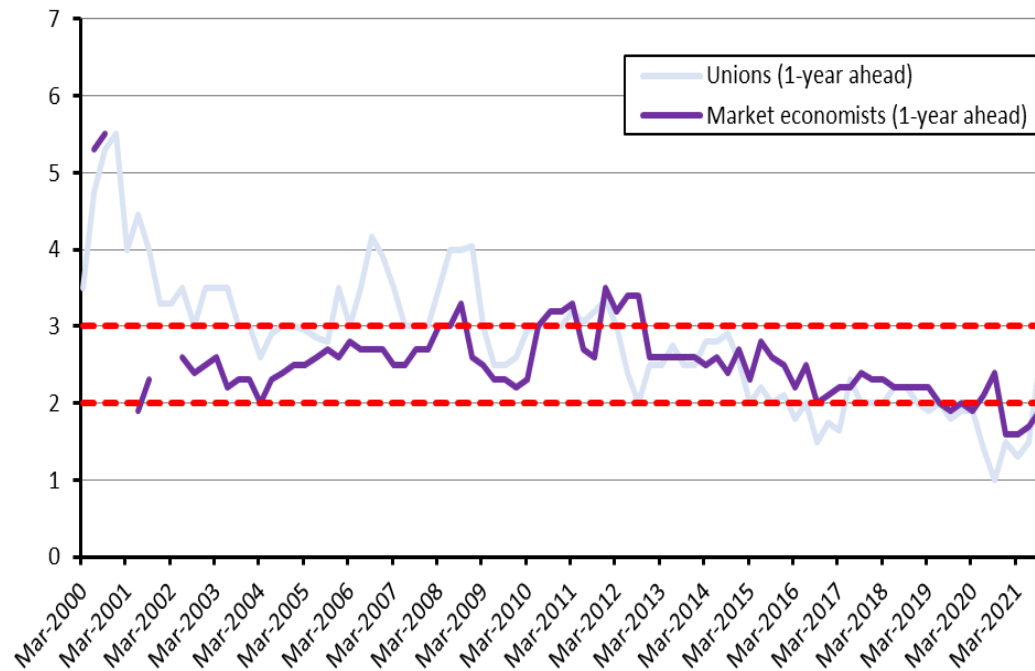


Source: Roy Morgan. **Data to 24 October 2021.**

Inflation expectations (3): One-year and two-year ahead

Australia: Inflation expectations, one-year ahead

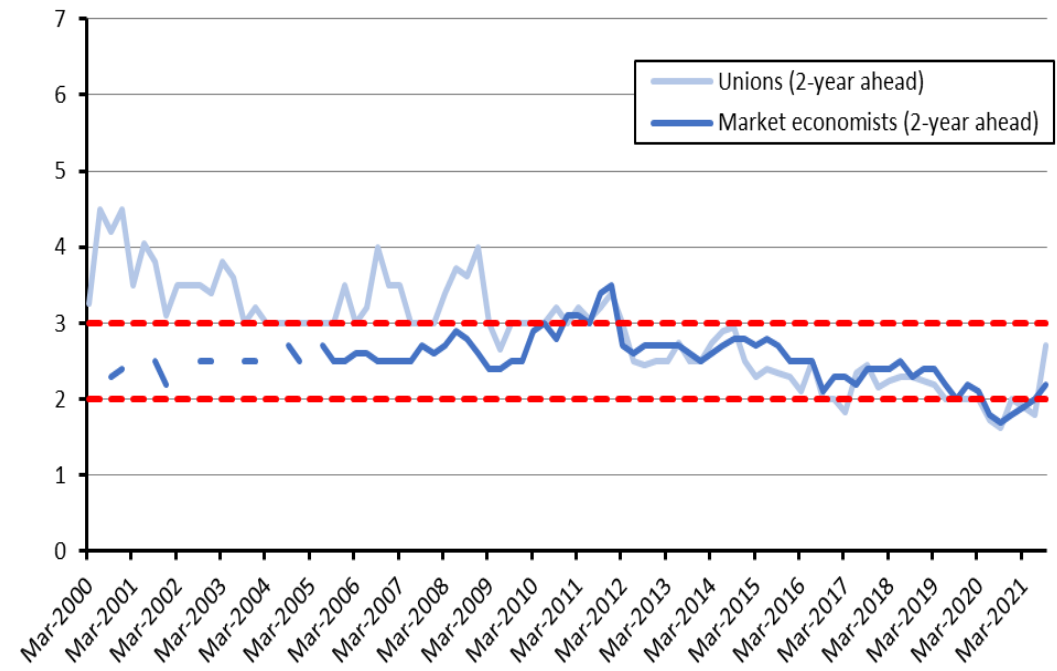
Per cent change over previous year



Source: RBA. Union officials expectations are median inflation expectations measured in ACTU survey; Market economist expectations are median inflation expectations measured by RBA survey. **Data to September quarter 2021.**

Australia: Inflation expectations, two-year ahead

Per cent change over previous year



Source: RBA. Union officials expectations are median inflation expectations measured in ACTU survey; Market economist expectations are median inflation expectations measured by RBA survey. **Data to September quarter 2021.**

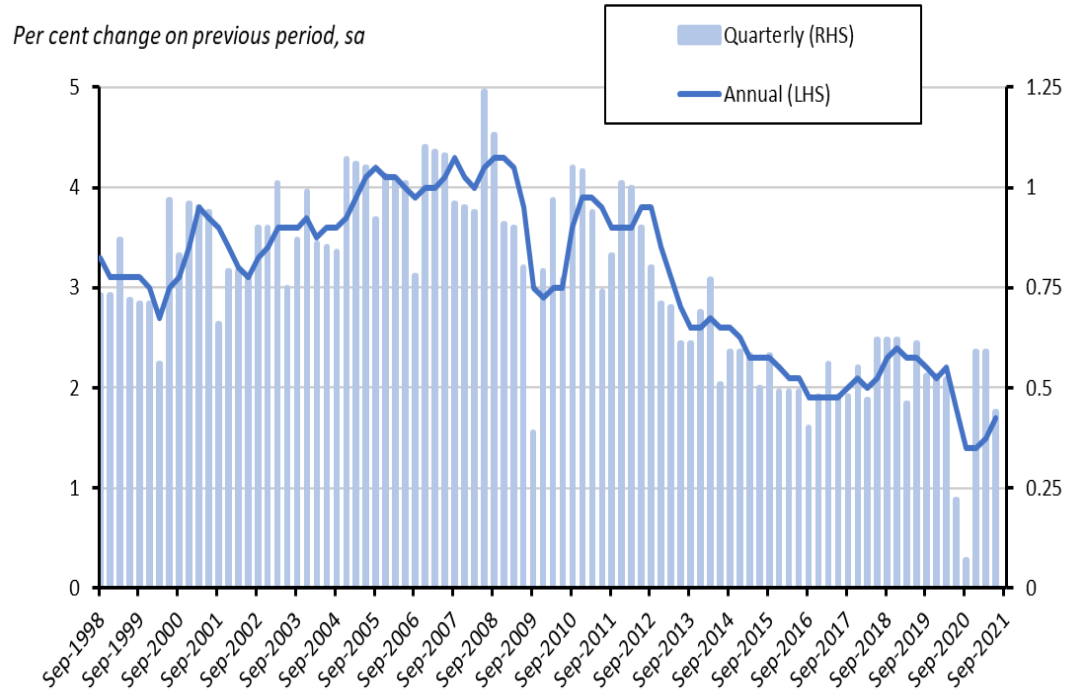
FIVE

Inflation and the labour market

Wage growth

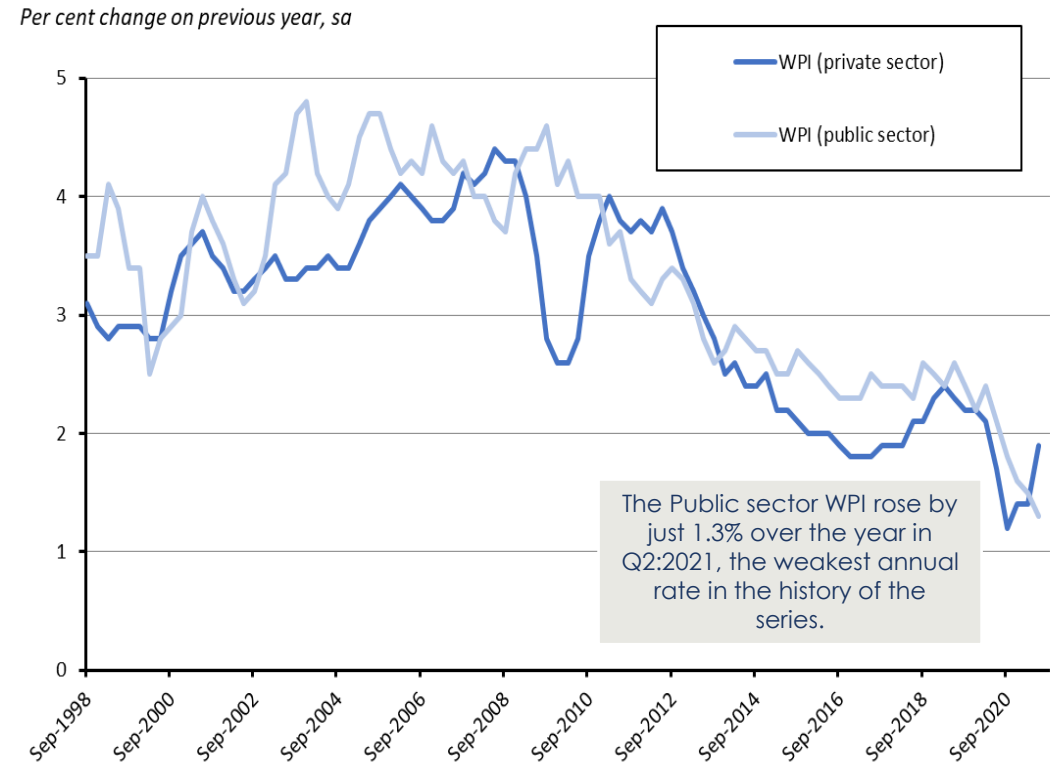
The WPI rose 0.4% over the quarter and 1.7% over the year in Q2:2021. Note that the annual rate was boosted by base effects from a very weak Q2:2020.

Australia: Wage Price Index (WPI)



Source: Bloomberg and ABS. WPIs measure changes in the price of wages and salaries unaffected by changes in the quality of work (different tasks or responsibilities), quantity of work (number of hours worked) performed or by changes in the characteristics (age, experience) or location of the worker, or by changes in labour market composition. The series measure total hourly rates of pay, capturing changes in wage and salary rates plus overtime rates. **Data to June quarter 2021.**

Australia: Wage Price Index

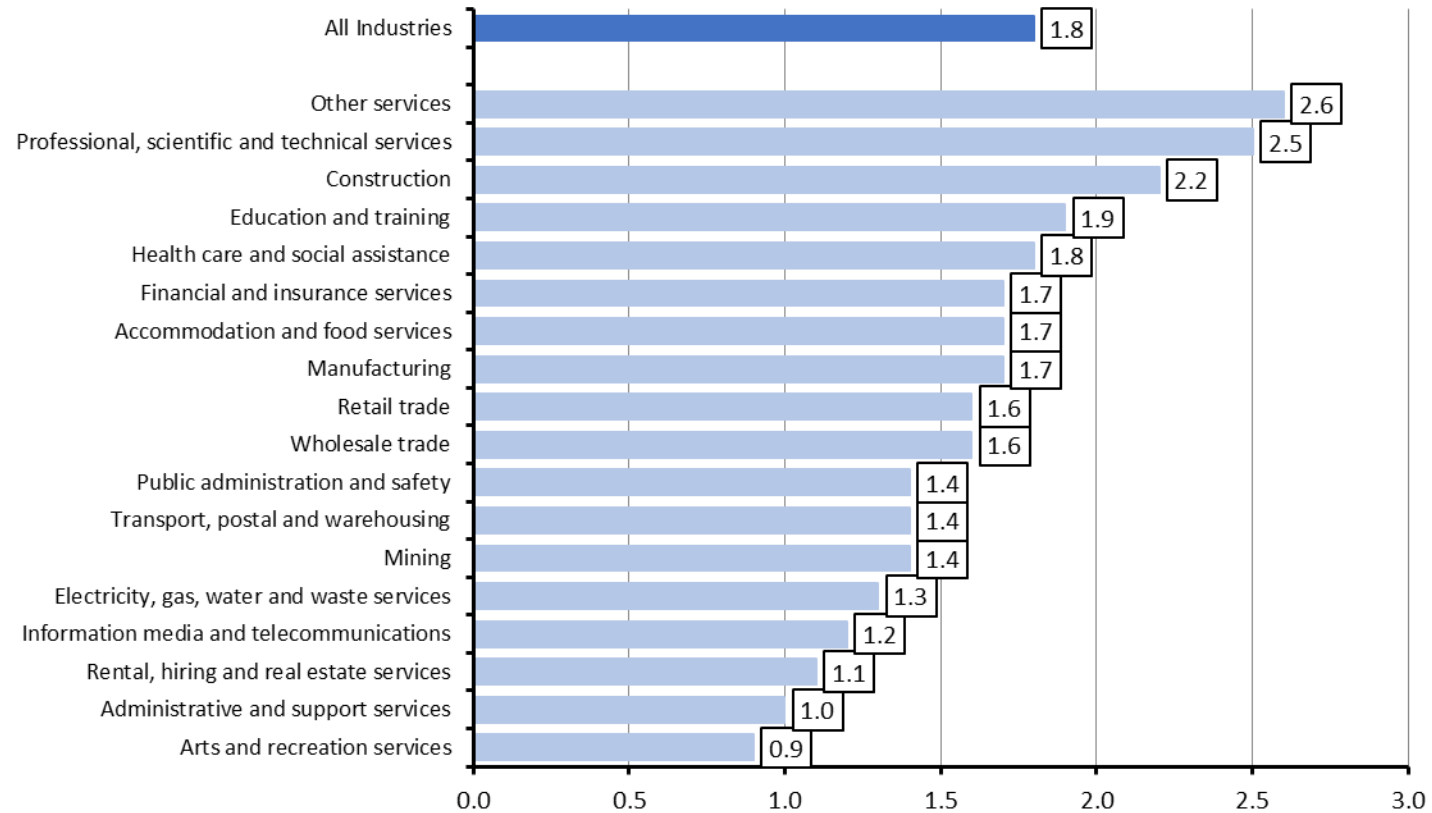


Source: Bloomberg and ABS. **Data to June quarter 2021.**

Wage growth by Industry

Australia: Wage Price Index by Industry, June quarter 2021

Per cent change over previous year, nsa

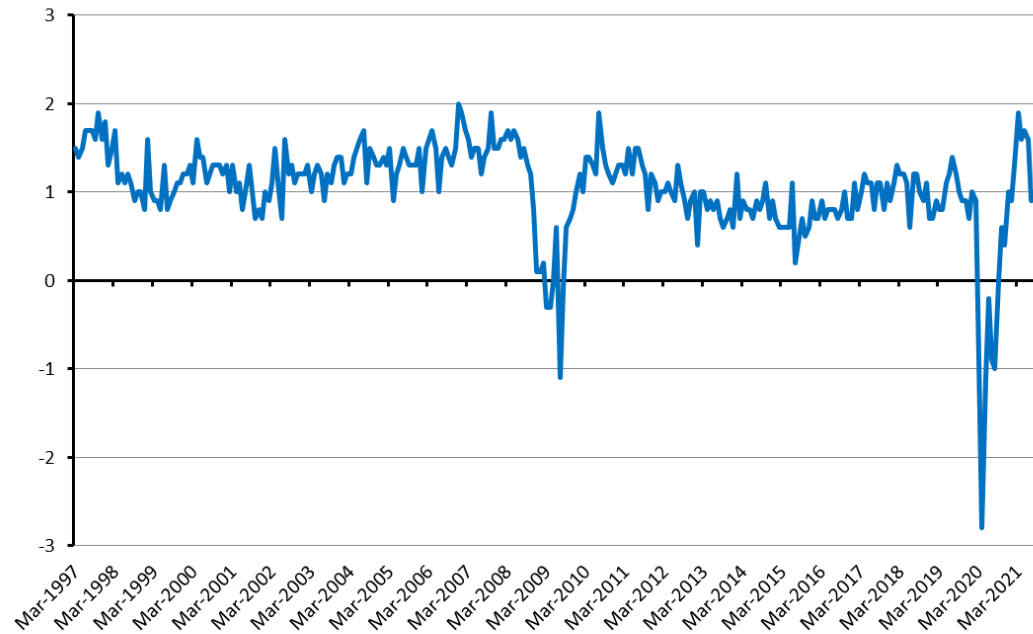


Source: ABS and Bloomberg.

NAB Business survey: Input costs

Australia: NAB Costs and prices: Labour costs

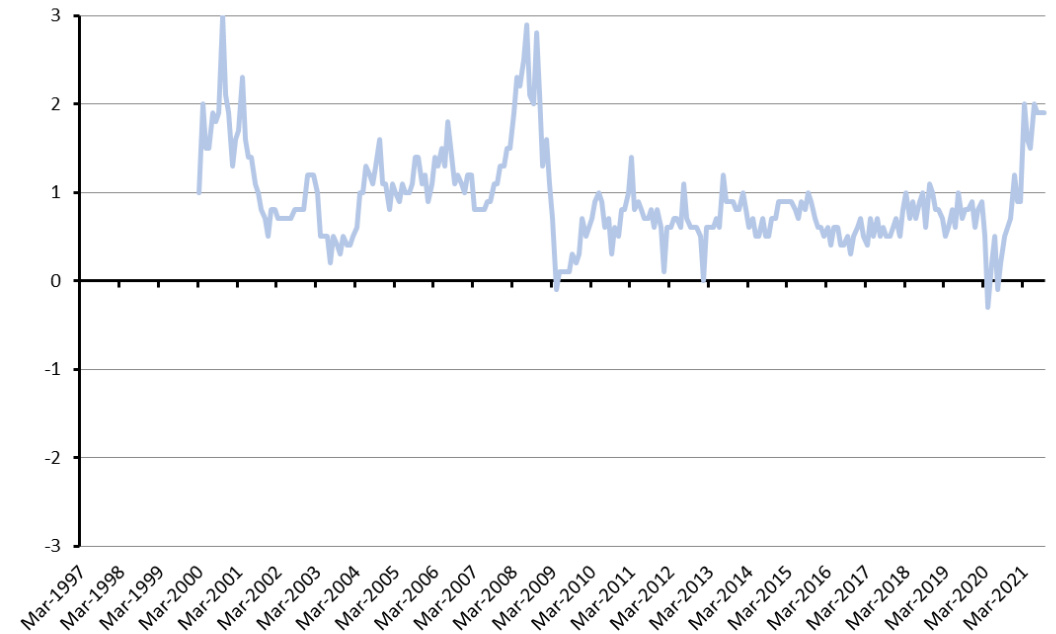
Per cent change at a quarterly rate, sa



Source: NAB and Bloomberg. Data to September 2021.

Australia: NAB Costs and prices: Purchase Costs

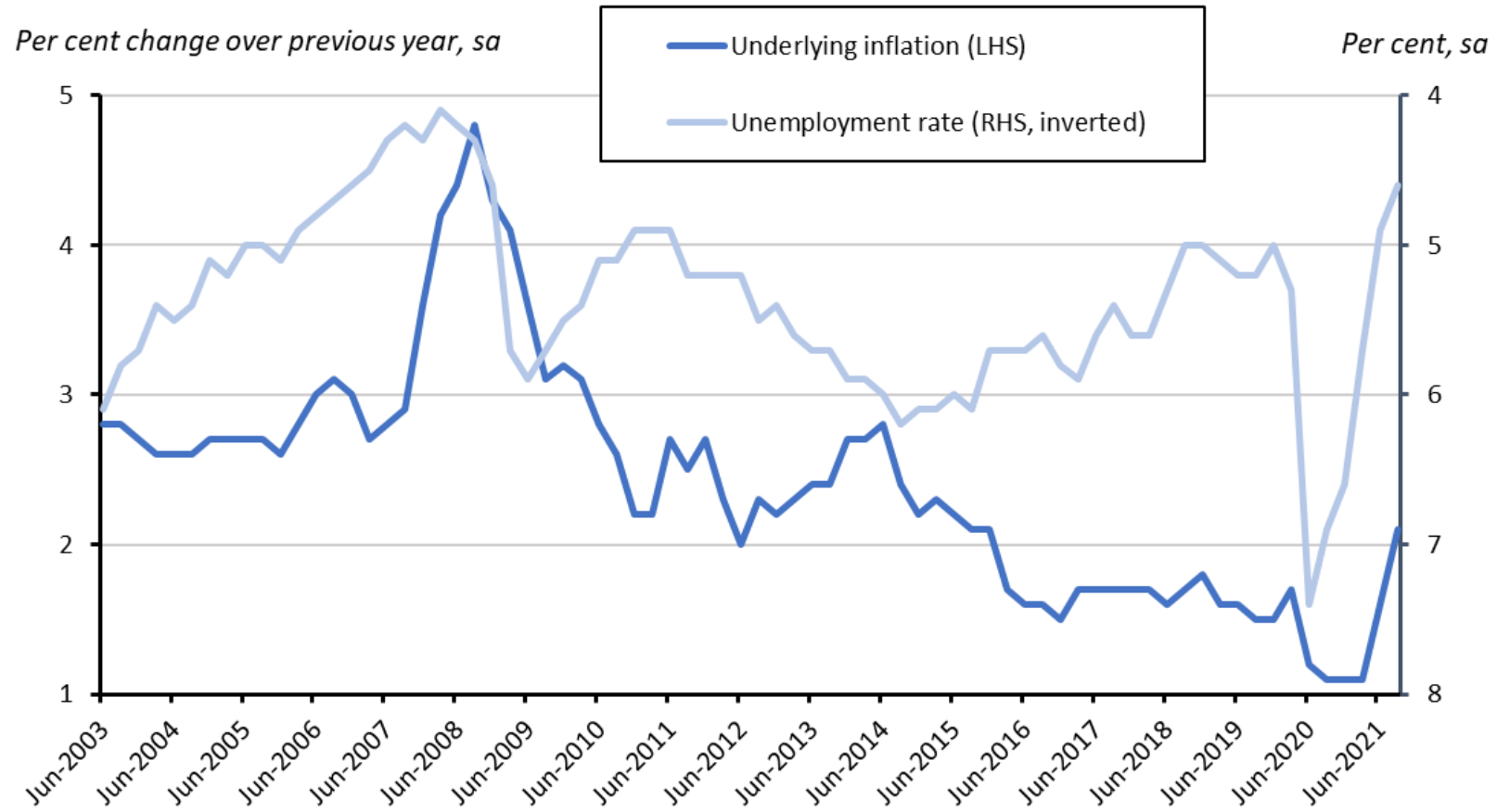
Per cent change at a quarterly rate, sa



Source: NAB and Bloomberg. Purchase costs data start March 2000. Data to September 2021.

Inflation and unemployment

Australia: Inflation and unemployment 2003:Q2 to 2021:Q3

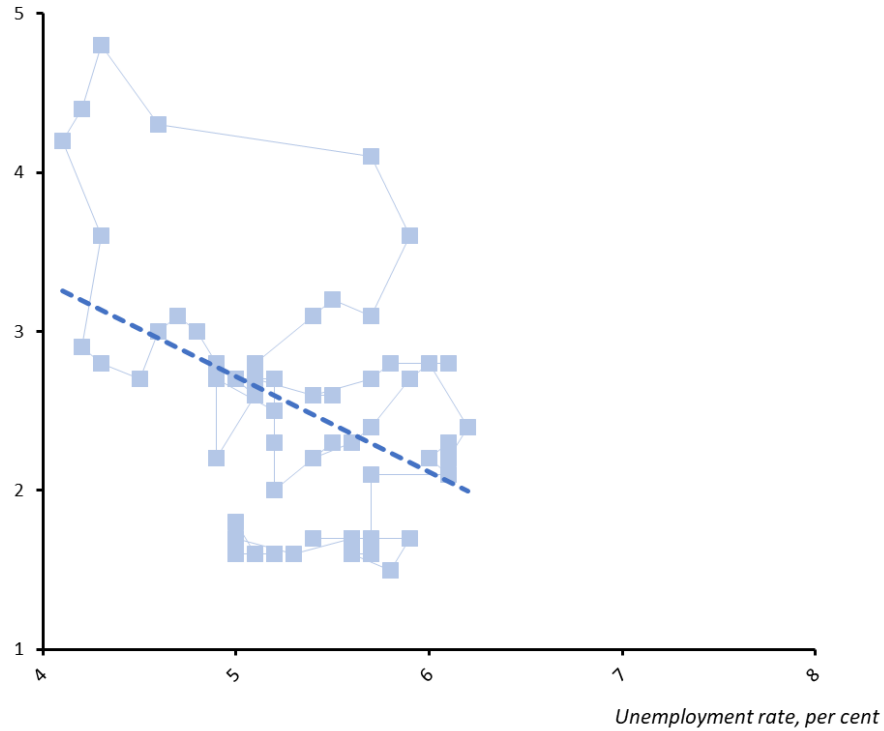


Source: Bloomberg and ABS. Underlying inflation is the trimmed mean CPI.

The Phillips Curve (1)

Australia: Inflation and unemployment, 2003:Q2 to 2019:Q4

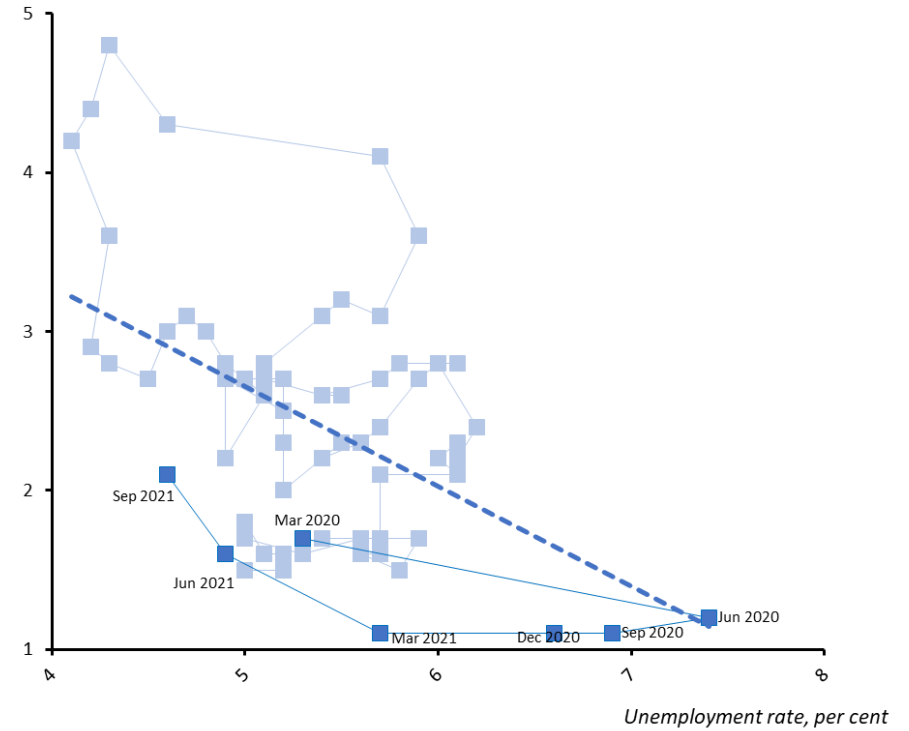
CPI trimmed mean, per cent change over year, sa



Source: Bloomberg, ABS and AICD.

Australia: Inflation and unemployment, 2003:Q2 to 2021:Q3

CPI trimmed mean, per cent change over year, sa

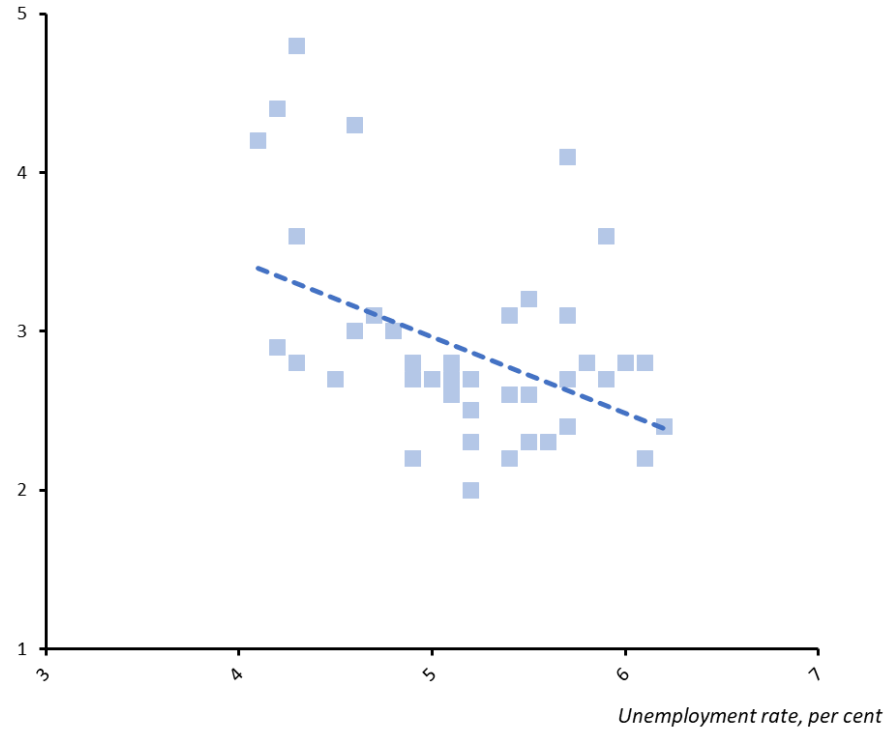


Source: Bloomberg, ABS and AICD.

The Phillips Curve (2): Pre-COVID breakdown after 2015?

Australia: Inflation and unemployment, 2003:Q2 to 2014:Q4

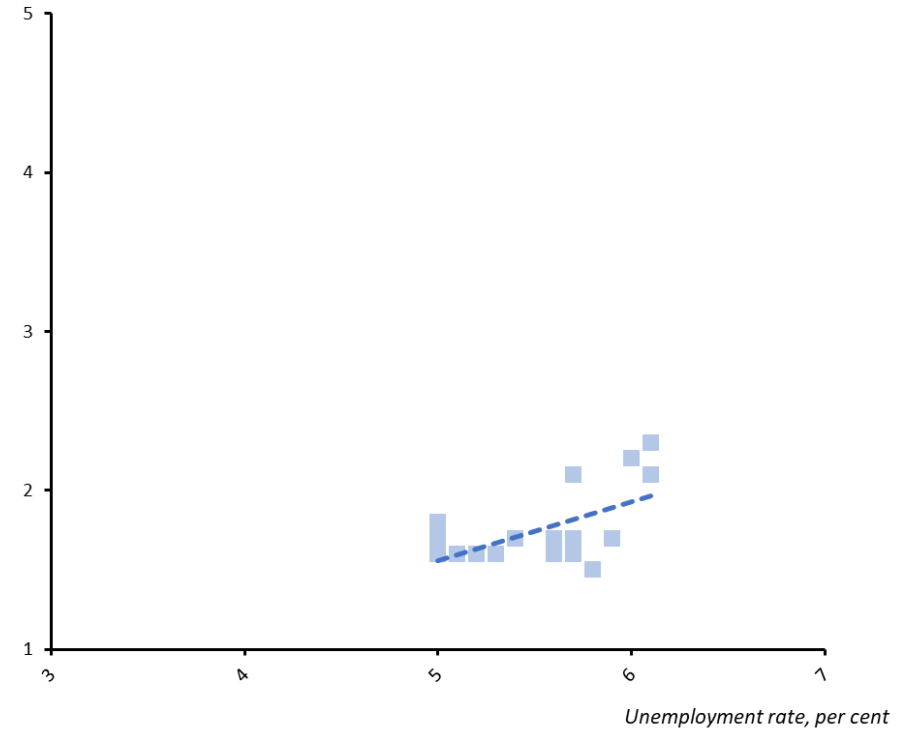
CPI trimmed mean, per cent change over year, sa



Source: Bloomberg, ABS and AICD.

Australia: Inflation and unemployment, 2015:Q1 to 2019:Q4

CPI trimmed mean, per cent change over year, sa

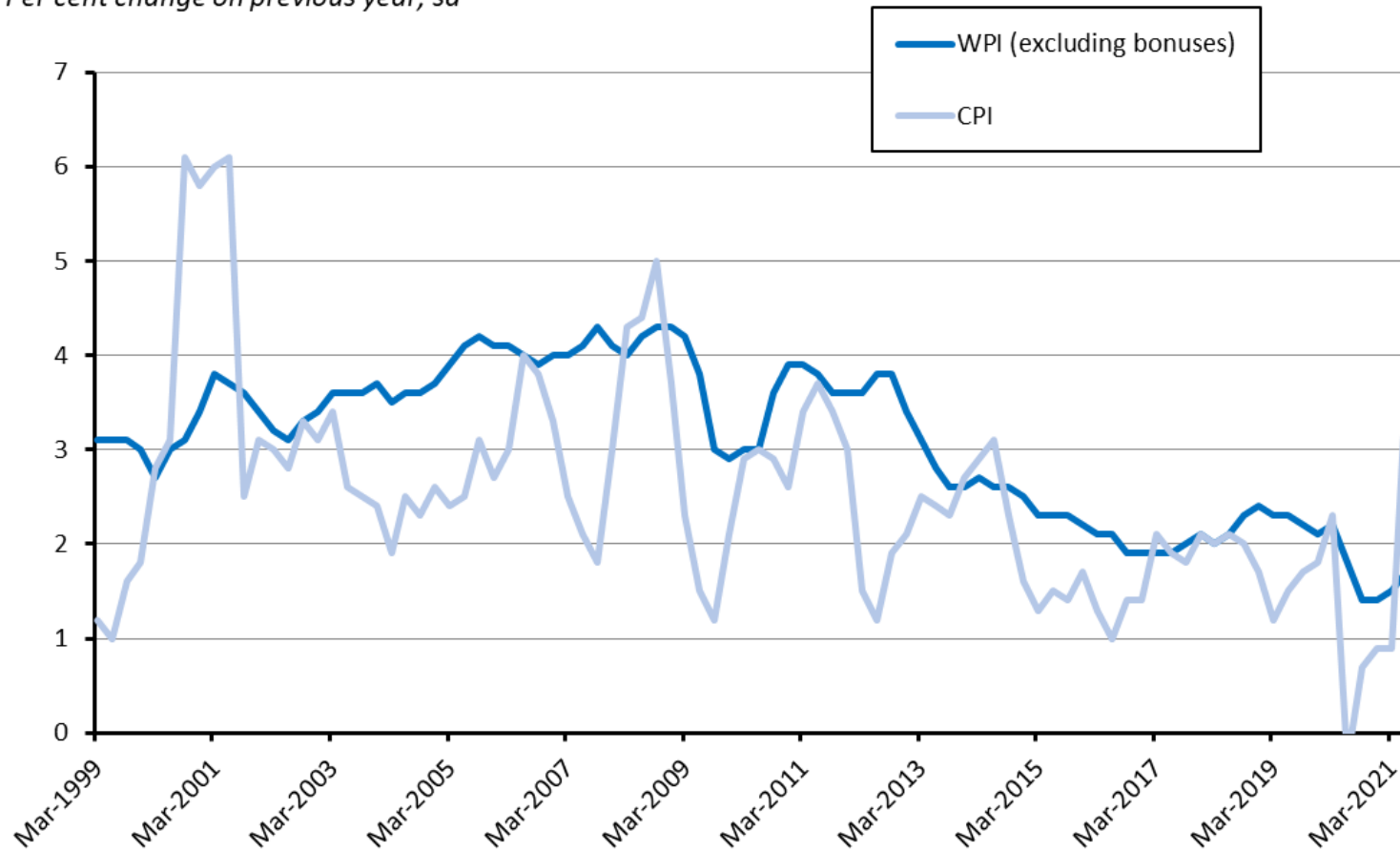


Source: Bloomberg, ABS and AICD.

Real wages

Australia: Implied real wage growth

Per cent change on previous year, sa



Source: Bloomberg and ABS. The WPI measures changes in the price of wages and salaries unaffected by changes in the quality of work (different tasks or responsibilities), quantity of work (number of hours worked) performed or by changes in the characteristics (age, experience) or location of the worker, or by changes in labour market composition. The series measures total hourly rates of pay, capturing changes in wage and salary rates plus overtime rates. **Data to June quarter 2021.**

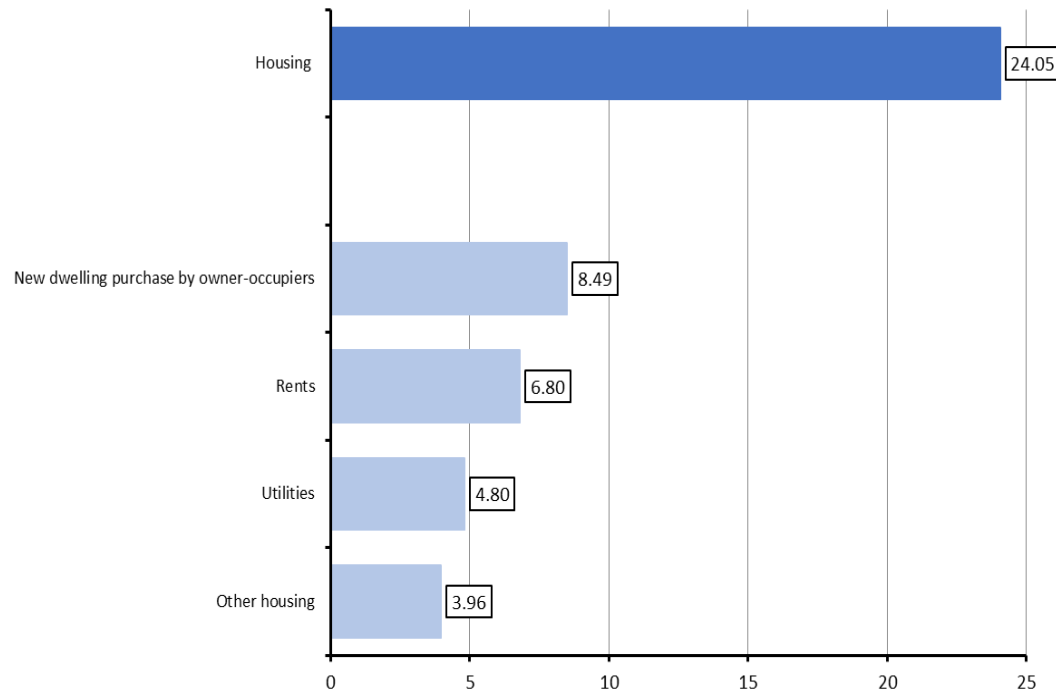
SIX

Housing and the CPI

Housing in the CPI

Australia: Housing in the Consumer Price Index (CPI)

Percentage contribution to the All groups CPI in September quarter 2020.



Source: ABS. Other housing comprises maintenance and repair of the dwelling and property rates and charges. Utilities comprises water and sewerage, electricity, and gas and other household fuels.

How is housing treated in the CPI?

With a weight of 24.1 per cent in the index, Housing is the largest component of household spending in the CPI. It comprises new dwelling purchases by owner-occupiers, rents, other housing (maintenance and repair costs plus property rates and charges), and utilities.

New dwelling purchase by owner-occupier measures the price of a new dwelling excluding the value of the land and is intended to capture the cost of adding to the housing stock in the form of newly built dwellings and major renovations.

Rents captures payments made by households to landlords as rent.

Several key items are excluded from the CPI. (1) Purchases of *established* dwellings because they are treated as transfers of existing assets. (2) Land as it is treated as an investment, not as consumption. (3) The cost of servicing a mortgage has been excluded from the CPI since 1998.

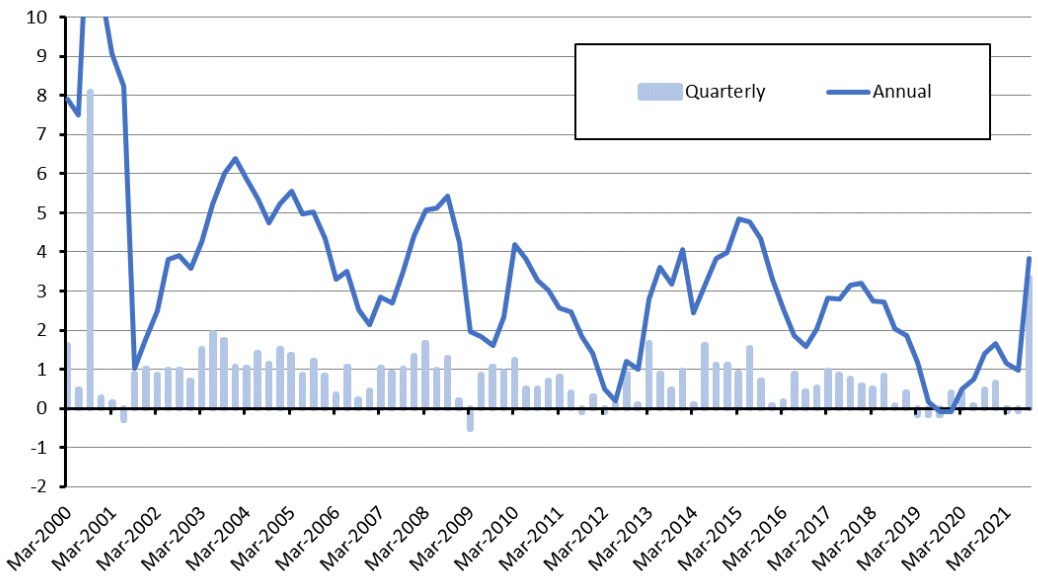
That means that changes in the price of established dwellings, changes in the price of land, and changes in the cost of servicing mortgage debt do not have a direct influence on CPI inflation.

Cost of new dwellings and rent inflation

Australia: New dwelling price inflation (CPI series)

Per cent change over previous period, sa

New dwelling price inflation rose 3.3% in quarterly terms in Q3:2021, the largest increase since Q3:2000, reflecting rising construction costs.

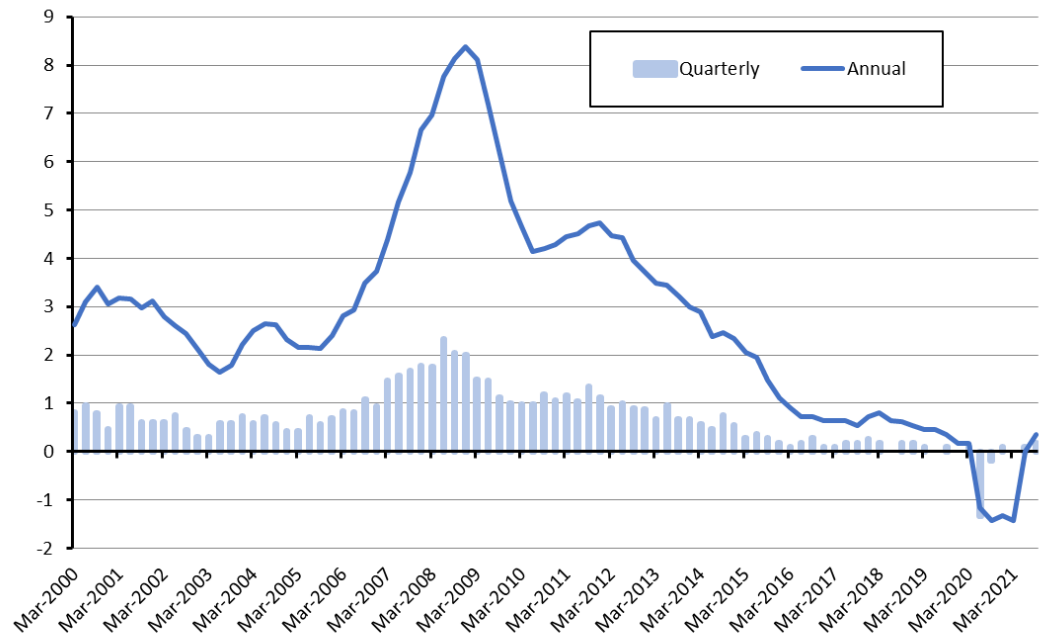


Source: ABS **Data to September quarter 2021**. Note that HomeBuilder grants and similar state government programs are treated by the ABS as price reductions and although the programs have closed, grants will continue to be paid out and therefore impact new dwelling price inflation through 2022. Note also that the spike in the September quarter 2020 is associated with the introduction of the GST and removal of wholesale taxes.

Australia: Housing rent inflation (CPI series)

Per cent change over previous period, sa

While national rents edged up 0.2% over the September 2021 quarter, this disguised a two-speed rental market, with rents for Sydney and Melbourne falling while rents rose across the other capital cities.



Source: ABS **Data to September quarter 2021**.

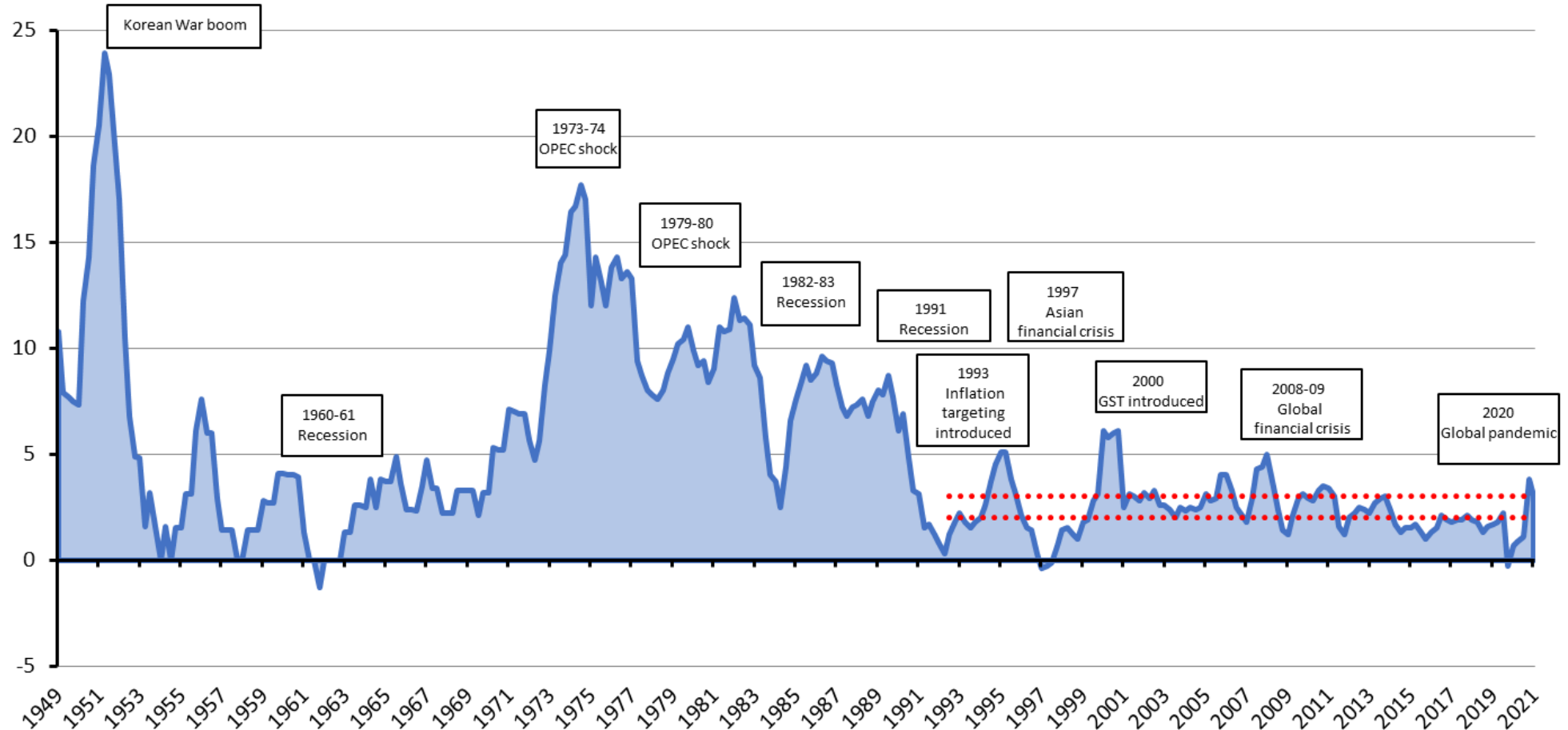
SEVEN

Inflation in the long run

Consumer Price Inflation since 1949

Australia: Annual CPI changes

Per cent change over previous year

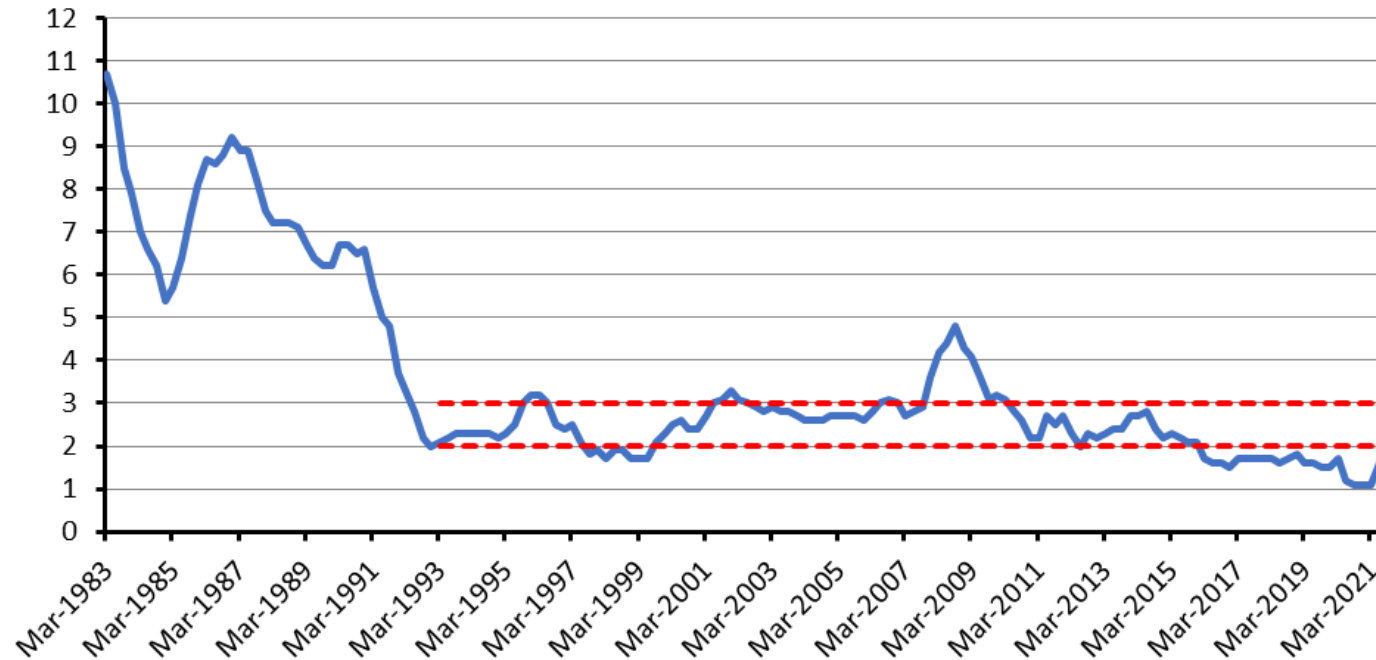


Source: Bloomberg and ABS. Inflation targeting starts in 1993.

Underlying inflation in the inflation targeting era

Australia: Underlying inflation (trimmed mean)

Per cent change over previous year



Source: Bloomberg and ABS. The trimmed mean is calculated by ordering all 87 expenditure classes by their quarterly, seasonally-adjusted price change. It is then the average rate of inflation of the middle 70 per cent of items after 'trimming' away the 15 per cent of items with the largest price rises and the 15 per cent with the largest price falls. Note that between 1993 and 1998 the RBA's inflation target was a measure of underlying inflation. From 1998 the target has been the CPI.

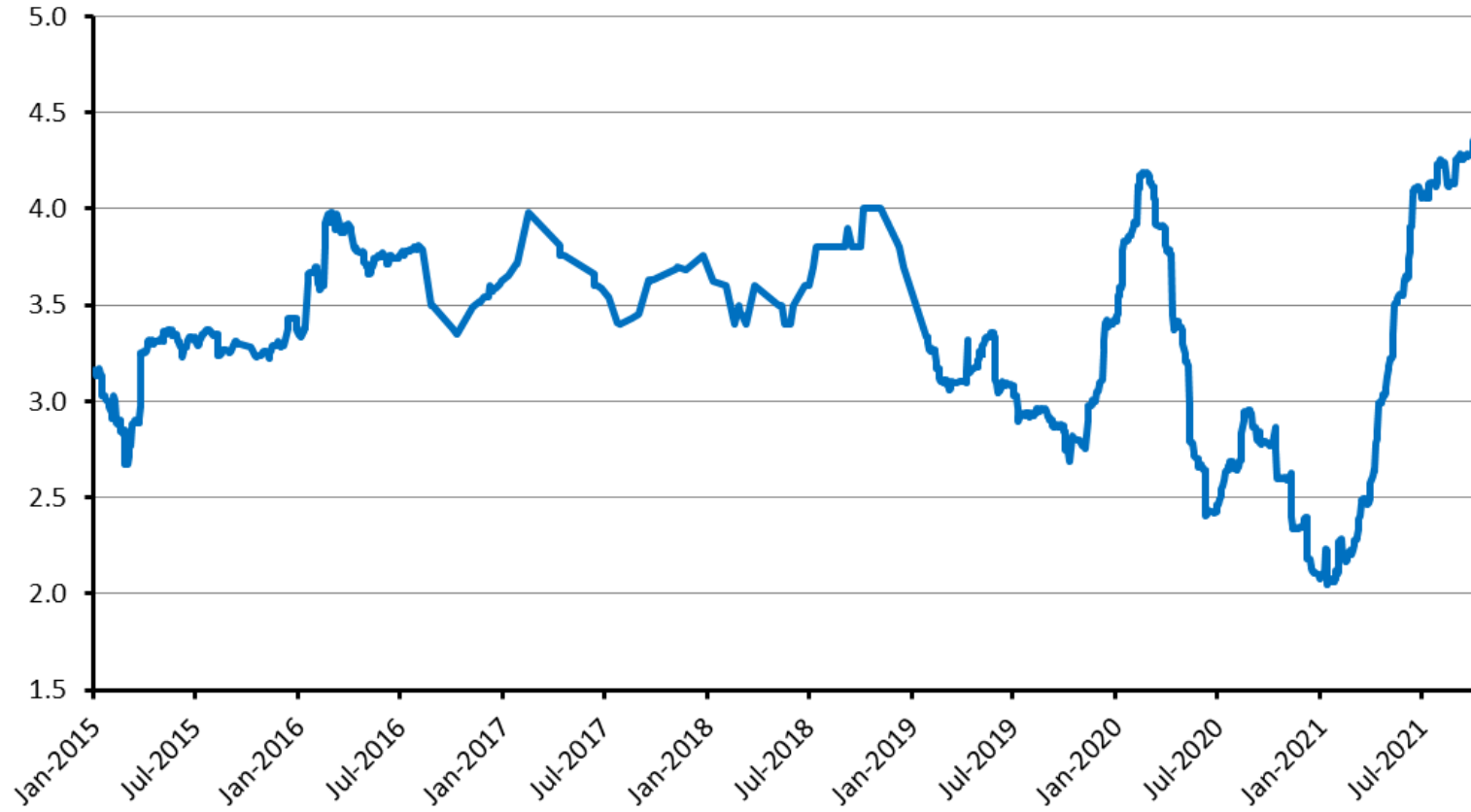
EIGHT

Inflation in the Global Economy

World Inflation – Daily tracker

Global: World inflation rate

Per cent change over year

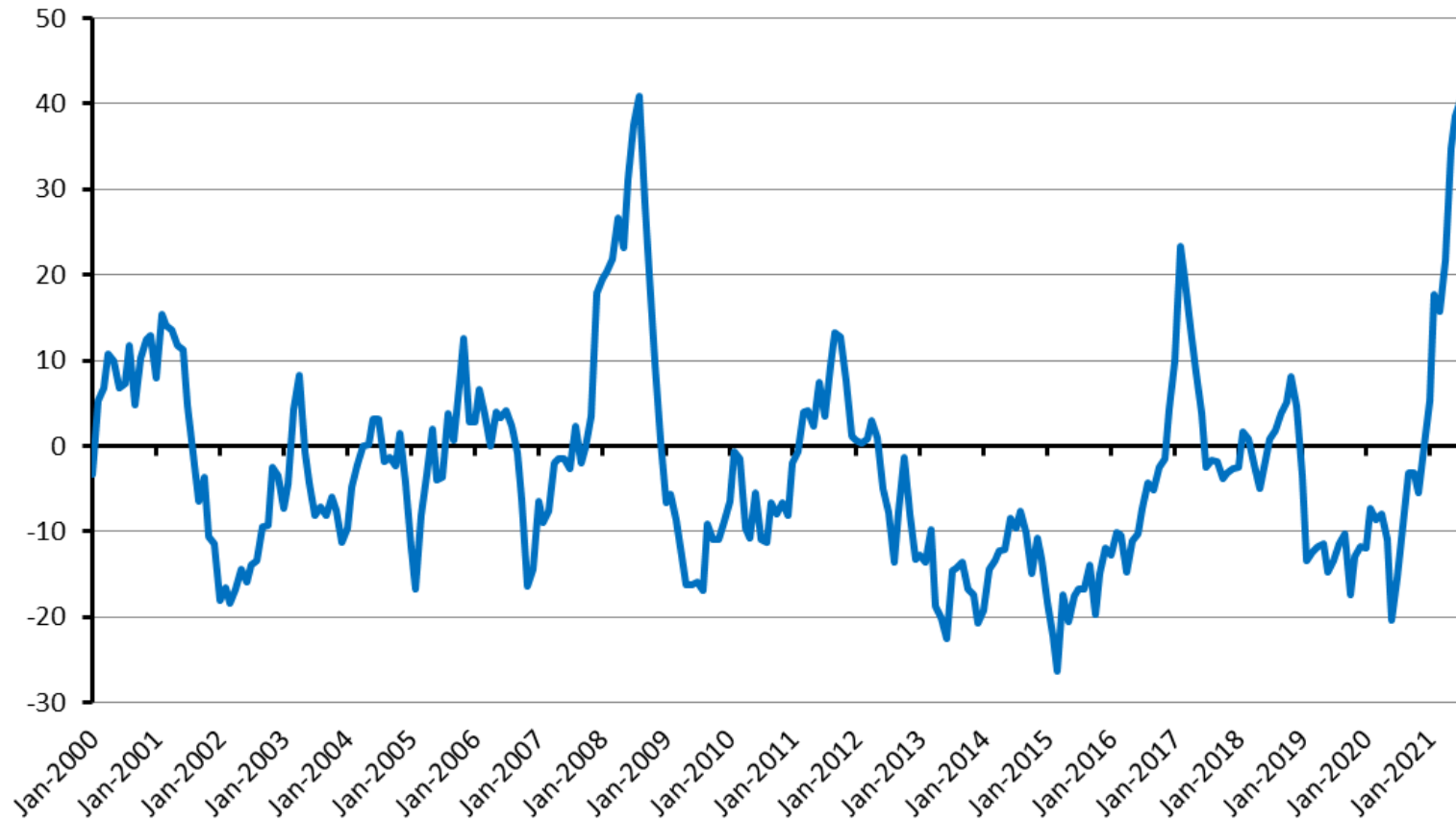


Source: Bloomberg. The world inflation rate here is derived from the latest year-on-year rate of consumer price inflation for each country, about 98 per cent of the world economy. The weights are based on IMF purchasing power parity (PPP) shares of world GDP. **Data to 26 October 2021.**

How is inflation tracking against expectations?

Global: Citi inflation surprise index

Per cent change over year

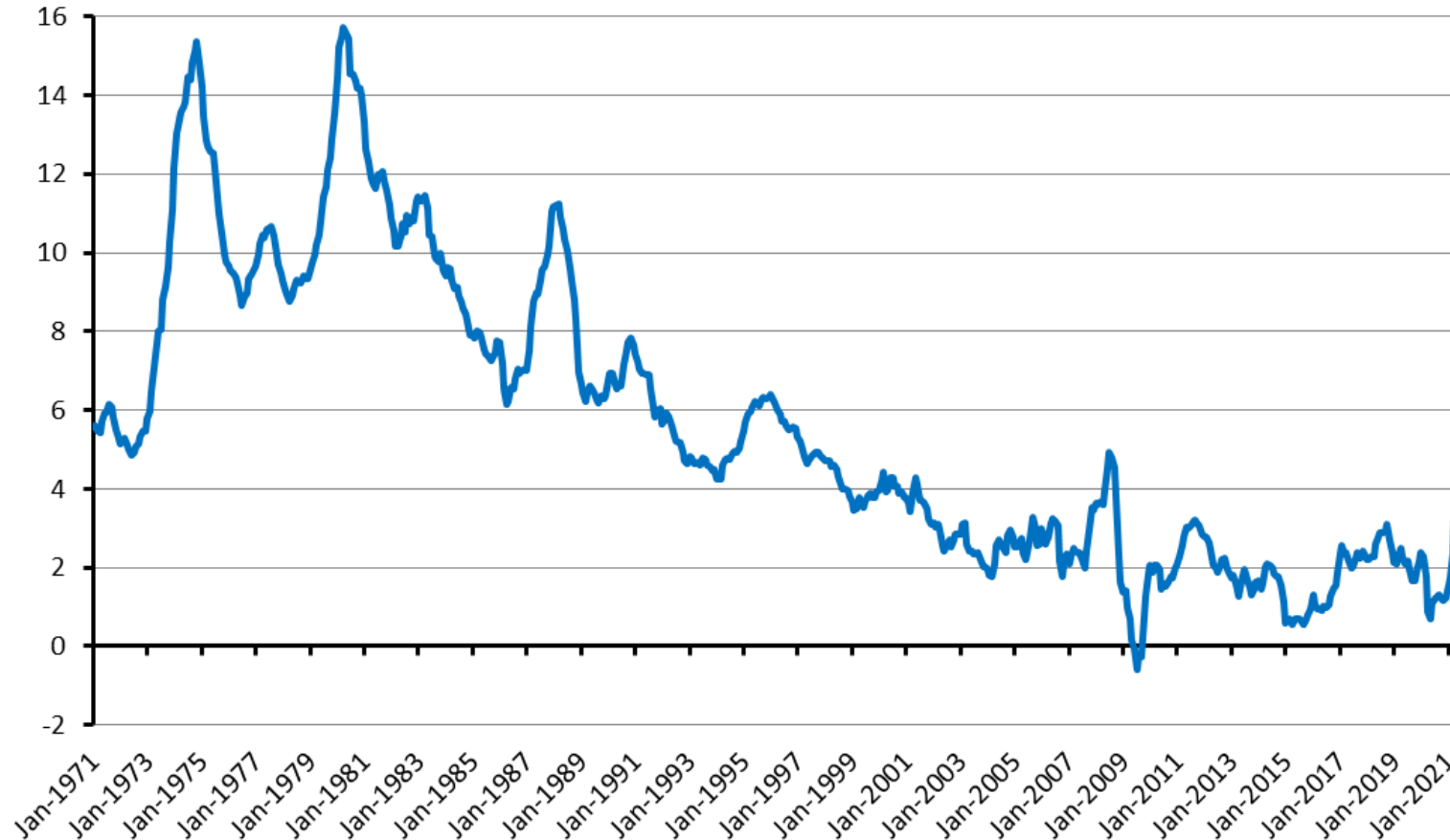


Source: Bloomberg. Index shows difference between expected and actual inflation. the higher the index, the more inflation is surprising to the upside, and vice versa. **Data to September 2021.**

OECD inflation rate in the long run

OECD: Consumer Price Inflation

Per cent change over year



Source: Bloomberg. Weighted CPI inflation for 37 OECD member economies. **Data to September 2021.**



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