

Inflation chart pack: December Quarter, 2021

ONE

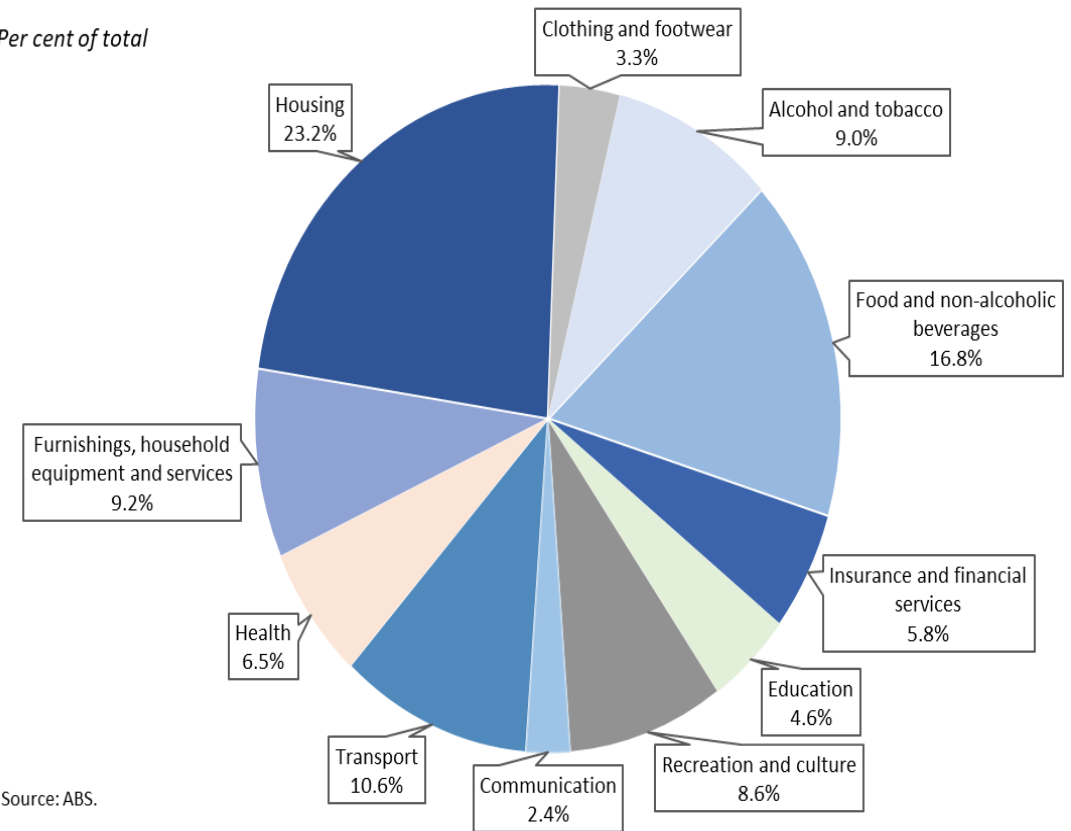
Notes on methodology

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 23.2 per cent weighting), followed by food and non-alcoholic beverages (16.8 per cent) and transport (10.6 per cent).
- Starting 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.
- The most recent update to the expenditure weights was in December 2021.

Australia: CPI weights, 2021

Per cent of total

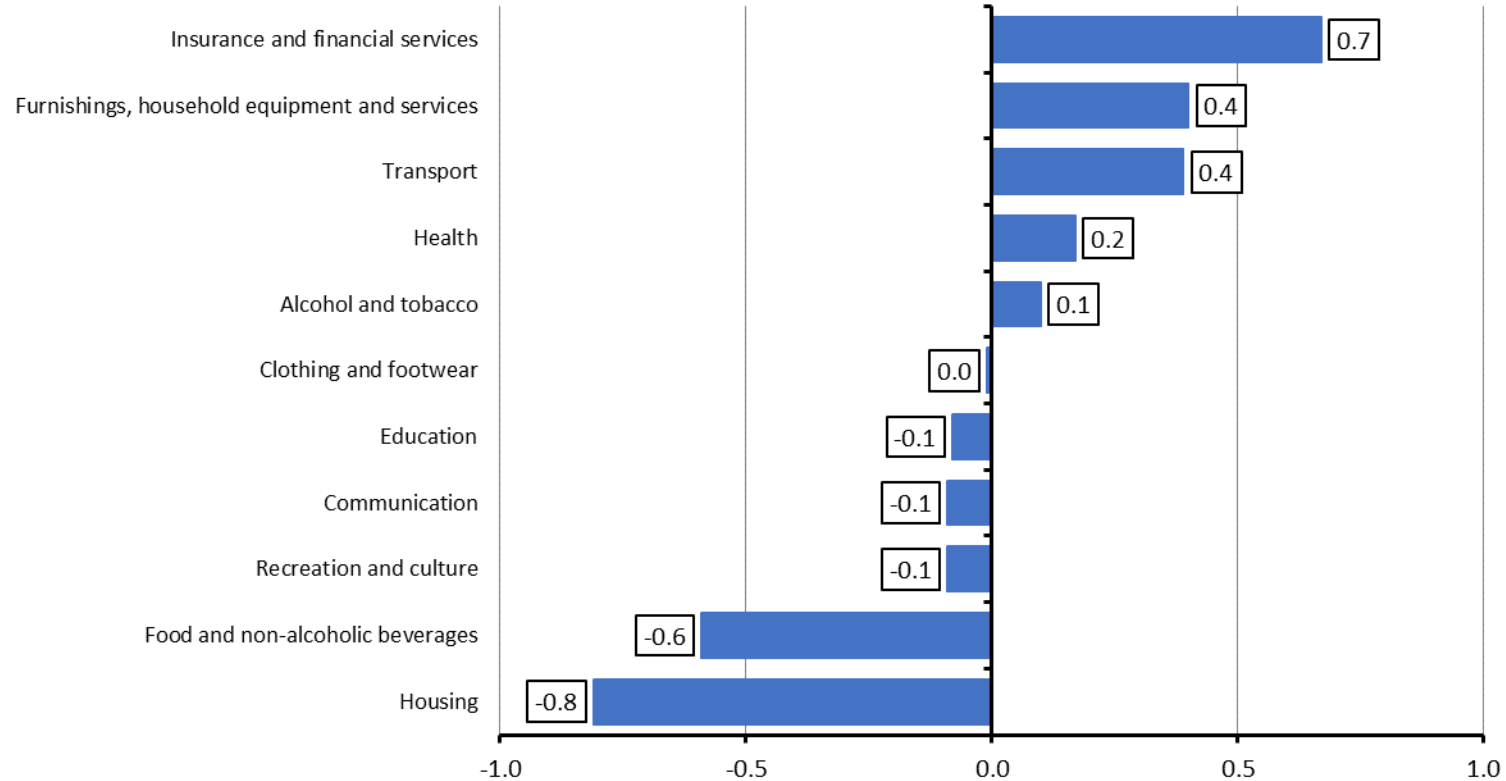


Source: ABS.

Change in CPI weights, 2021

Australia: Change in weights for CPI groups, 2021

Percentage point change relative to 2020



Source: ABS. Note, the fall in the weight of the Housing group is due to a fall in rents, which reflects increased vacancy rates and lower rental prices in Sydney and Melbourne. There has also been a shift towards owner-occupied housing with the weight for new dwellings increasing. The fall in food and non-alcoholic beverages reflects an adjustment from last year's higher weight which had been boosted by increased spending on food at supermarkets during the initial round of lockdowns. The increase in insurance and financial services is due to a rise in real estate activity which increased the weight of taxes on transfers (stamp duty). The rise in the Furniture group reflects increased demand for household goods. The increase for the Transport group is due to higher fuel prices as well as the higher number of vehicles sold combined with higher prices for those vehicles.

TWO

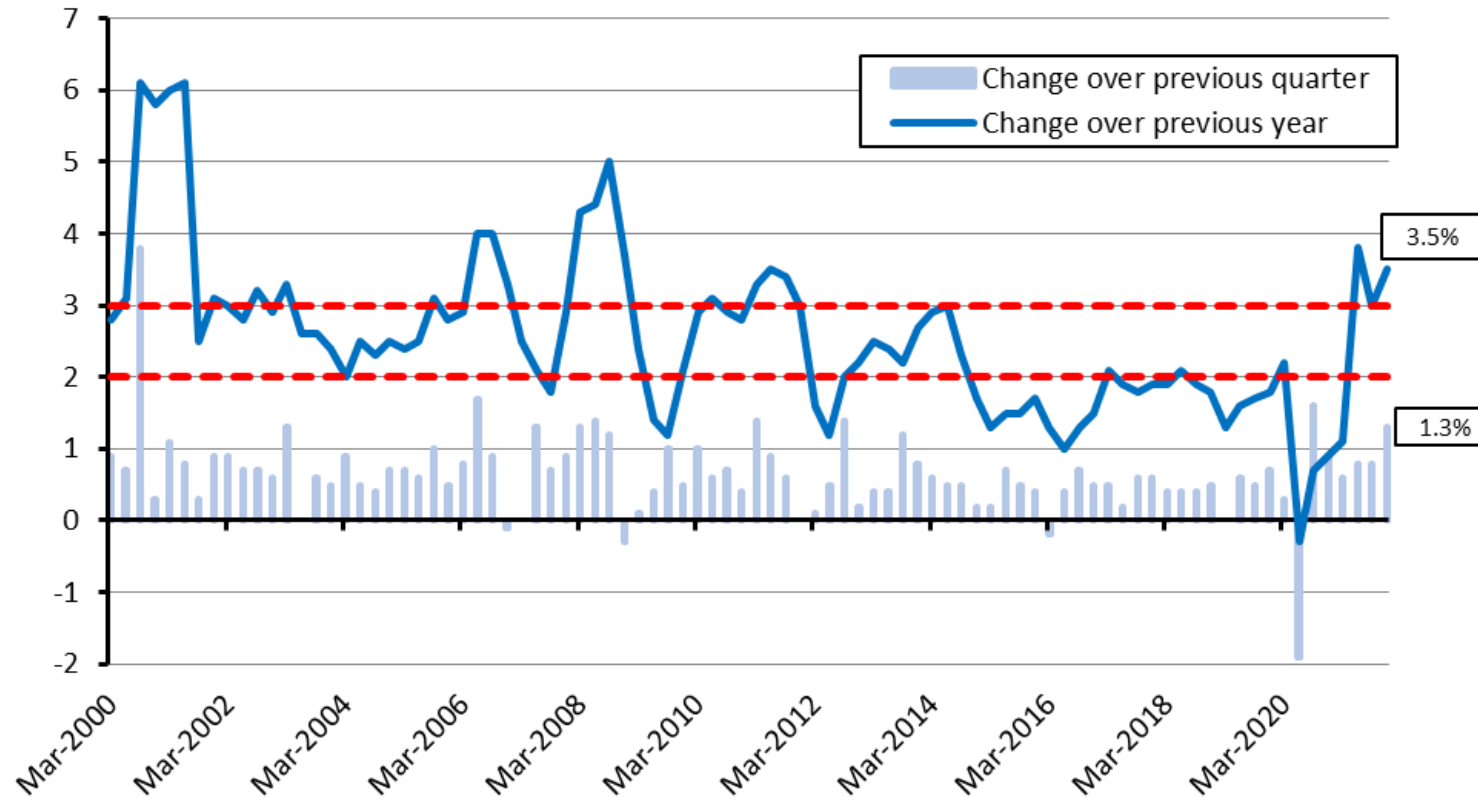
CPI

December Quarter, 2021

Consumer Price Inflation

Australia: Consumer price Index (CPI)

Per cent change in CPI over previous period, nsa



Australia's headline CPI rose 1.3% over the quarter and 3.5% over the year in Q4:2021. The rate of quarterly increase was up from 0.8% in the two previous quarters as inflation picked up at the end of the year. Headline inflation has now been at or above the top of the target band for the past three quarters.

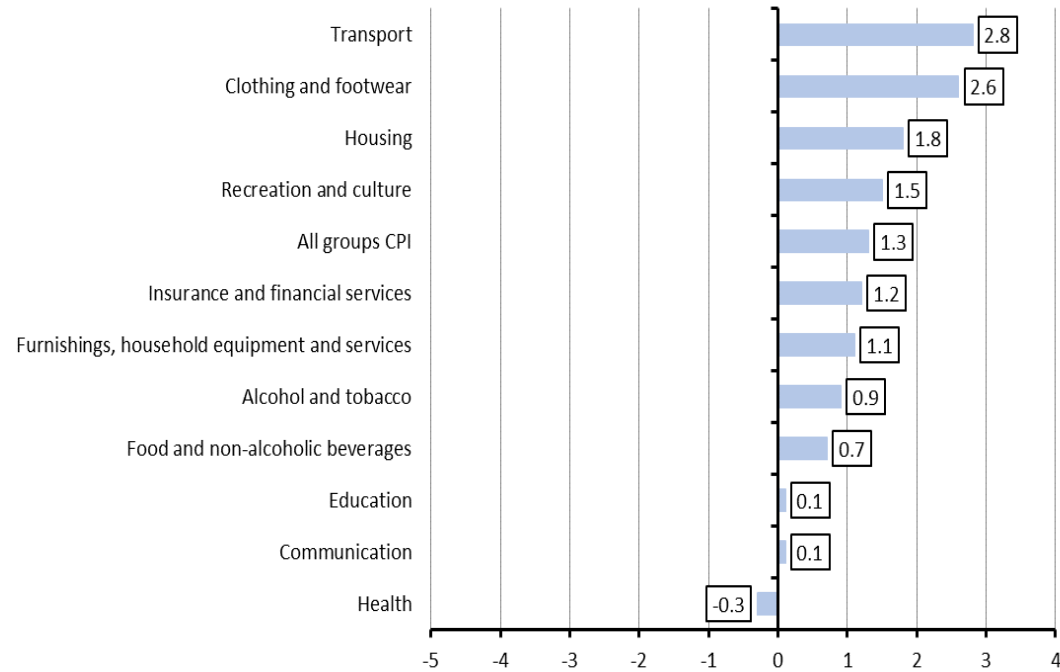
Source: Bloomberg and ABS. The RBA's target is 'to keep consumer price inflation between two and three per cent, on average, over time.' **Data to December quarter 2021.**

CPI by groups

Prices rose for all but one of the main CPI groups over the December quarter. The main drivers of the rise in the quarterly CPI were increases in transport (automotive fuel) and housing (new dwellings). There were also strong price increases for the clothing and footwear and recreation and culture.

Australia: CPI by main groups, December quarter, 2021

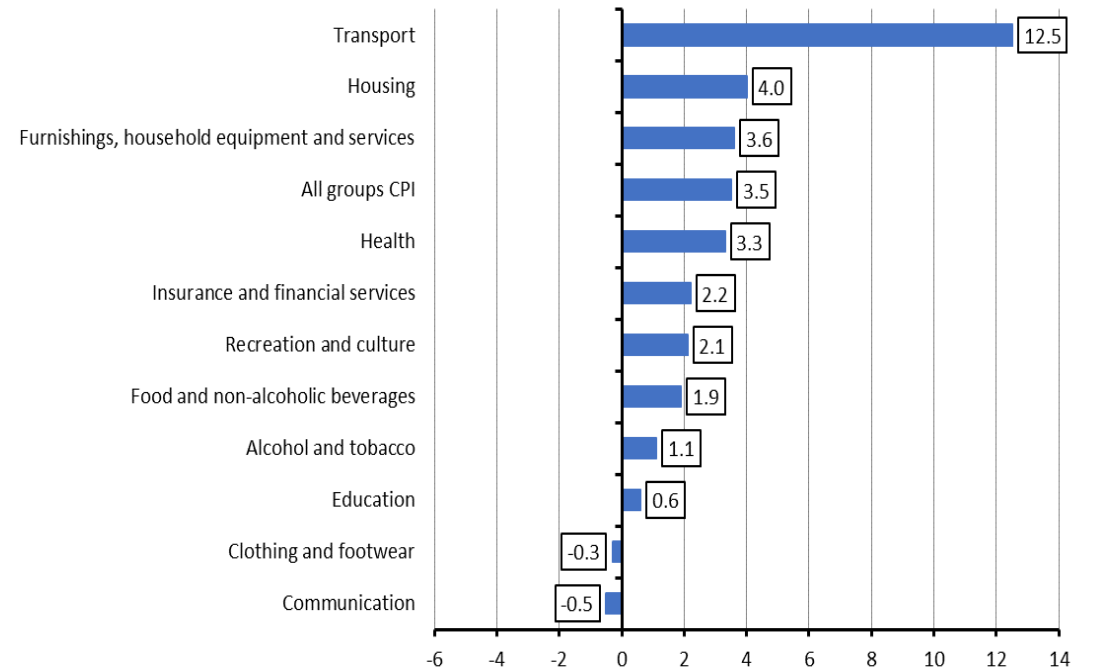
Per cent change over previous quarter, nsa



Source: Bloomberg and ABS

Australia: CPI by main groups, December quarter, 2021

Per cent change over previous year, nsa



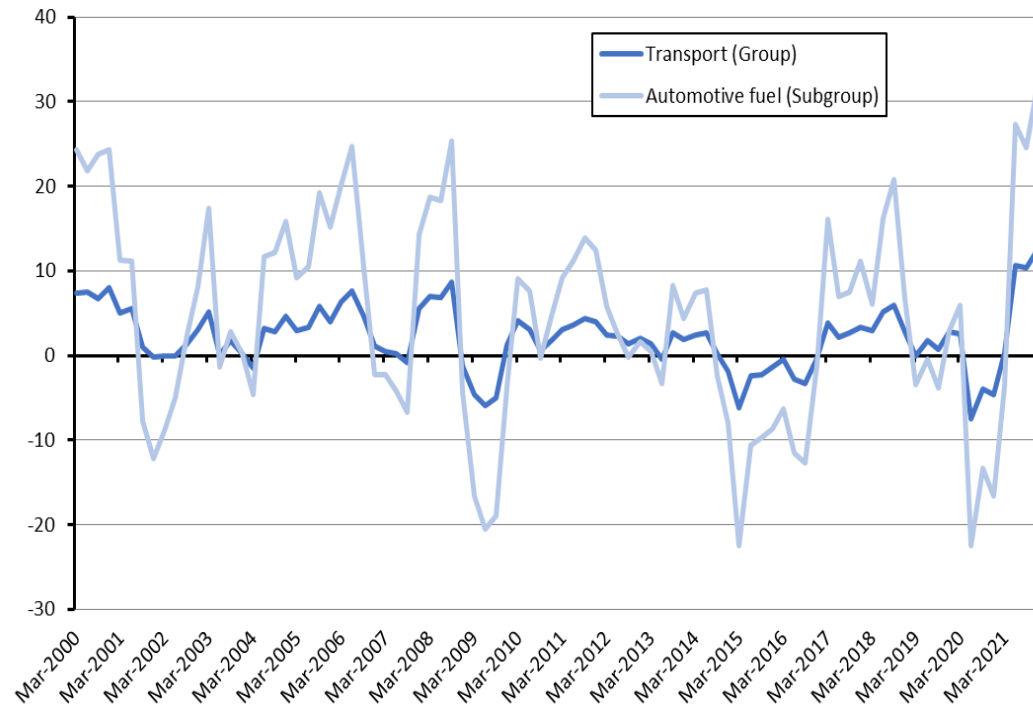
Source: Bloomberg and ABS

Drivers of inflation by select CPI group

Increases in the transport group accounted for more than 0.3ppts of the 1.3% increase in the overall CPI in the December quarter. The rise in transport costs largely reflected a sharp increase in the price of automotive fuel (which rose for a 6th consecutive quarter and at a 33.2% annual rise recorded the strongest increase since 1990, taking the level of prices to a new record).

Australia: Transport in the CPI

Per cent change over year

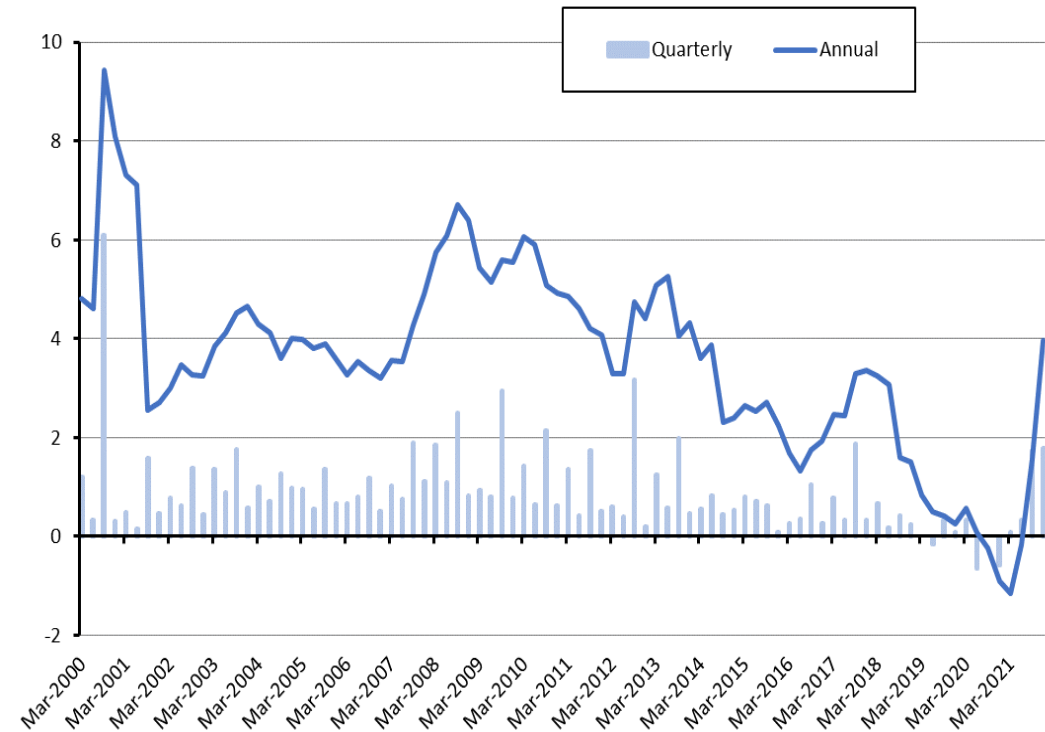


Source: ABS Data to December quarter 2021.

Rises in housing costs accounted for more than 0.4ppts of the quarterly increase in the Q4 CPI. The increase in housing was driven by a 4.2% jump in new dwelling purchases by owner occupiers in what was the largest rise since the September 2000 quarter following the introduction of the GST.

Australia: Housing in the CPI

Per cent change over previous period, sa

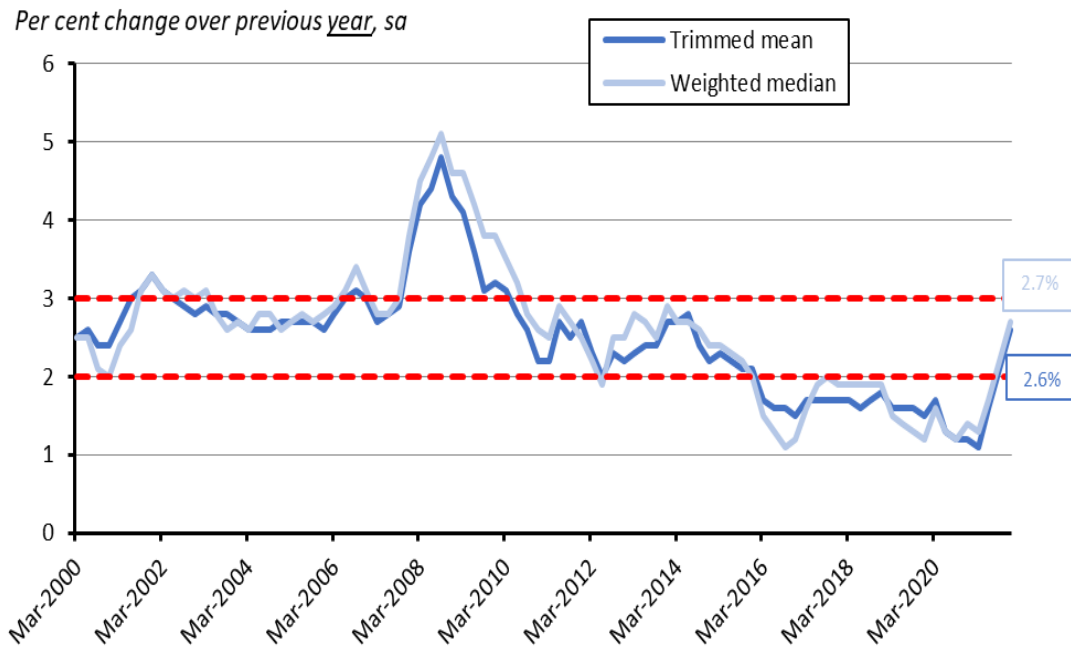


Source: ABS Data to December quarter 2021.

Underlying Inflation

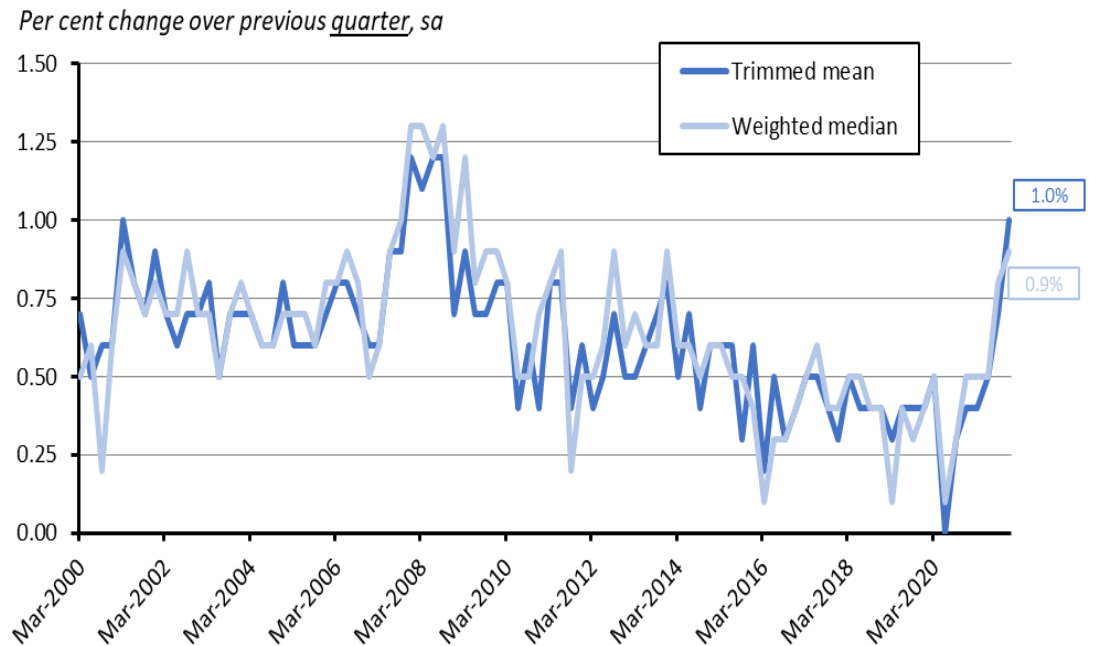
Underlying inflation – as measured by the trimmed mean – rose to an annual rate of 2.6% in the December quarter, the highest result since June 2014. Quarterly growth was a strong 1%. The trimmed mean has now been in the RBA's target range for two consecutive quarters.

Australia: Measures of underlying inflation



Source: Bloomberg and ABS. The trimmed mean is the RBA's preferred measure of underlying inflation. 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 December quarter 2021.**

Australia: Measures of underlying inflation



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 December quarter 2021.**

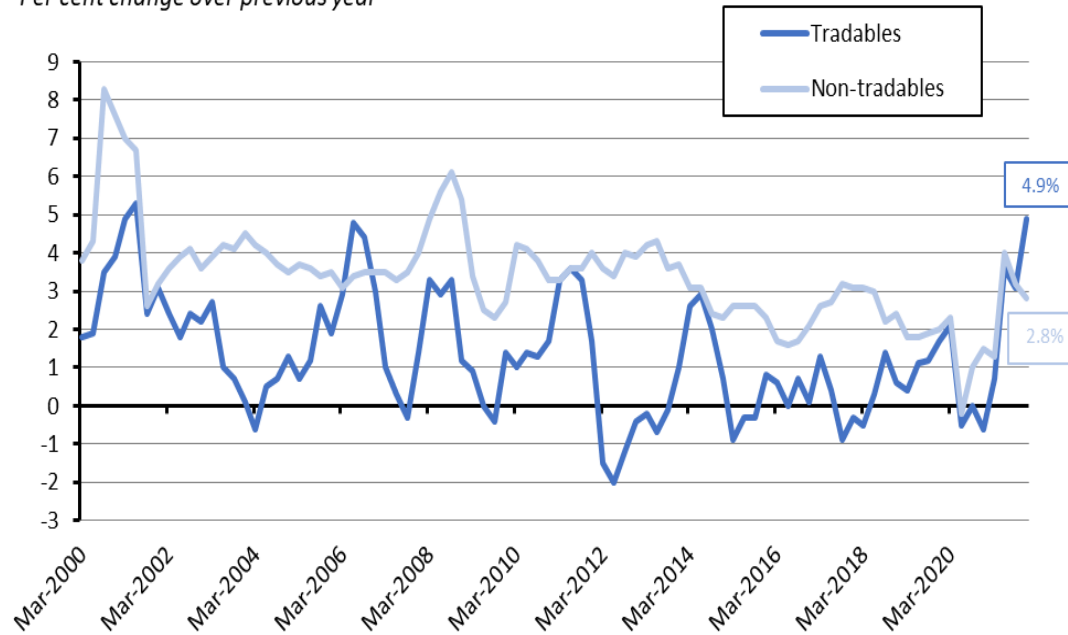
Selected analytical measures of inflation

Tradables inflation was 4.9% in annual terms in Q4:2021 while non-tradables annual inflation was 2.8%.

Goods inflation continued to outpace services inflation reflecting the combined impact of strong demand and disrupted supply with ongoing price rises for goods such as furniture and motor vehicles. Overall goods price inflation (inc. volatiles) was the highest in annual terms since 2008.

Australia: Tradables and non-tradables inflation

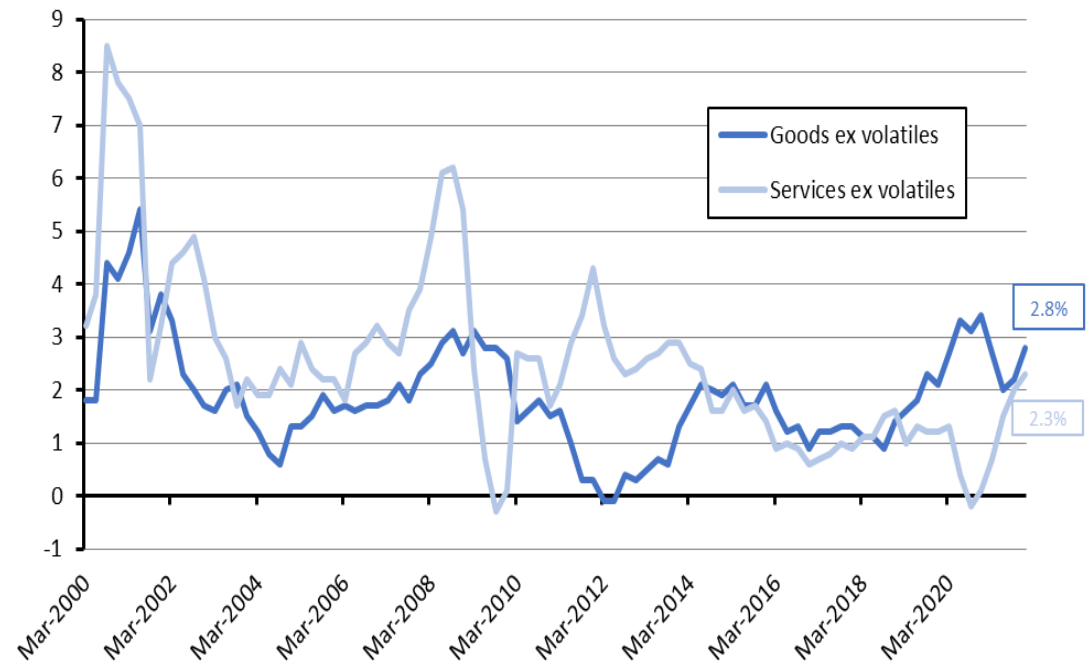
Per cent change over previous year



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 December 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 December quarter 2021.**

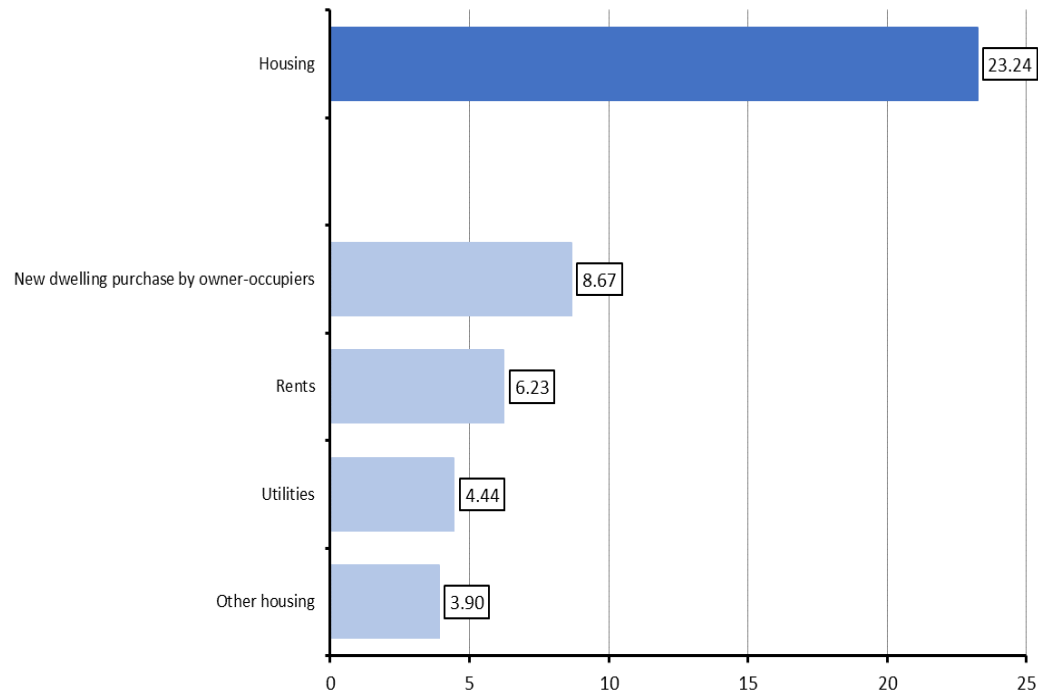
THREE

Housing and the CPI

Housing in the CPI

Australia: Housing in the Consumer Price Index (CPI)

Share of All Group CPI as of December quarter 2021



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 23.2 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.

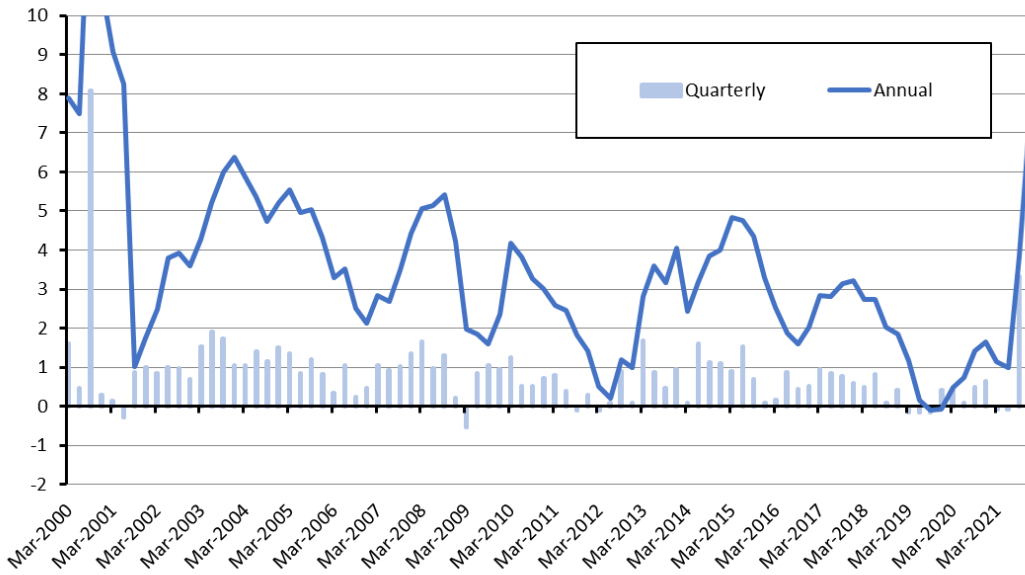
Several key items are excluded from the CPI. (1) Purchases of *established* dwellings because they are treated as transfers of existing assets. (2) Land as it is treated as an investment, not as consumption. (3) The cost of servicing a mortgage has been excluded from the CPI since 1998.

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

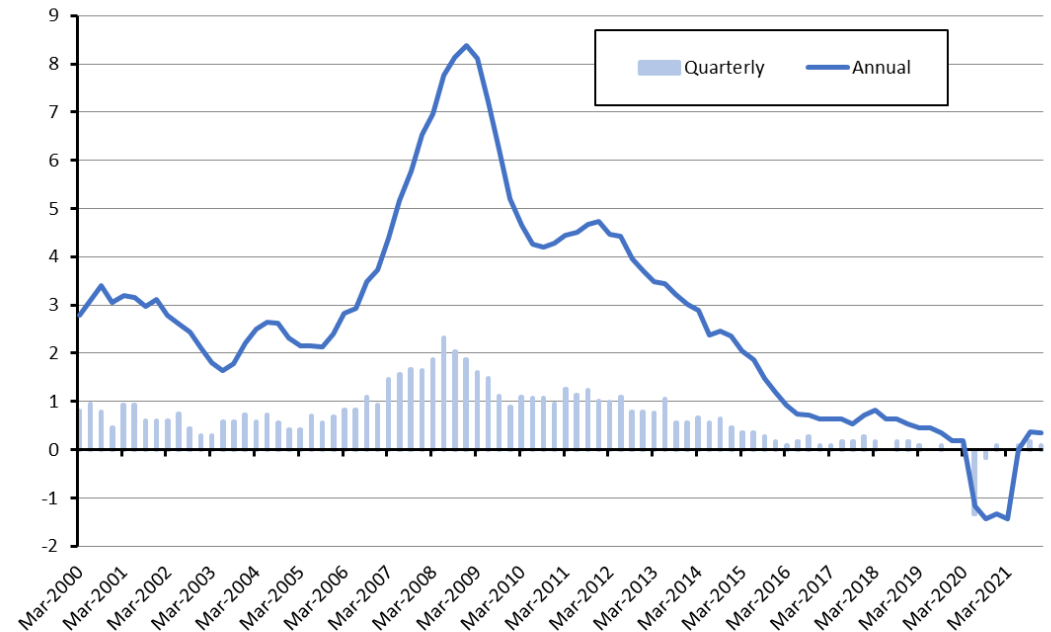


Source: ABS **Data to December quarter 2021**. Note that HomeBuilder grants and similar state government programs are treated by the ABS as price reductions and although the programs have closed, grants will continue to be paid out and therefore impact new dwelling price inflation through 2022. Note also that the spike in the September quarter 2000 is associated with the introduction of the GST and removal of wholesale taxes.

The ABS said that high levels of construction activity plus shortages of raw materials and labour contributed to a second consecutive quarter of rising new dwelling prices in Q4:2021 – which increased at their fastest rate since September 2000, following the introduction of the GST.

Australia: Housing rent inflation (CPI series)

Per cent change over previous period, sa



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

The Bureau also highlighted the persistence of a two-speed rental market across Australia's capital cities: rents fell for a fourth consecutive quarter in Sydney and for a third consecutive quarter in Melbourne, but continued to rise across the other capital cities.

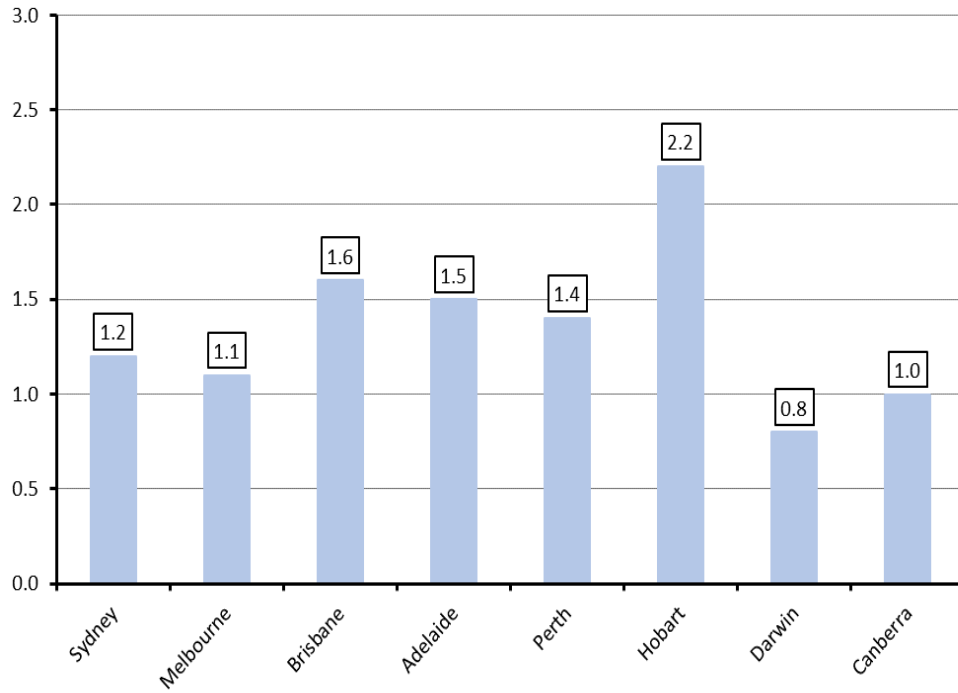
FOUR

CPI by capital city

Inflation by capital city

Australia: CPI by capital city, December 2021 quarter

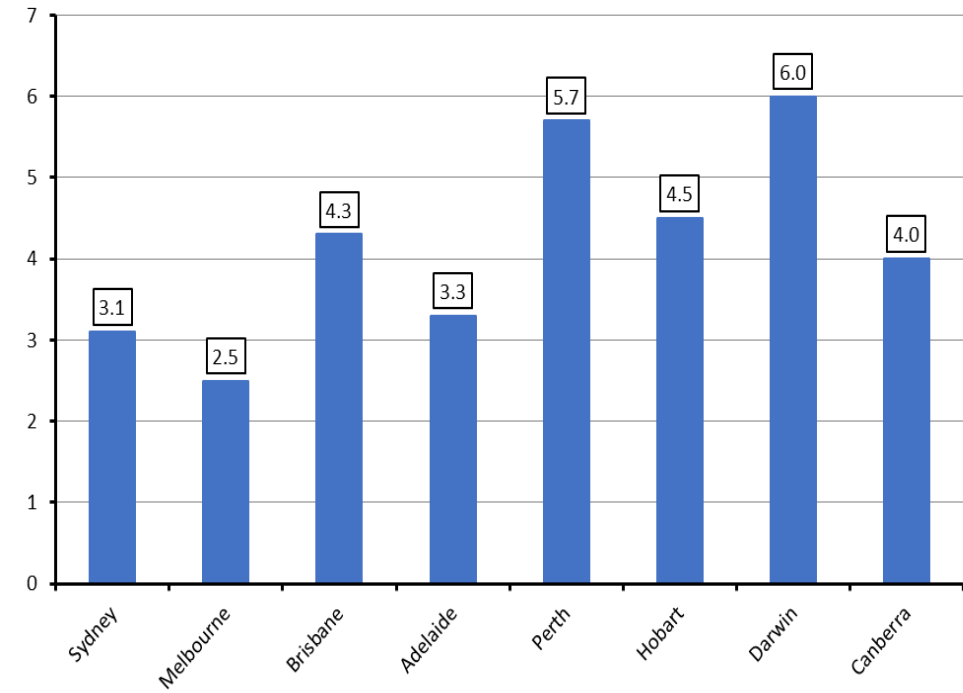
Per cent change over previous quarter



Source: Bloomberg and ABS

Australia: CPI by capital city, December 2021 quarter

Per cent change over previous year



Source: Bloomberg and ABS

FIVE

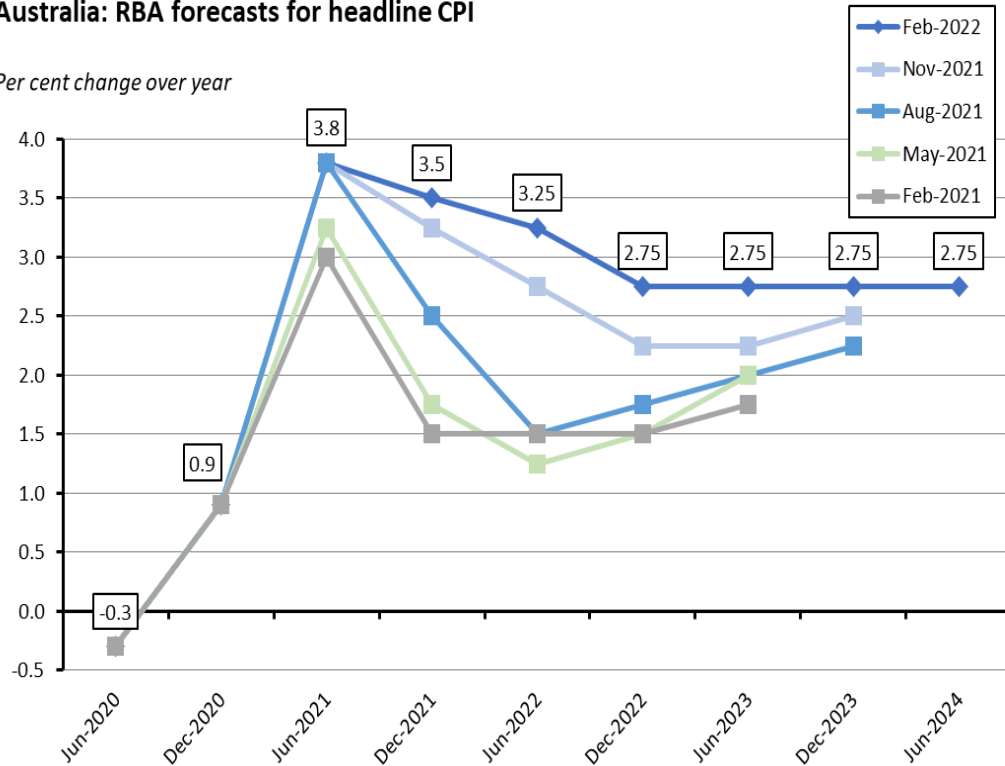
Inflation expectations

RBA inflation forecasts

The RBA's February 2022 *Statement on Monetary Policy* includes significant upgrades to the central bank's inflation forecasts. Both headline and underlying inflation are now expected to be either (temporarily) above the top of the target band or in the top half of the target band across the forecast period.

Australia: RBA forecasts for headline CPI

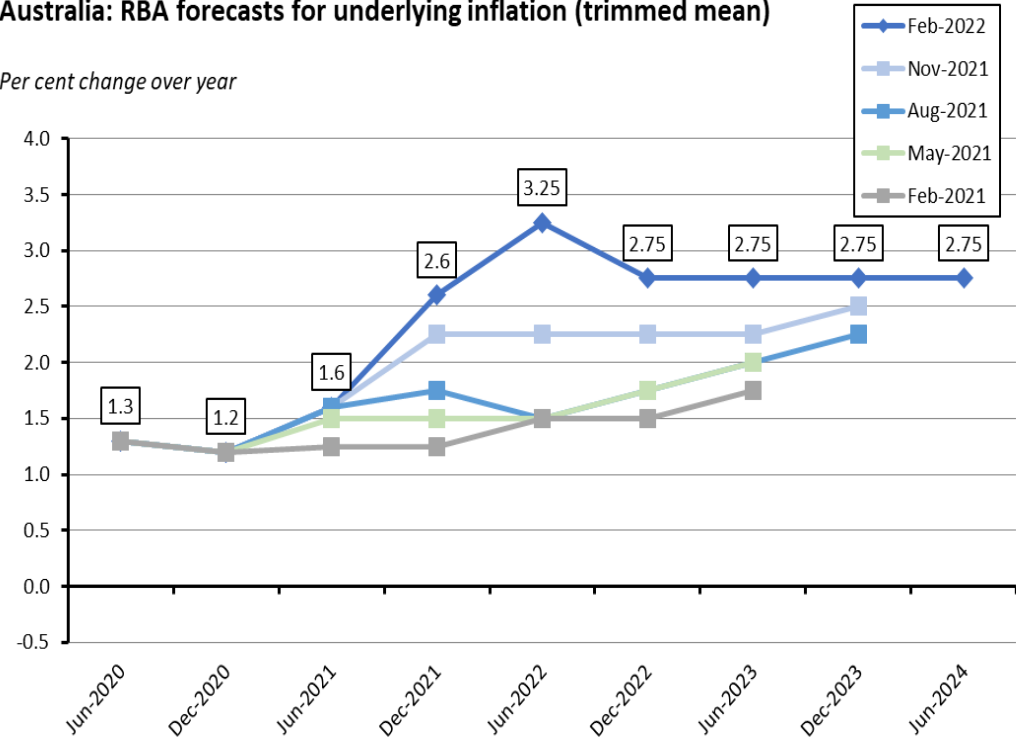
Per cent change over year



Source: RBA *Statement on Monetary Policy (SOMP)*, various. Labels for historical data and February 2022 SOMP projections only.

Australia: RBA forecasts for underlying inflation (trimmed mean)

Per cent change over year

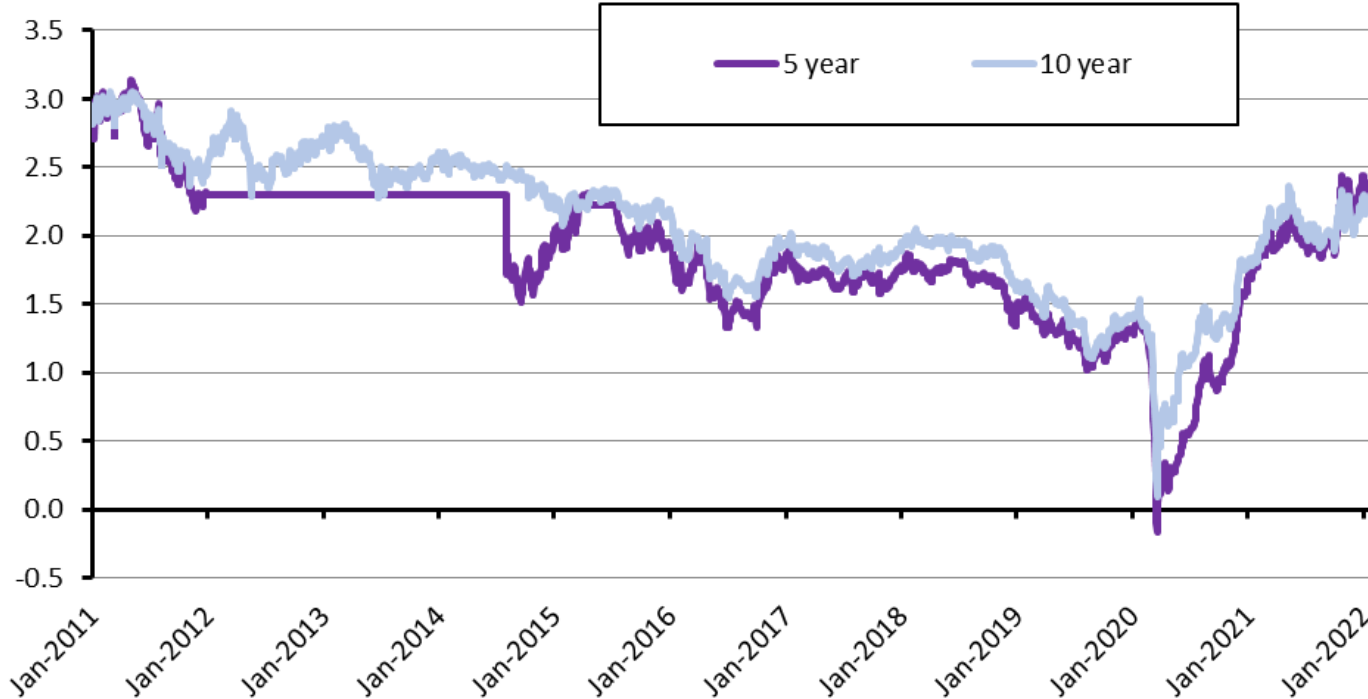


Source: RBA *Statement on Monetary Policy (SOMP)*, various. Labels for historical data and February 2022 SOMP projections only. The trimmed mean is the RBA's preferred measure of underlying inflation. It is calculated by ordering all 87 expenditure classes by their quarterly, seasonally-adjusted price change and 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.

Inflation expectations (1): Financial market indicators

Australia: Inflation expectations - Break-even rates

Per cent change over previous year



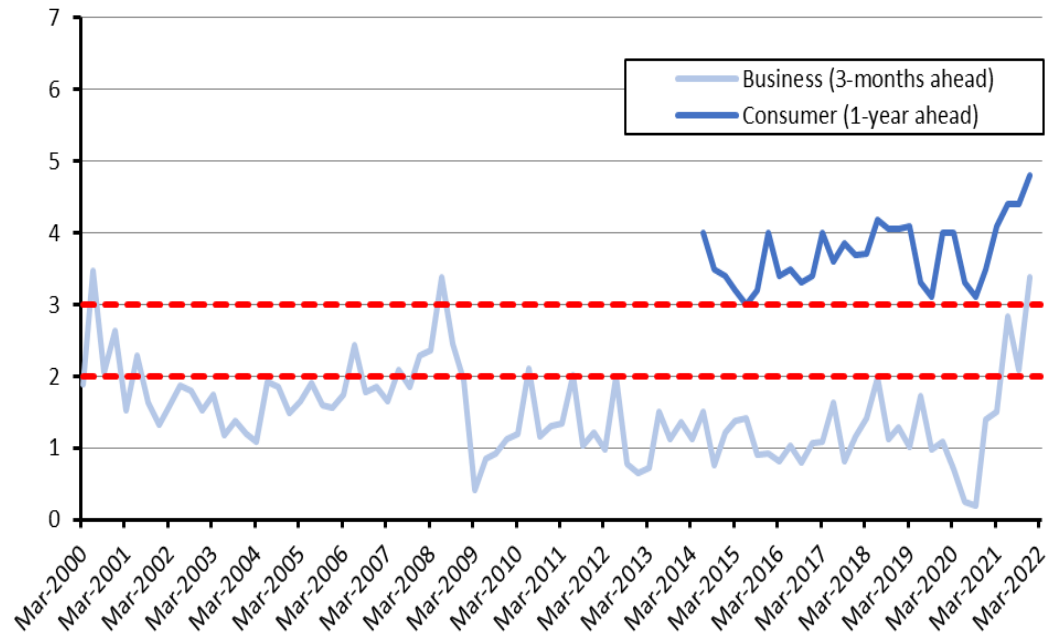
Medium-term financial market inflation expectations have rebounded and are now broadly consistent with the RBA's inflation target.

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 8 February 2022.**

Inflation expectations (2): Businesses and Consumers

Australia: Business and consumer inflation expectations

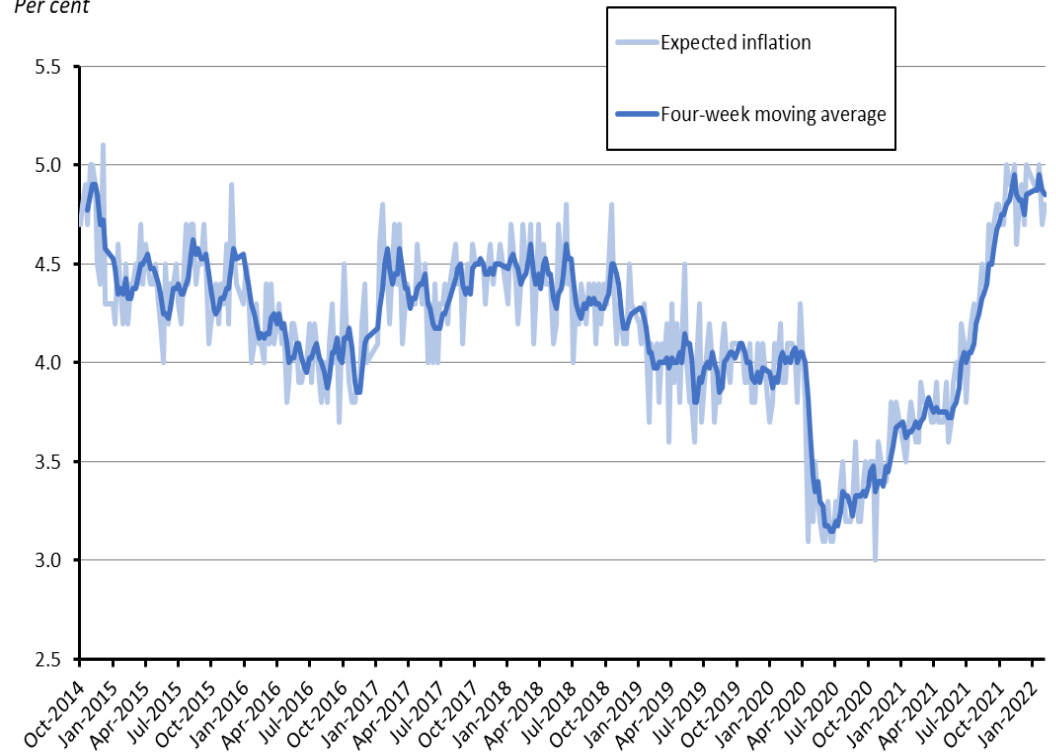
Per cent change over previous year



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 December quarter 2021.**

Australia: ANZ Roy Morgan Inflation Expectations (two-years ahead)

Per cent

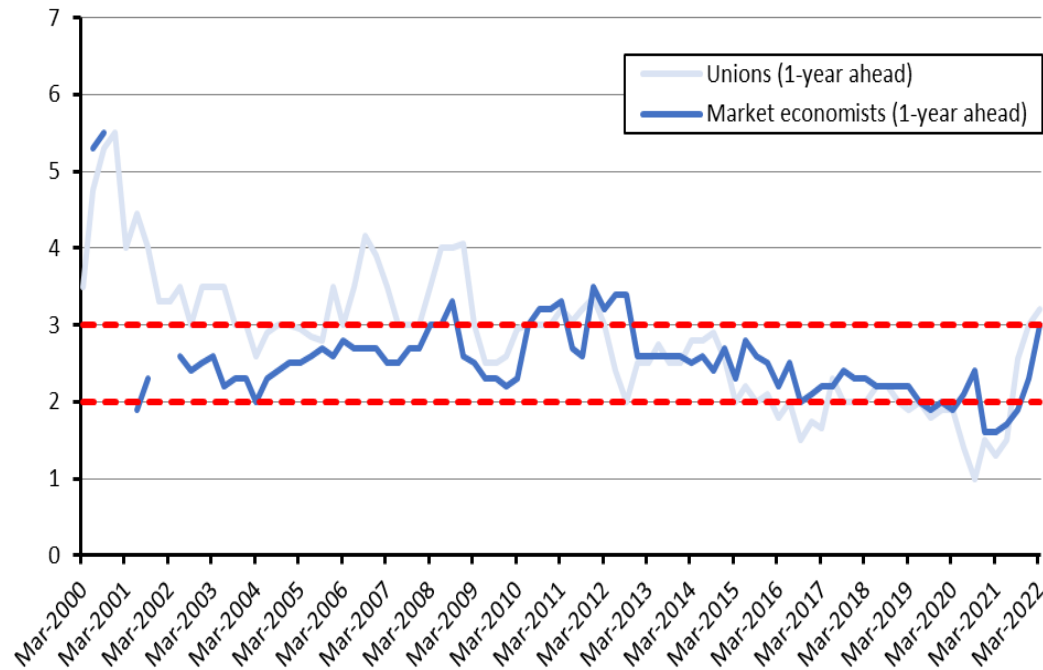


Source: Roy Morgan. **Data to 8 February 2022.**

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

Australia: Inflation expectations, one-year ahead

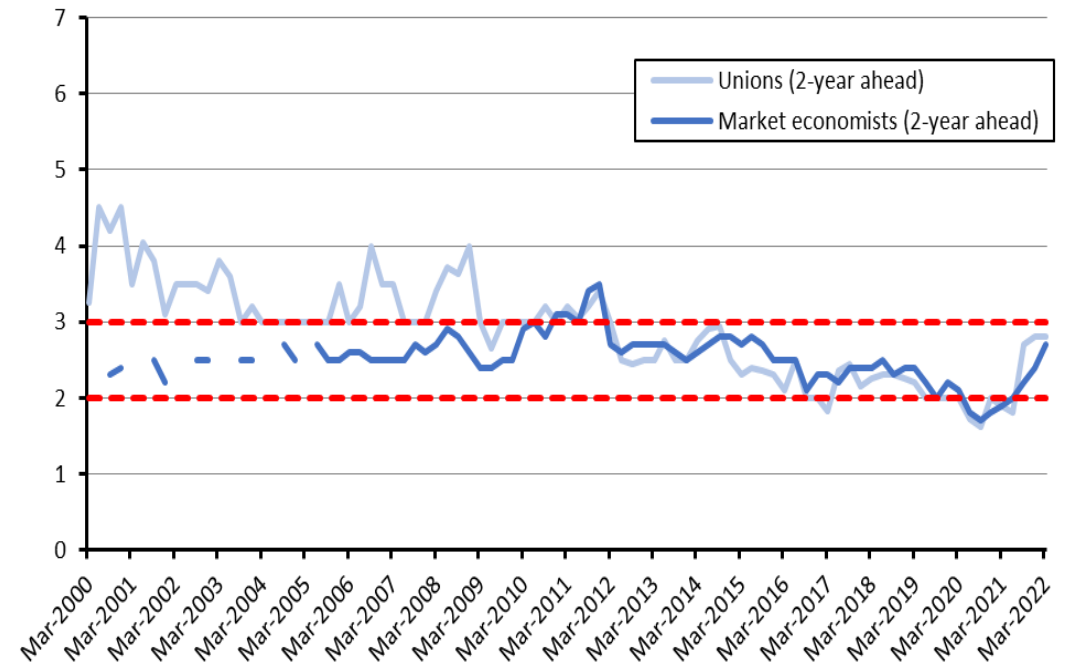
Per cent change over previous year



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 March quarter 2022.**

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 March quarter 2022.**

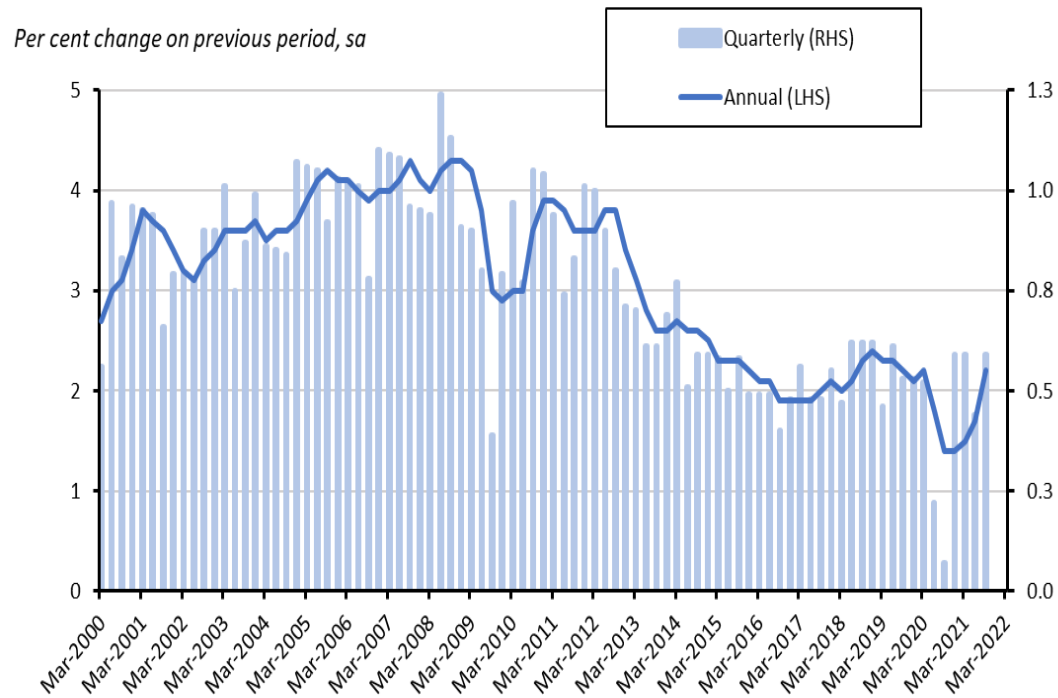
SIX

Inflation and the labour market

Wage growth

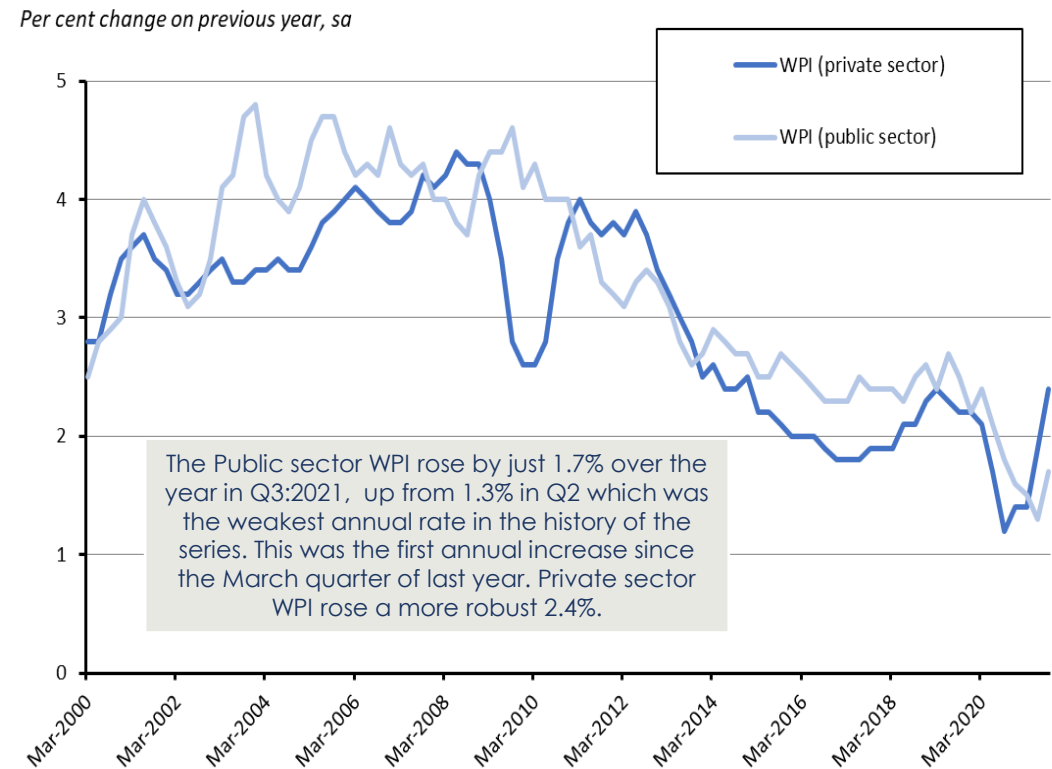
The WPI rose 0.6% over the quarter and 2.2% over the year in Q3:2021. The ABS said that the September quarter 2021 data marked a reversion to a pre-pandemic pattern of wage growth.

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 September quarter 2021.**

Australia: Wage Price Index

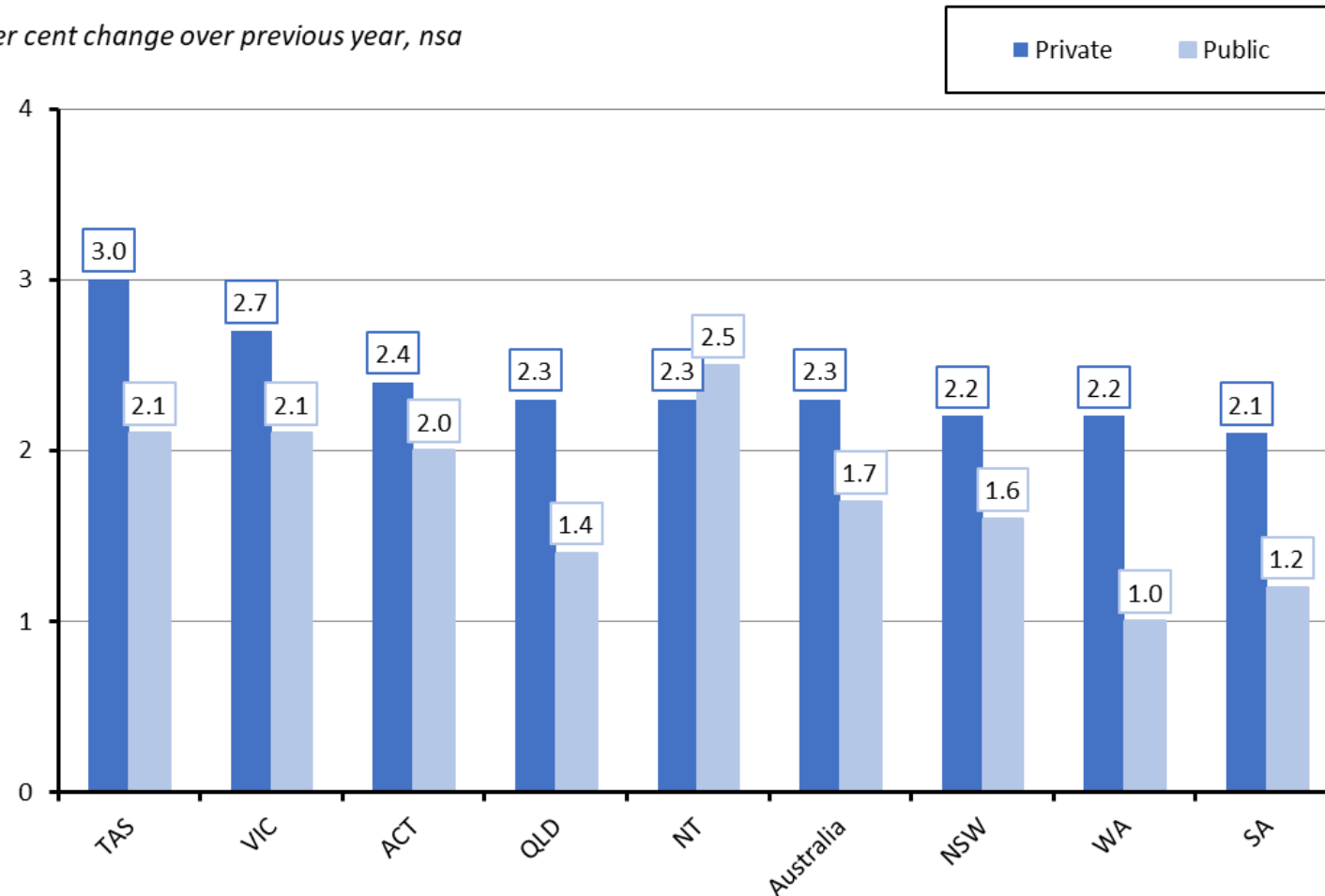


Source: Bloomberg and ABS. **Data to September quarter 2021.**

Wage growth by State and Territory

Australia: Wage Price Index by State, September quarter 2021

Per cent change over previous year, nsa

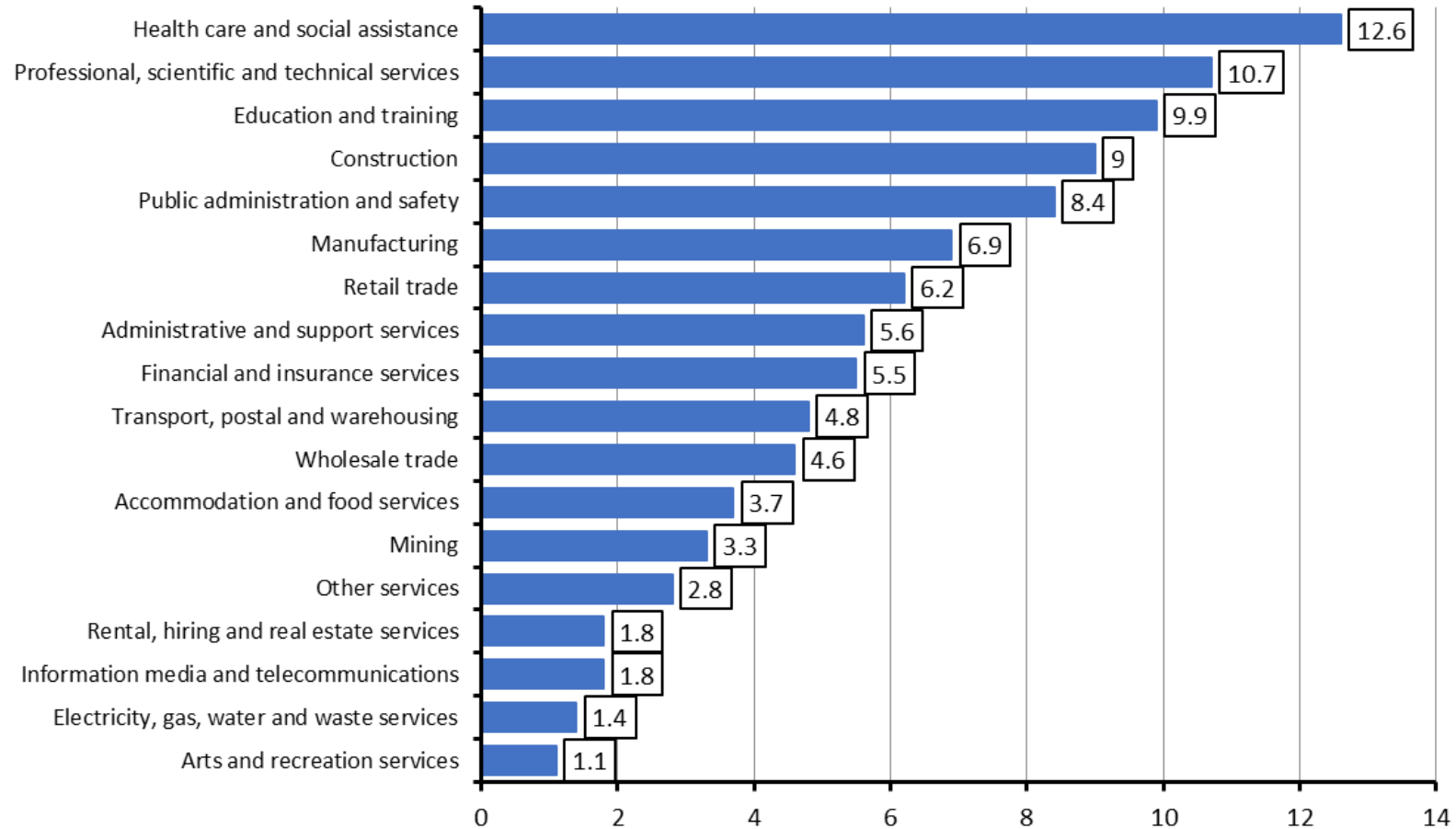


Source: ABS. WPI series is total hourly rates of pay excluding bonuses.

WPI weights by Industry

Australia: Wage Price Index weights by Industry

Per cent of total, all (public and private) sectors



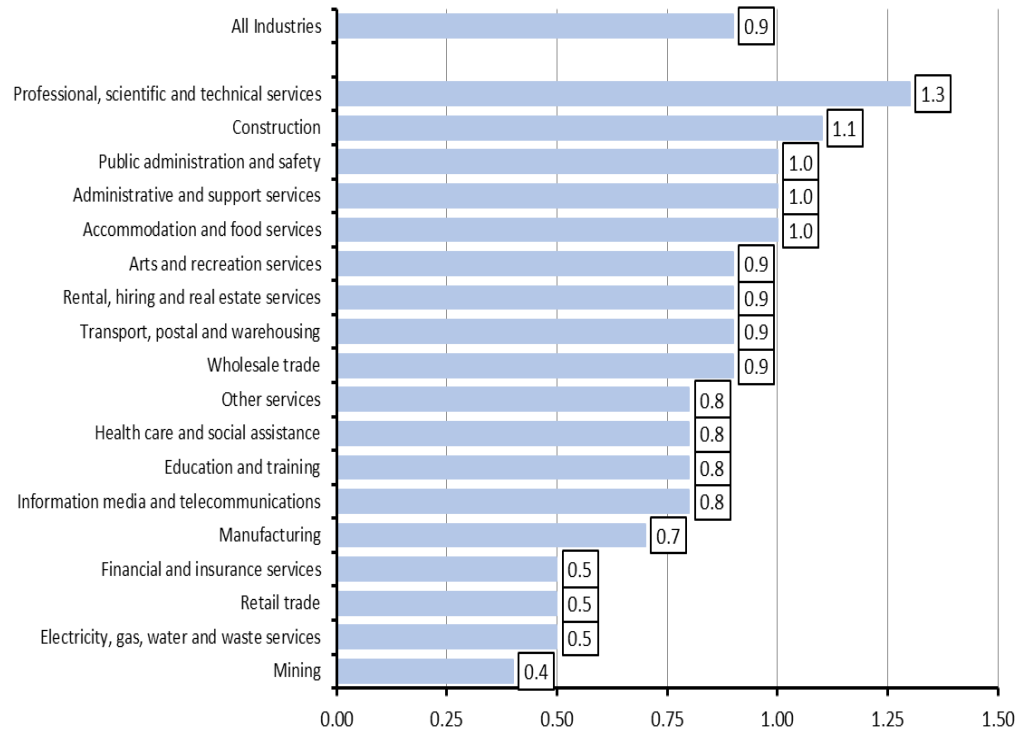
Source: ABS. Weights last updated December quarter 2018. The WPI will be reweighted in the December quarter of 2021.

Wage growth by Industry

The ABS pointed to 'pockets of wage pressure' for skilled construction-related, technical and business services roles.

Australia: Wage Price Index by Industry, September quarter 2021

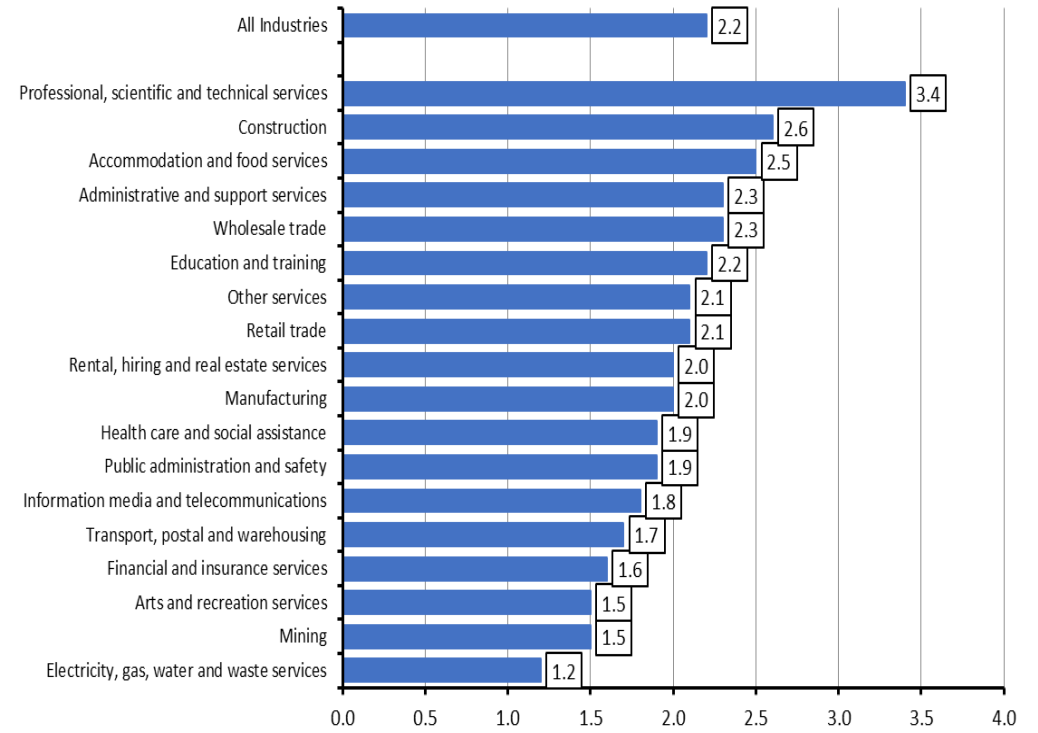
Per cent change over previous quarter, nsa



Source: ABS.

Australia: Wage Price Index by Industry, September quarter 2021

Per cent change over previous year, nsa

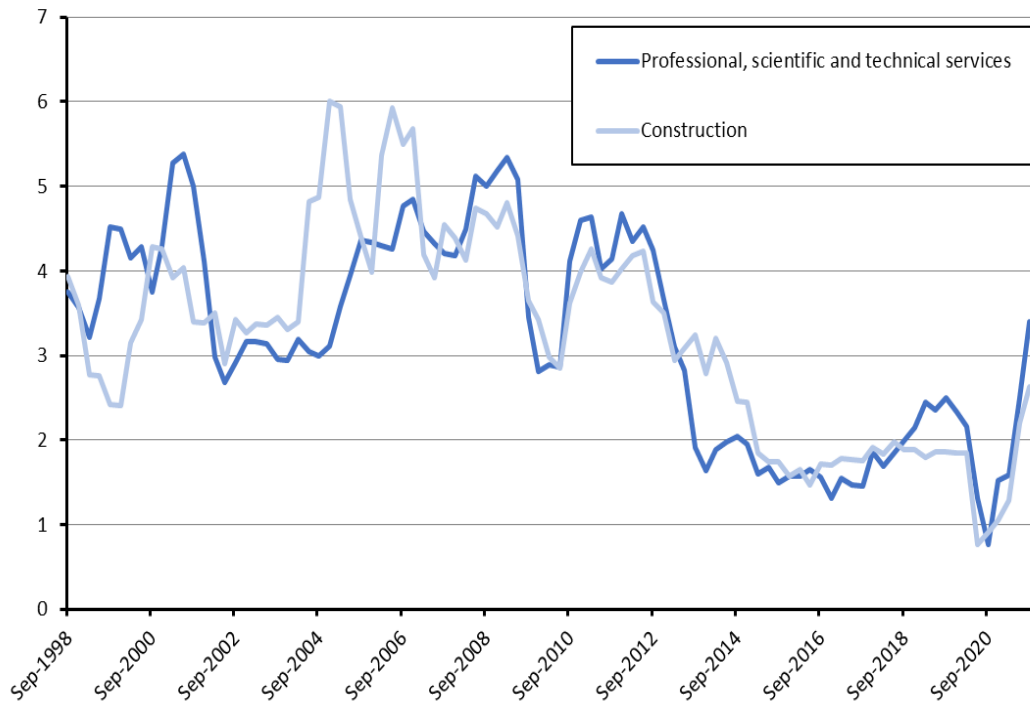


Source: ABS.

Wage growth by selected industry over time

Australia: Wage Price Index for Selected Industries

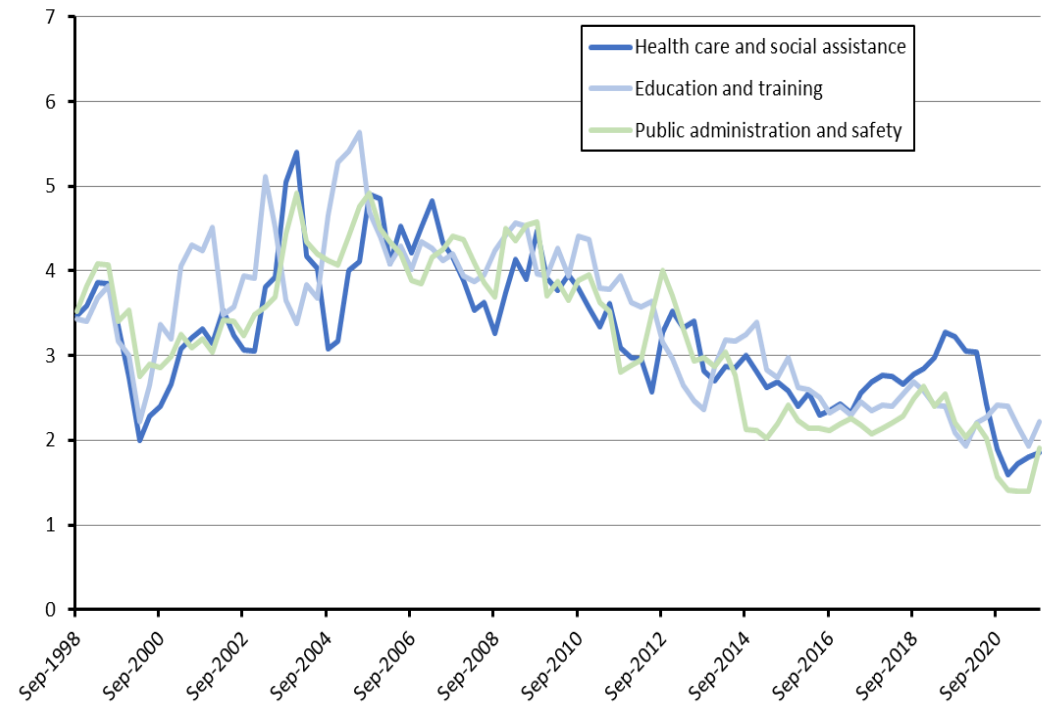
Per cent change on previous year, nsa, all (public and private) sectors



Source: ABS. WPI for total hourly rates of pay excluding bonuses. **Data to September quarter 2021.**

Australia: Wage Price Index for Selected Industries

Per cent change on previous year, nsa, all (public and private) sectors

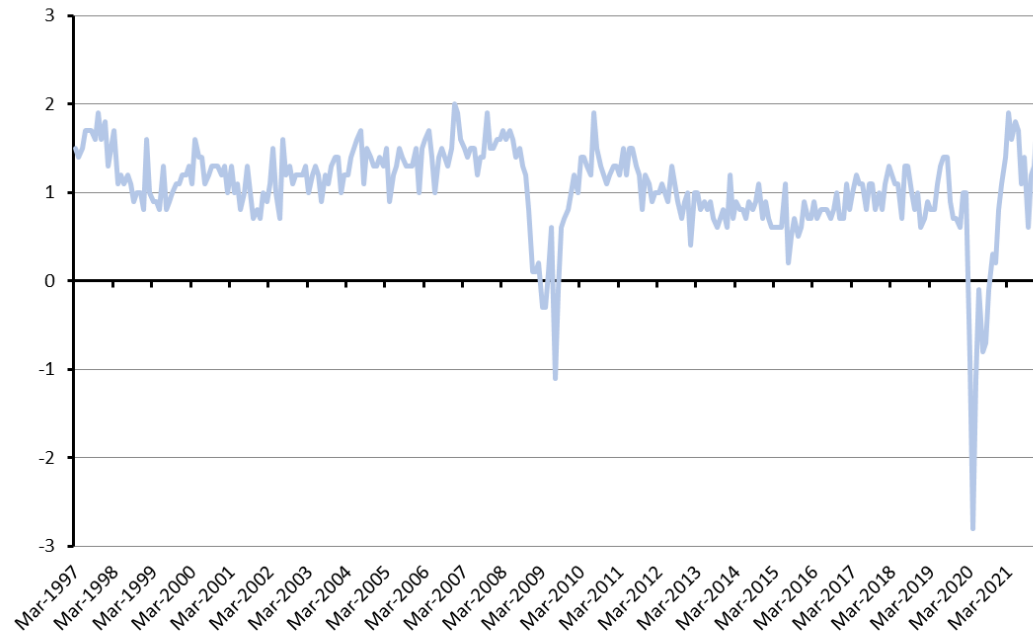


Source: ABS. WPI for total hourly rates of pay excluding bonuses. **Data to September quarter 2021.**

NAB Business survey: Input costs

Australia: NAB Labour costs

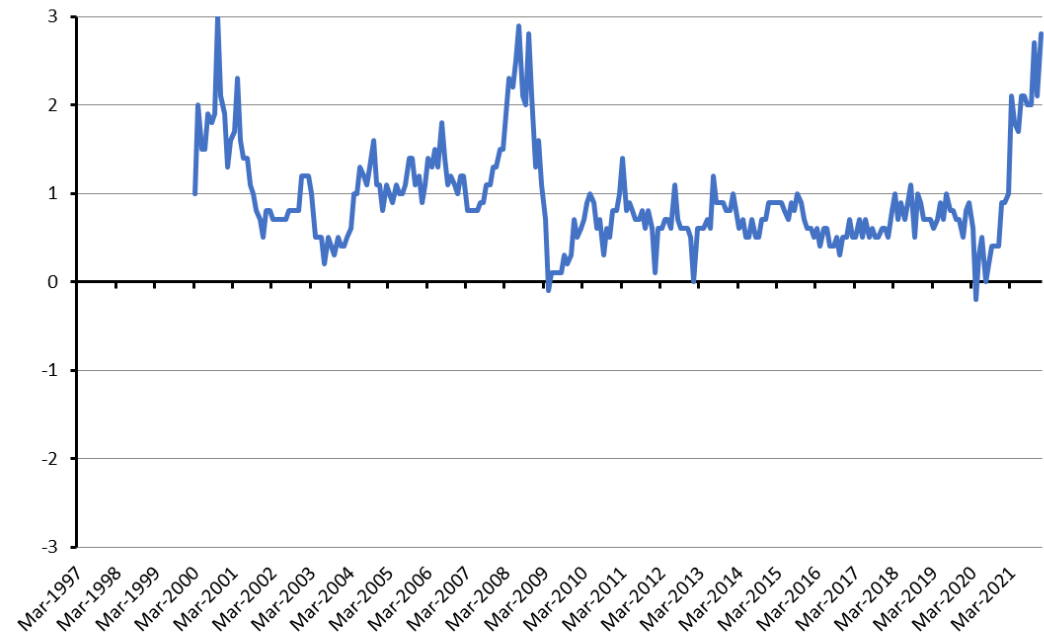
Per cent change at a quarterly rate, sa



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

Australia: NAB Purchase costs

Per cent change at a quarterly rate, sa

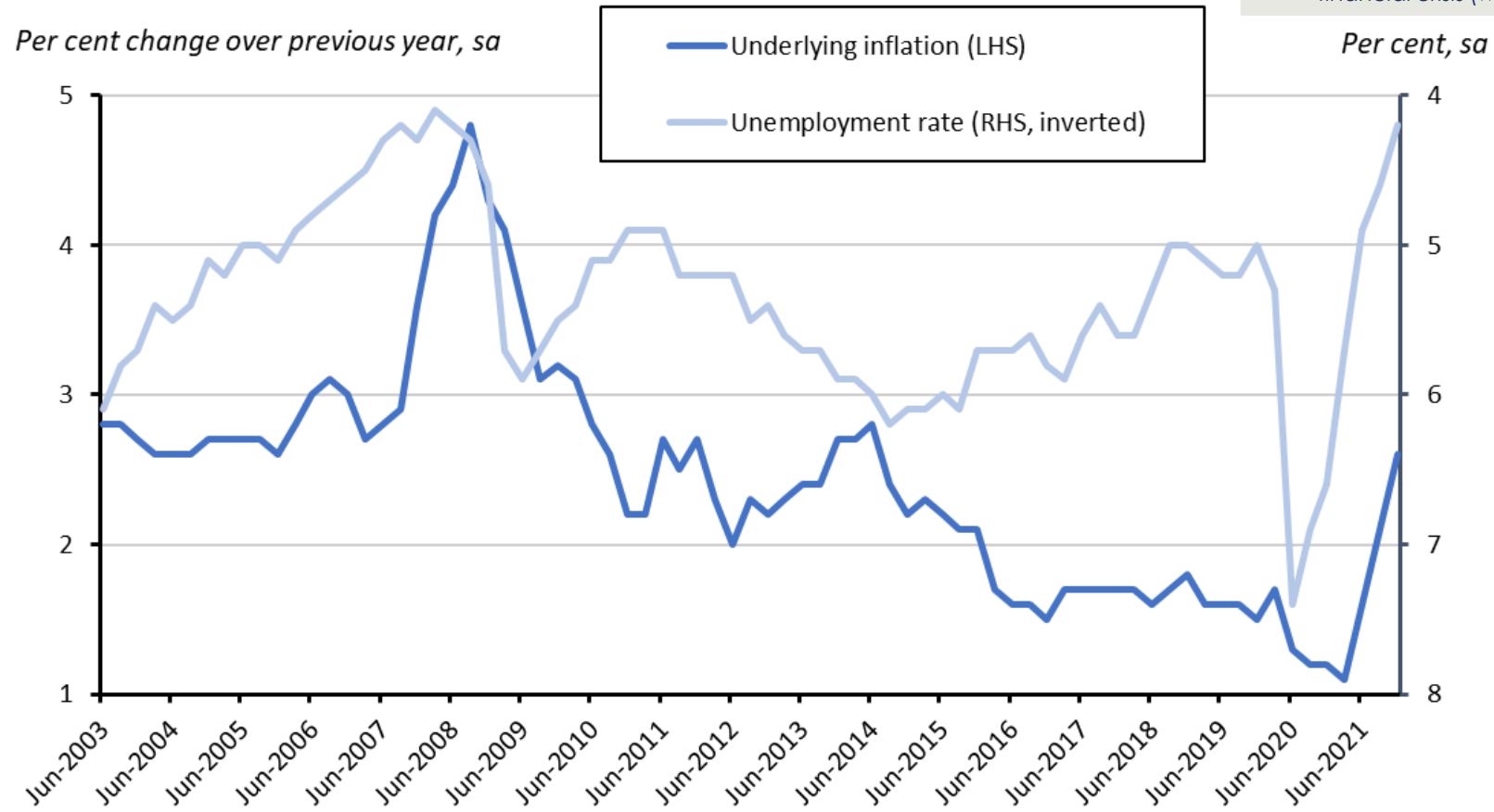


Source: NAB and Bloomberg. Purchase costs data start March 2000. **Data to December 2021.**

Inflation and unemployment

By December 2021, the monthly unemployment rate had fallen back to just 4.2% and the underemployment rate was down to 6.6% per cent, taking the underutilisation rate to 10.8%. The rate of unemployment is now at its lowest level since August 2008, just before the start of the global financial crisis (when it reached 4%).

Australia: Inflation and unemployment 2003:Q2 to 2021:Q4

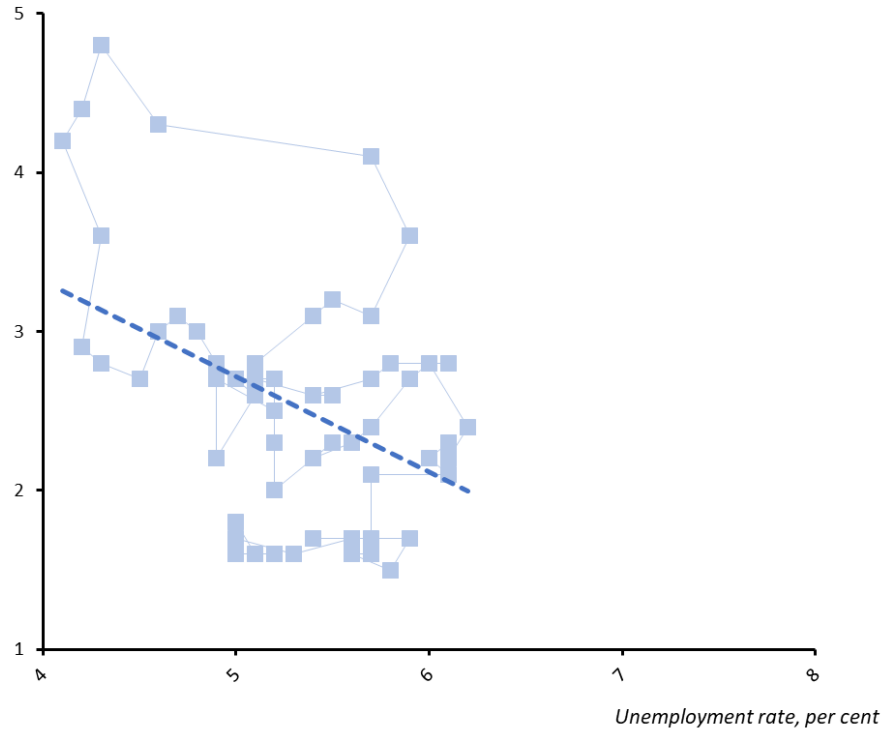


Source: Bloomberg and ABS. Underlying inflation is the trimmed mean CPI.

The Phillips Curve (1)

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

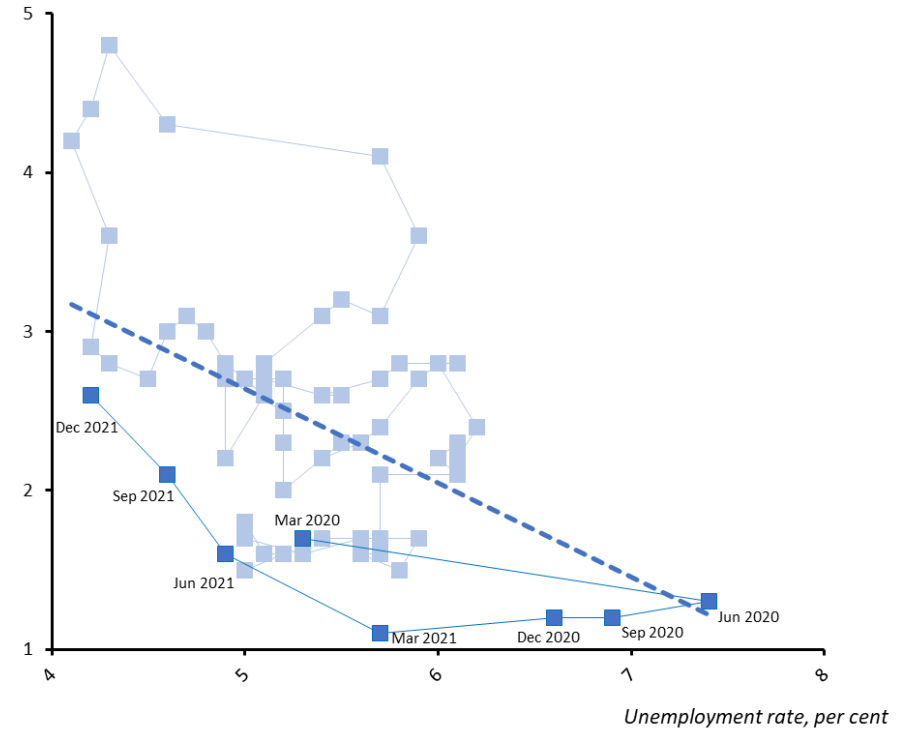
CPI trimmed mean, per cent change over year, sa



Source: Bloomberg, ABS and AICD.

Australia: Inflation and unemployment, 2003:Q2 to 2021:Q4

CPI trimmed mean, per cent change over year, sa

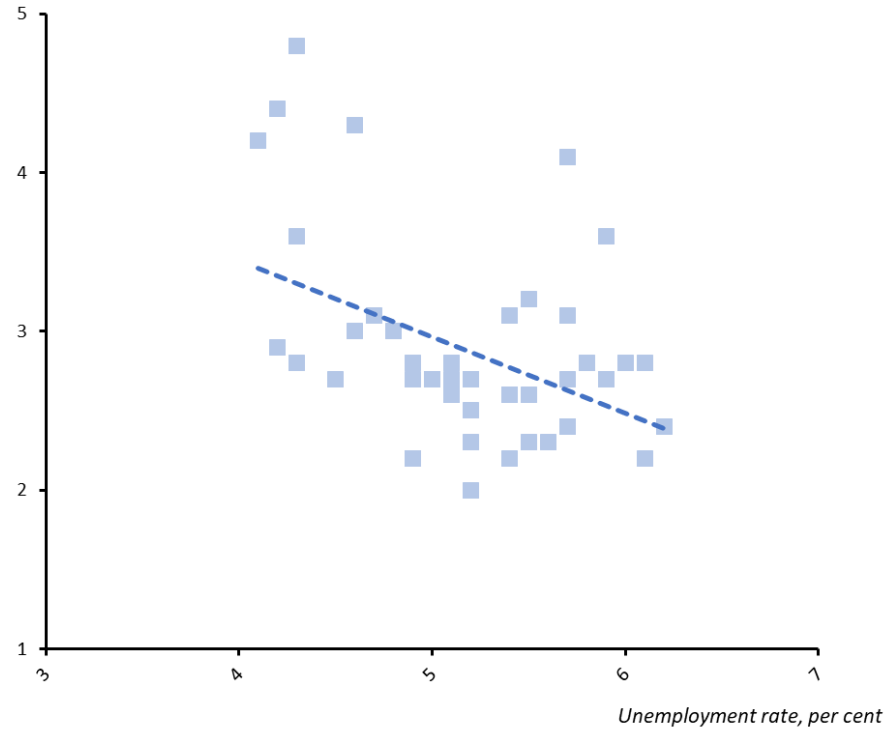


Source: Bloomberg, ABS and AICD.

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

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

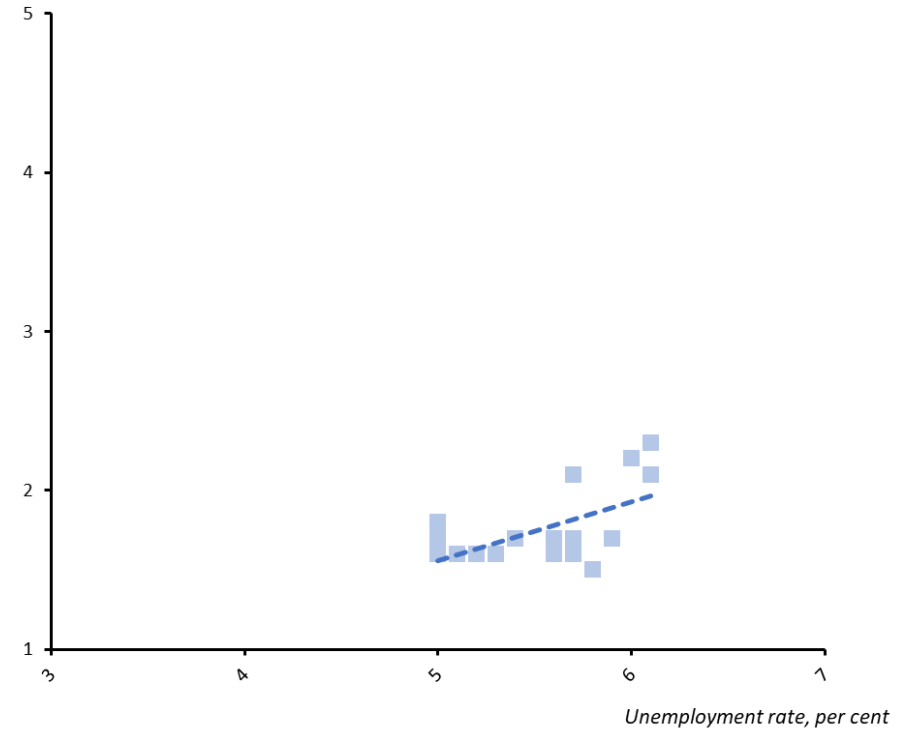
CPI trimmed mean, per cent change over year, sa



Source: Bloomberg, ABS and AICD.

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

CPI trimmed mean, per cent change over year, sa

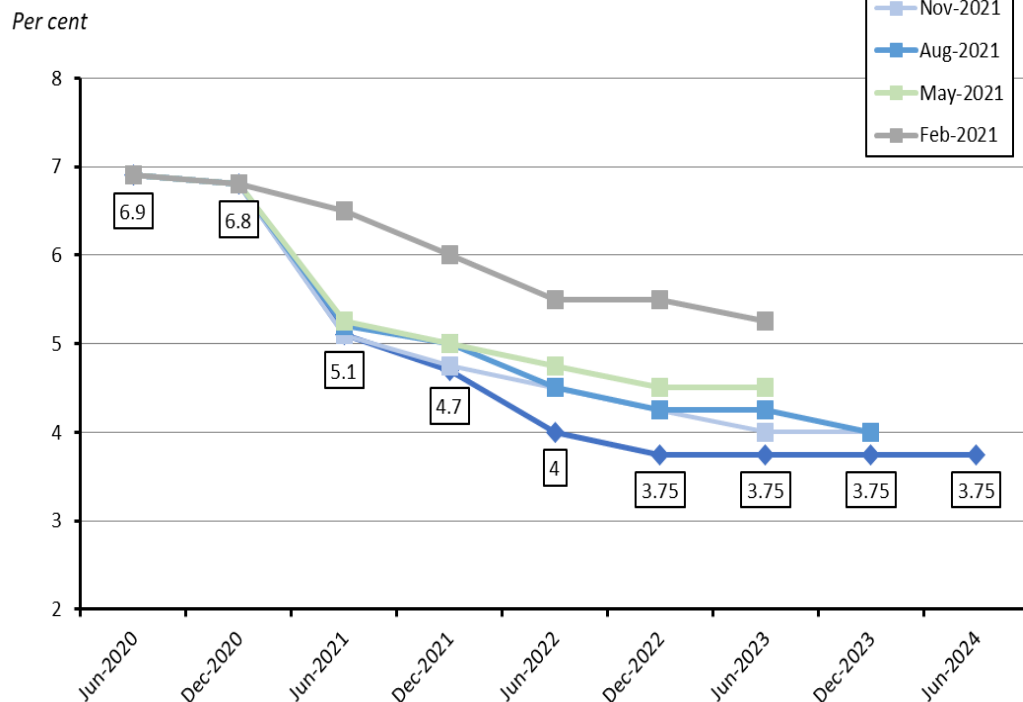


Source: Bloomberg, ABS and AICD.

RBA labour market forecasts

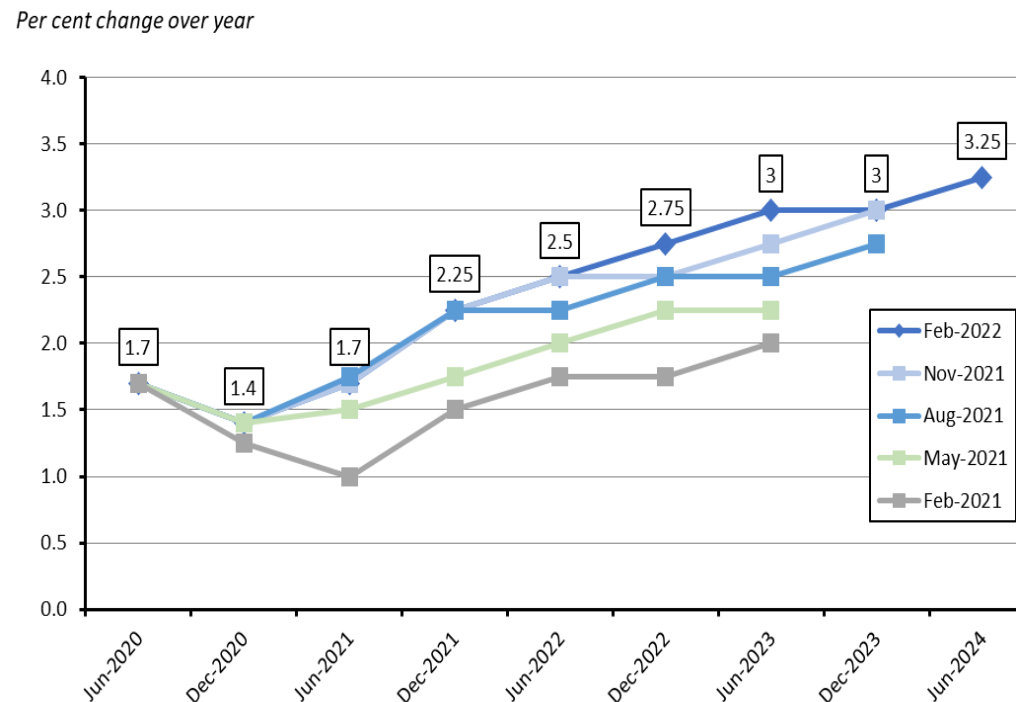
The RBA's February 2022 *Statement on Monetary Policy* also saw significant improvements in the central bank's unemployment and wage forecasts. The new forecasts now see the unemployment rate below 4% by the of this year. That would be the first sub-4% unemployment rate since the early 1970s. At the same time, there have been only modest upgrades to wage forecasts, with the WPI now predicted to rise to 3% by mid-2023 and to 3.25% by mid-2024. The central bank continues to assume a significant degree of inertia in Australian wages in the face of very tight labour market conditions.

Australia: RBA forecasts for unemployment rate (quarterly average)



Source: RBA *Statement on Monetary Policy (SOMP)*, various. Labels for historical data and February 2022 SOMP projections only.

Australia: RBA forecasts for Wage Price Index (WPI)

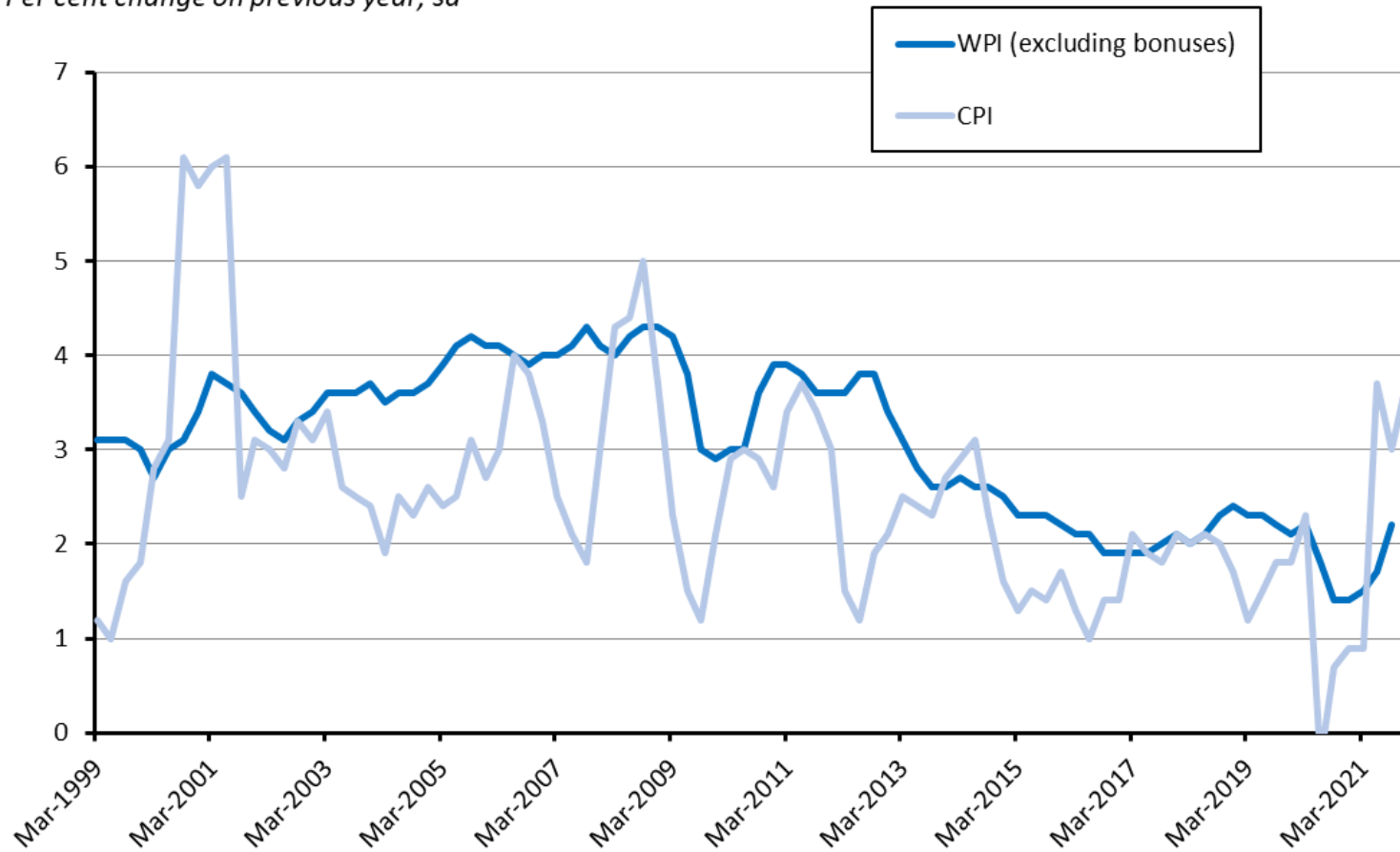


Source: RBA *Statement on Monetary Policy (SOMP)*, various. Labels for historical data and February 2022 SOMP projections only.

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 December quarter 2021 for prices, September quarter 2021 for wages.**

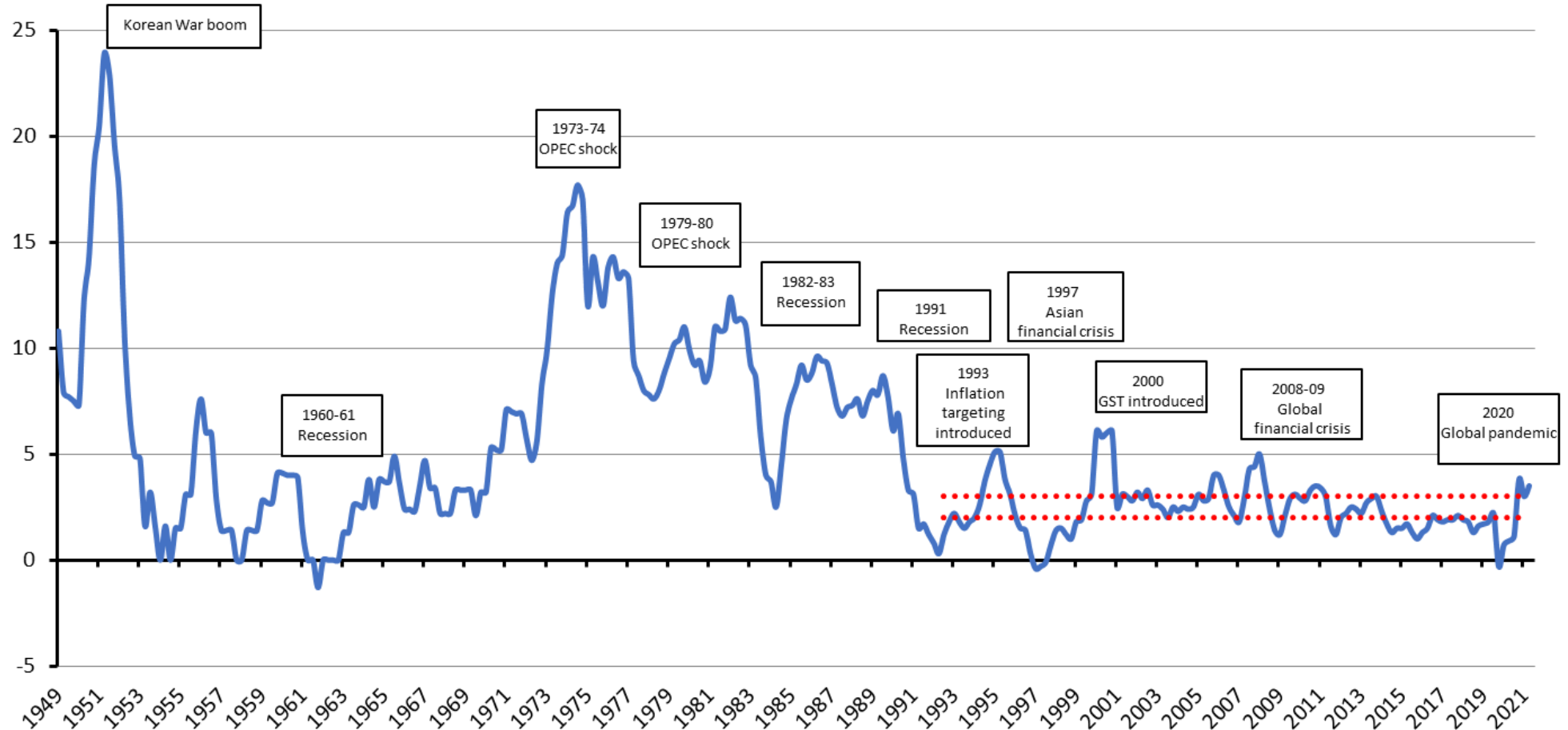
SEVEN

Inflation in the long run

Consumer Price Inflation since 1949

Australia: Annual CPI changes

Per cent change over previous year

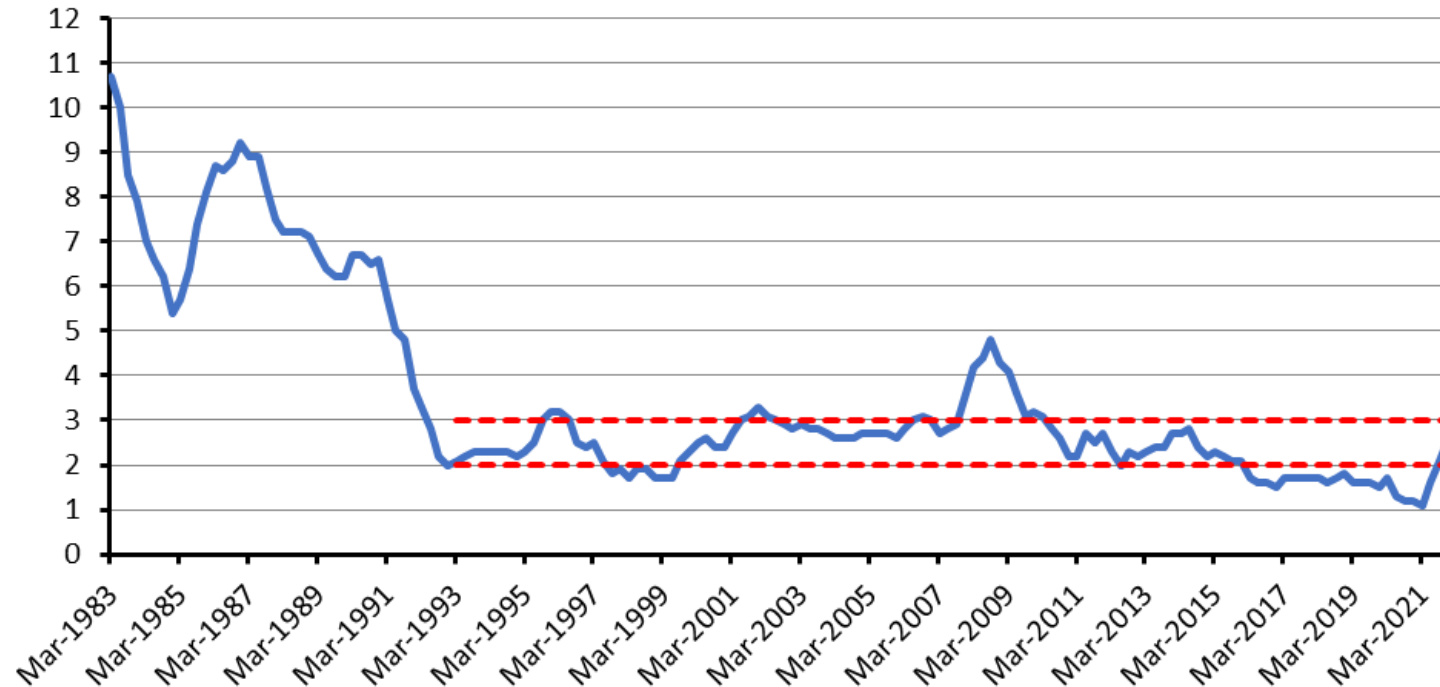


Source: Bloomberg and ABS. Inflation targeting starts in 1993.

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.

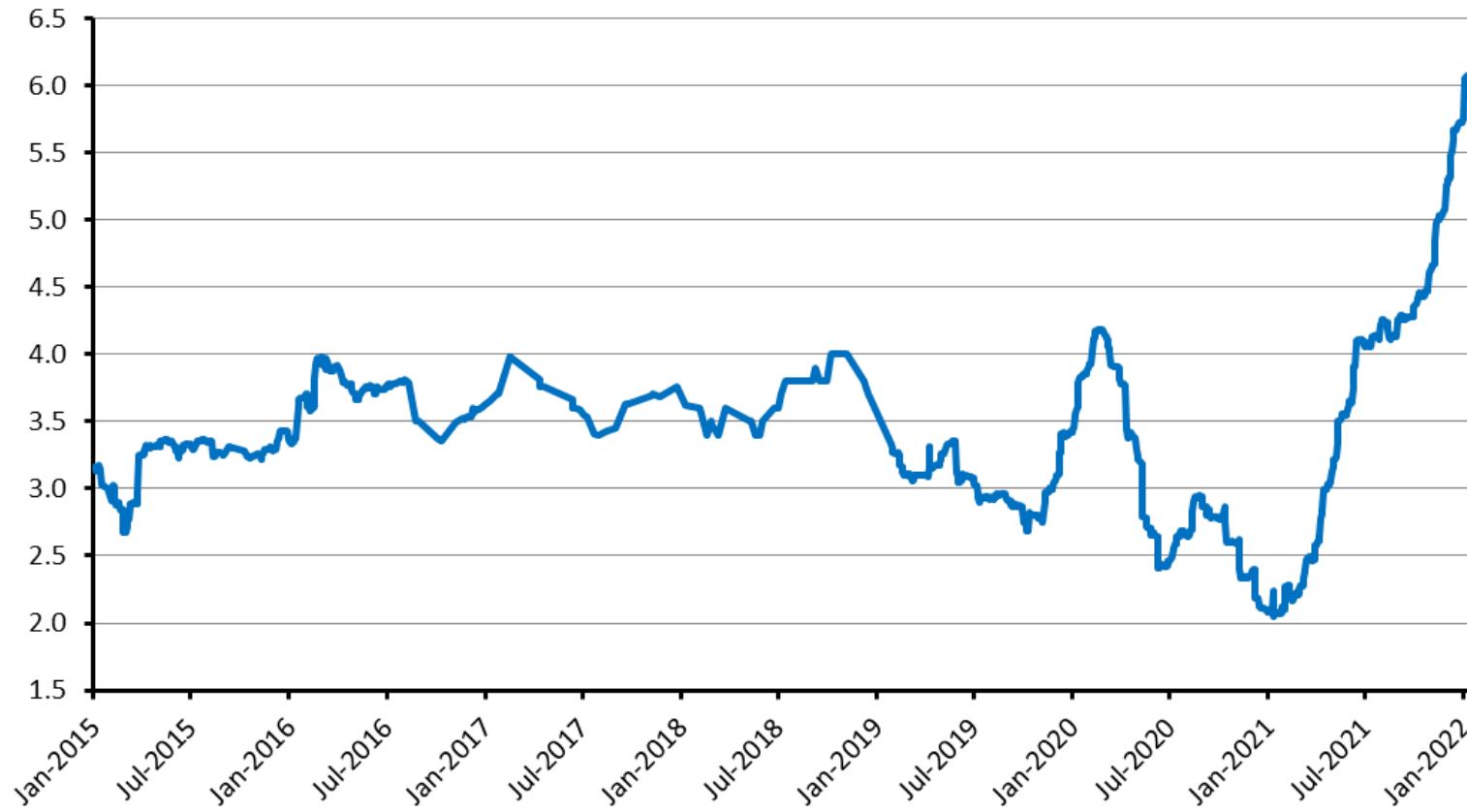
EIGHT

Inflation in the Global Economy

World Inflation – Daily tracker

Global: World inflation rate

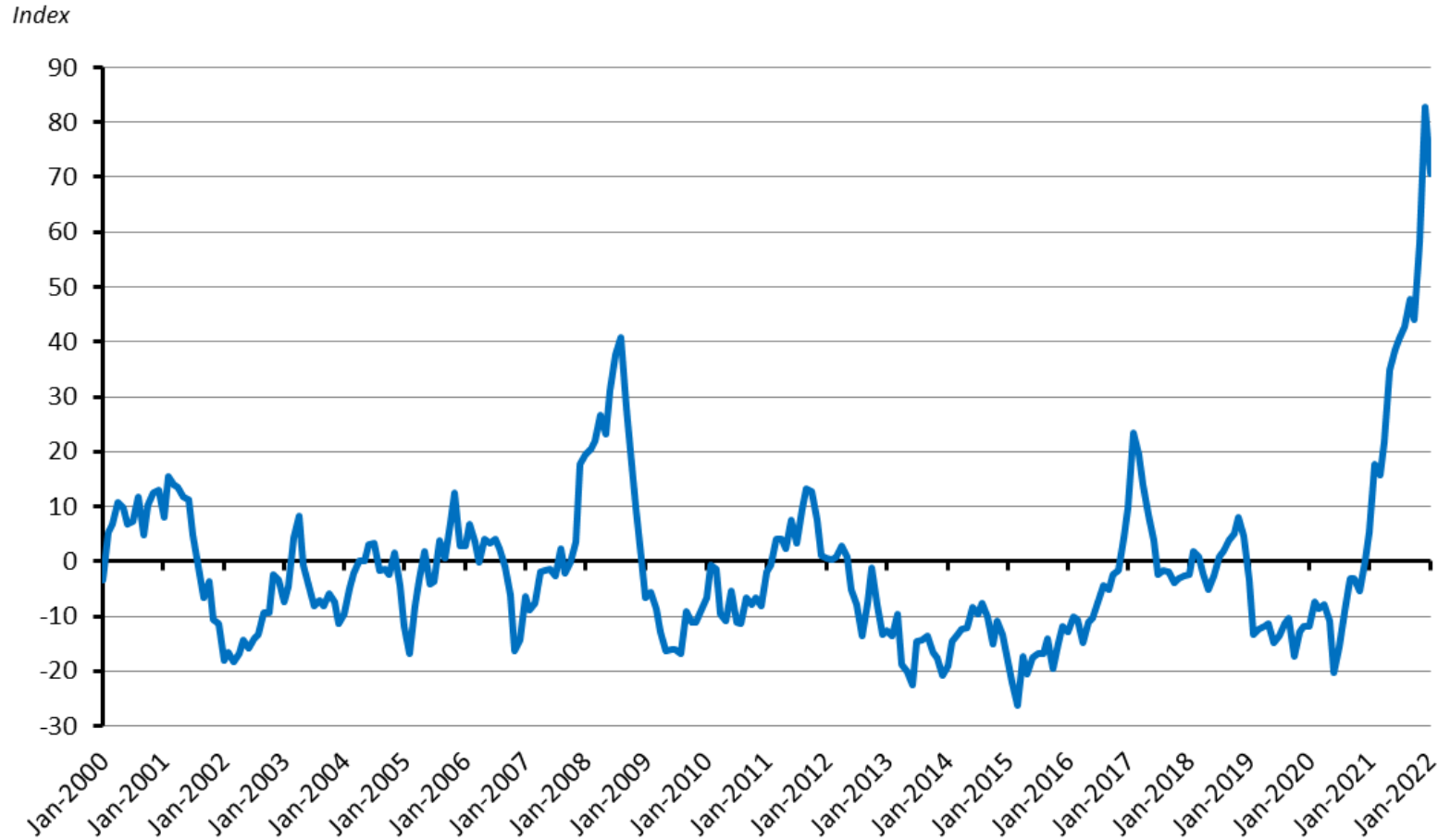
Per cent change over year



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 7 February 2022.**

How is inflation tracking against expectations?

Global: Citi inflation surprise index

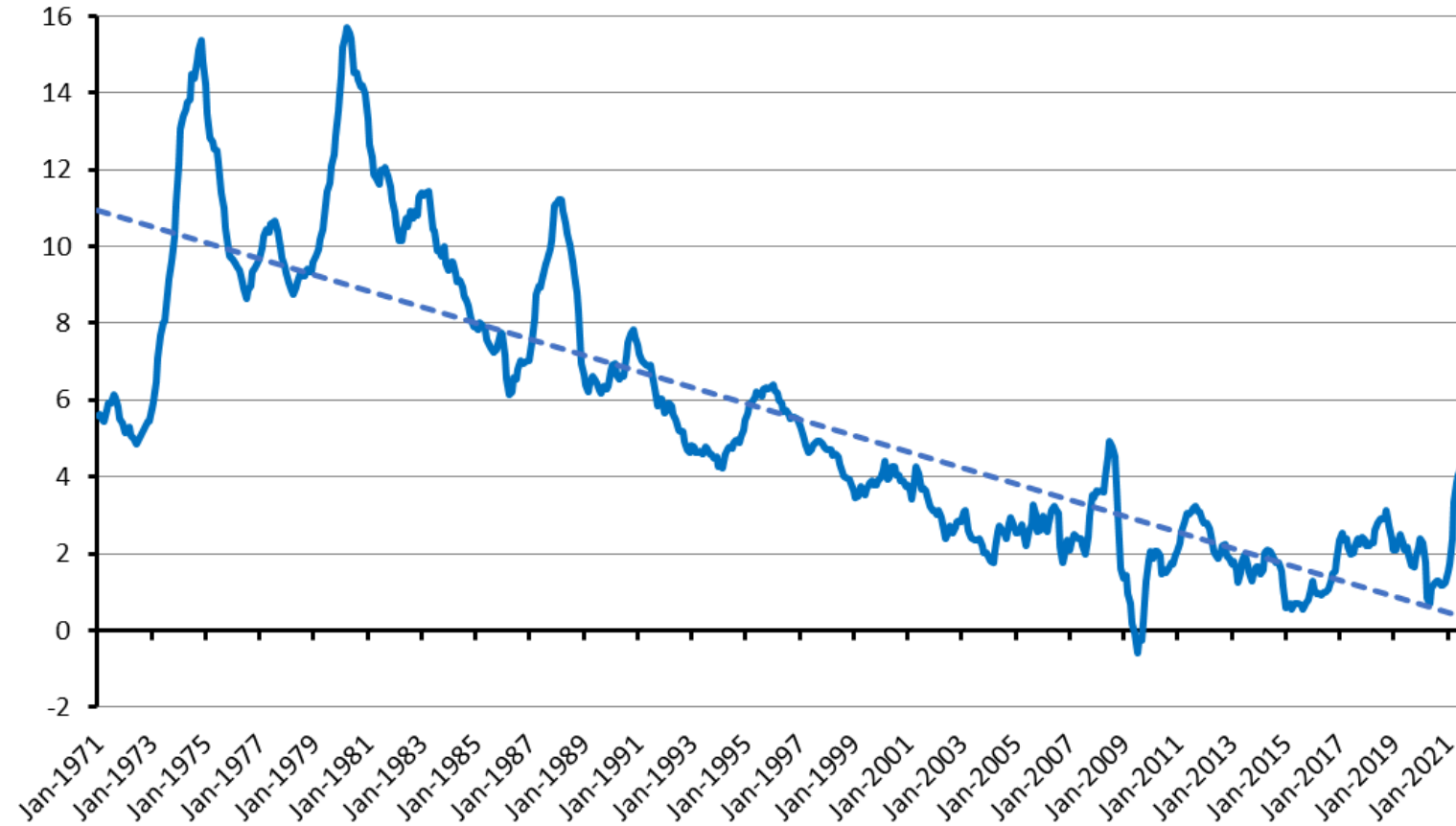


Source: Bloomberg. Index shows difference between expected and actual inflation. the higher the index, the more inflation is surprising to the upside, and vice versa. **Data to January 2022.**

OECD inflation rate in the long run

OECD: Consumer Price Inflation

Per cent change over year

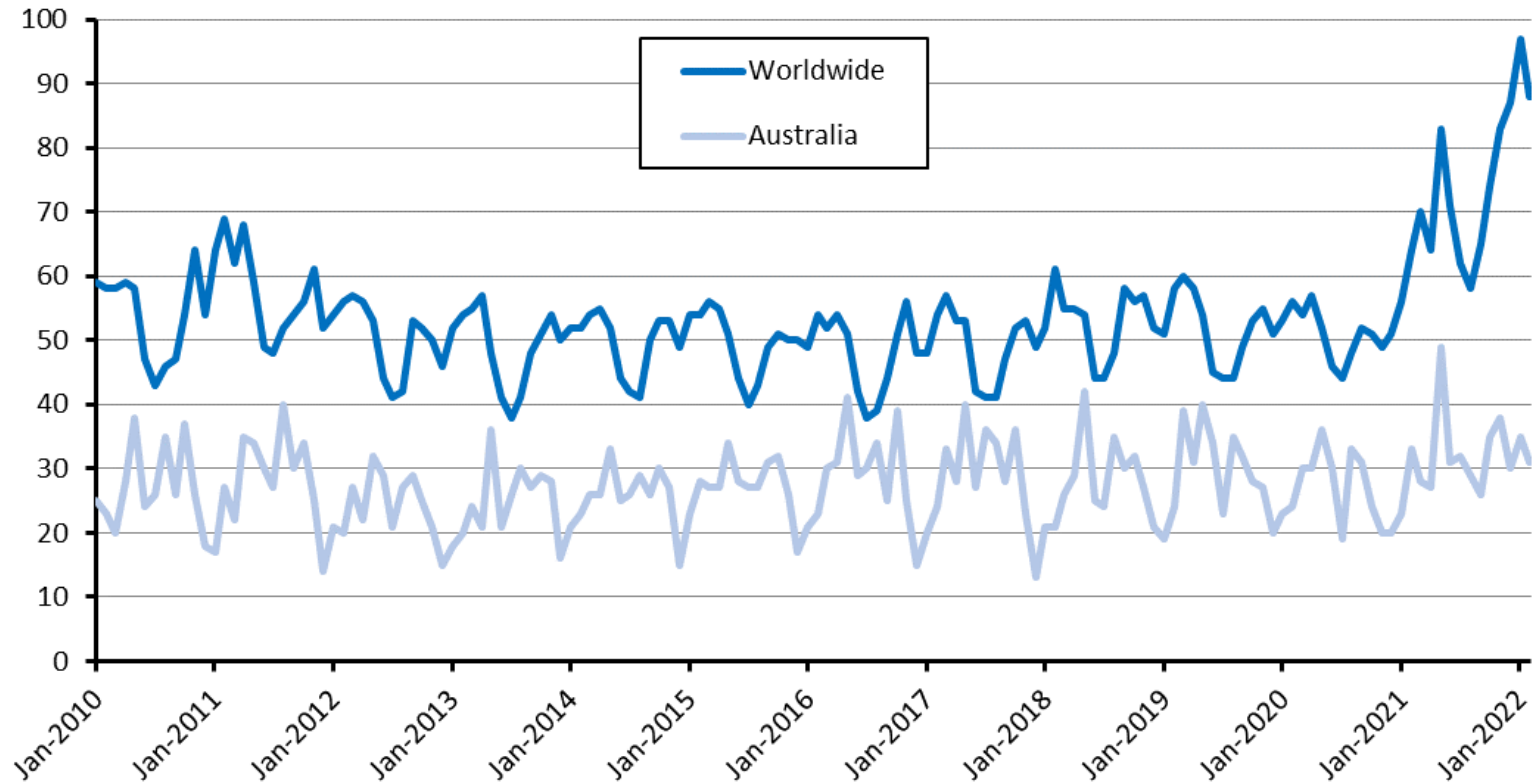


Source: Bloomberg. Weighted monthly CPI inflation for 37 OECD member economies. Fitted line is simple linear trend. **Data to December 2021.**

Google trends: Australia vs World

World: Google Trends - Web searches for 'inflation'

Interest over time, Index ranging from 0 to 100



Source: Google Trends. **Data to late early February 2022.** Numbers represent search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term, 50 means that the term is half as popular, and a score of 0 means there was not enough data for this term.



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