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An Input-cost Decomposition of the Household Consumption Deflator

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Photo: rudi suardi – Getty Images

Abstract

Understanding the drivers of inflation is important for monetary policy. Focusing on the recent period of elevated inflation, this article examines how input costs (defined broadly as labour costs, business owner returns, dwelling rents and import prices), along with net taxes, have contributed to consumer price growth. Specifically, growth in the household consumption deflator is decomposed into contributions from each of these factors, extending an approach proposed by Hansen, Toscani and Zhou (2023). The decomposition shows that labour costs, business owner returns, dwelling rents and import prices have all contributed to elevated consumer price inflation since the COVID-19 pandemic, though their relative importance has varied over time.

Introduction

Inflation picked up sharply following the COVID-19 pandemic and has been above the RBA's 2–3 per cent inflation target range for most of the period since then. Understanding the drivers of the increase in inflation is important for monetary policy because different drivers are likely to reflect different underlying economic forces, which can have implications for the appropriate monetary policy response. Strong growth in labour costs and/or business owner returns could be a signal that there is excess demand in the economy and that monetary policy tightening is needed to bring the economy back into balance. By contrast, other forms of price growth (e.g. import prices) could instead reflect supply shocks that central banks may be able to look through if they are expected to resolve quickly and inflation expectations remain anchored. Depending on the drivers, a given rate of inflation can therefore imply a different set of risks for the outlook.

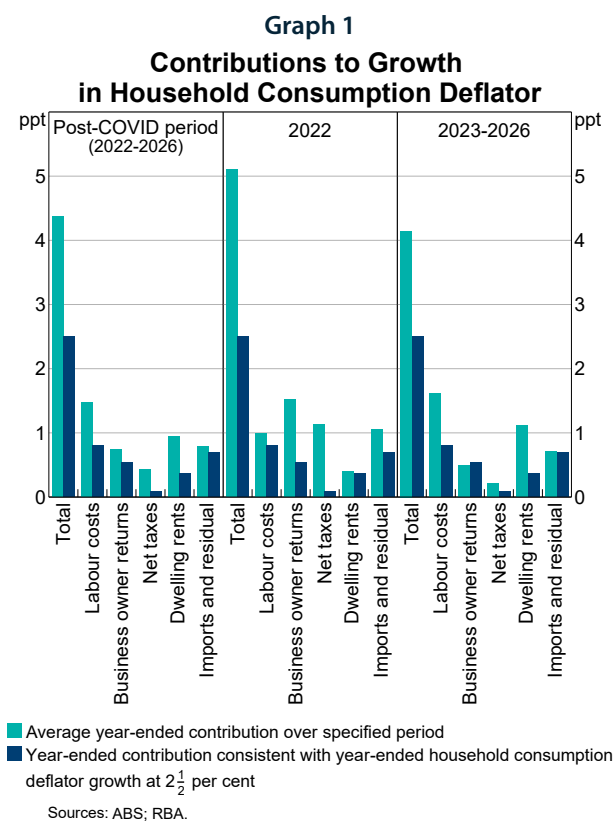
A variety of approaches have been taken in previous RBA analysis to understand the drivers of inflation. For example, estimating statistical relationships between inflation and its theoretical determinants (Cassidy *et al* 2019), decomposing the relative contributions of supply and demand factors (Beckers, Hambur and Williams 2023), analysing businesses' pricing behaviour (Fink and Hambur 2026; Hunter 2026) and assessing the role of specific components and/or sectors in aggregate outcomes (Plumb 2026; RBA 2026). This article adds another perspective, decomposing growth in the household consumption deflator – a measure of the prices paid by households for the goods and services they consume – into contributions from input costs. I use the term 'input costs' in this article to refer to the returns flowing to the factors of value-added production in the National Accounts, as well as the cost of imports. I use the approach in Hansen, Toscani and Zhou (2023), though I extend their methodology to incorporate dwelling rents.¹ My analysis focuses on the period of elevated inflation since the COVID-19 pandemic.

For clarity, 'business owner returns' is used as a shorthand term for gross operating surplus (GOS) and gross mixed income (GMI) in the National Accounts. GOS includes both economic profit (i.e. the excess return to a business associated with factors such as market power or scarcity) and the return on capital used in production (i.e. the income required to compensate the owners of capital for the value generated by non-labour inputs used in production, depreciation, risk and the cost of financing investment). GMI captures the income earned by sole traders and small business owners, which conceptually includes both labour and capital income. As such, business owner returns can increase without businesses increasing their mark-up over marginal cost and may instead reflect other factors, such as that the cost of owning capital has risen.

Key findings

The decomposition in Graph 1 shows that from 2022 (when inflation picked up materially) to early 2026:

- All input costs contributed to growth in the household consumption deflator being above 2½ per cent.
- The relative size of the contribution from each input has varied over the period. Import prices and business owner returns accounted for a larger share of growth in the household consumption deflator immediately following the COVID-19 pandemic, with price pressures later shifting towards labour costs and dwelling rents.
- On average over the post-pandemic period, the contribution to overall price growth has been broadly based across inputs and relatively in line with its share in production.



What is the household consumption deflator?

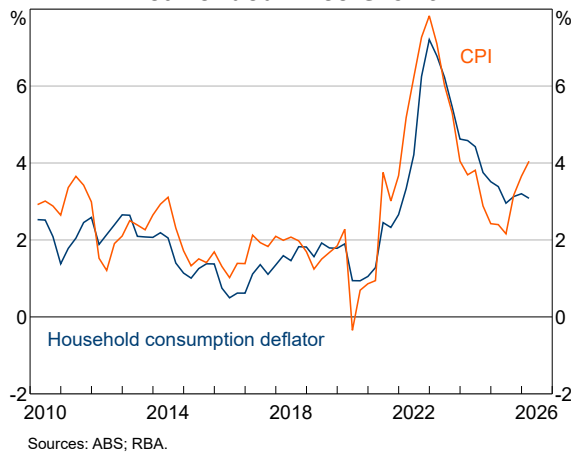
The household consumption deflator is a broad measure of the prices households pay for the goods and services they consume within a given period. It is an implied price index derived by dividing the value of household consumption by the volume of household consumption. It is produced as part of the National Accounts, rather than as a standalone price index.

The household consumption deflator captures similar underlying trends in inflation to the more commonly cited Consumer Price Index (CPI), though there are some important differences between the two measures (ABS 2020) (Graph 2). The most significant differences are:

- The household consumption deflator reflects changes in both the prices of goods and services that households buy and the composition of those purchases, while the CPI reflects price changes only. The weights of different goods and services in the household consumption deflator vary each period in line with actual spending, while the weights in the CPI are only updated annually using recent spending patterns.
- The treatment of some goods and services across the two measures varies and the weights of common expenditure categories are generally not the same. The most significant difference is the treatment of owner-occupier housing costs. The household consumption deflator measures owner-occupier housing costs as the cost that a homeowner would pay if they rented their home (referred to as 'imputed rents'), while the CPI captures the cost of constructing a new dwelling (referred to as 'new dwelling purchases').
- Net taxes are treated differently in the two measures, with most divergences driven by changes to government subsidies. The household consumption deflator is constructed using listed prices for goods and services that may not change with the introduction or removal of subsidies, while the CPI measures the out-of-pocket cost to a household of purchasing a particular good or service. For example, the introduction of government electricity bill rebates for households over recent years lowered measured electricity prices in the CPI as households paid less for the same quantity of electricity. But the rebates did

not affect electricity costs in the household consumption deflator as the listed price of electricity did not change.

Graph 2
Year-ended Price Growth



Growth in headline CPI was faster to pick up, faster to moderate, and peaked at a higher level than growth in the household consumption deflator during the recent period of elevated inflation. There are many reasons for this, but the different treatment of owner-occupier housing across the two measures was the most significant. Inflation in new dwelling purchases (i.e. the CPI measure of owner-occupier housing costs) grew at a much faster rate than imputed rents (i.e. the household consumption deflator measure of owner-occupier housing costs) between late 2021 and early 2023 and moderated more quickly from late 2023. Strong growth in fuel prices also contributed to the CPI growing more strongly than the household consumption deflator between late 2021 and mid-2022, as fuel has a larger weight in the CPI. More recently, the introduction and unwinding of government electricity bill rebates has contributed to volatility in the CPI but has had no effect on the household consumption deflator.

Decomposing the household consumption deflator

One way of thinking about the source of changes in consumer prices is to trace them back to the costs of the inputs used in producing consumption goods and services for households. At a broad level, there are four key input costs:

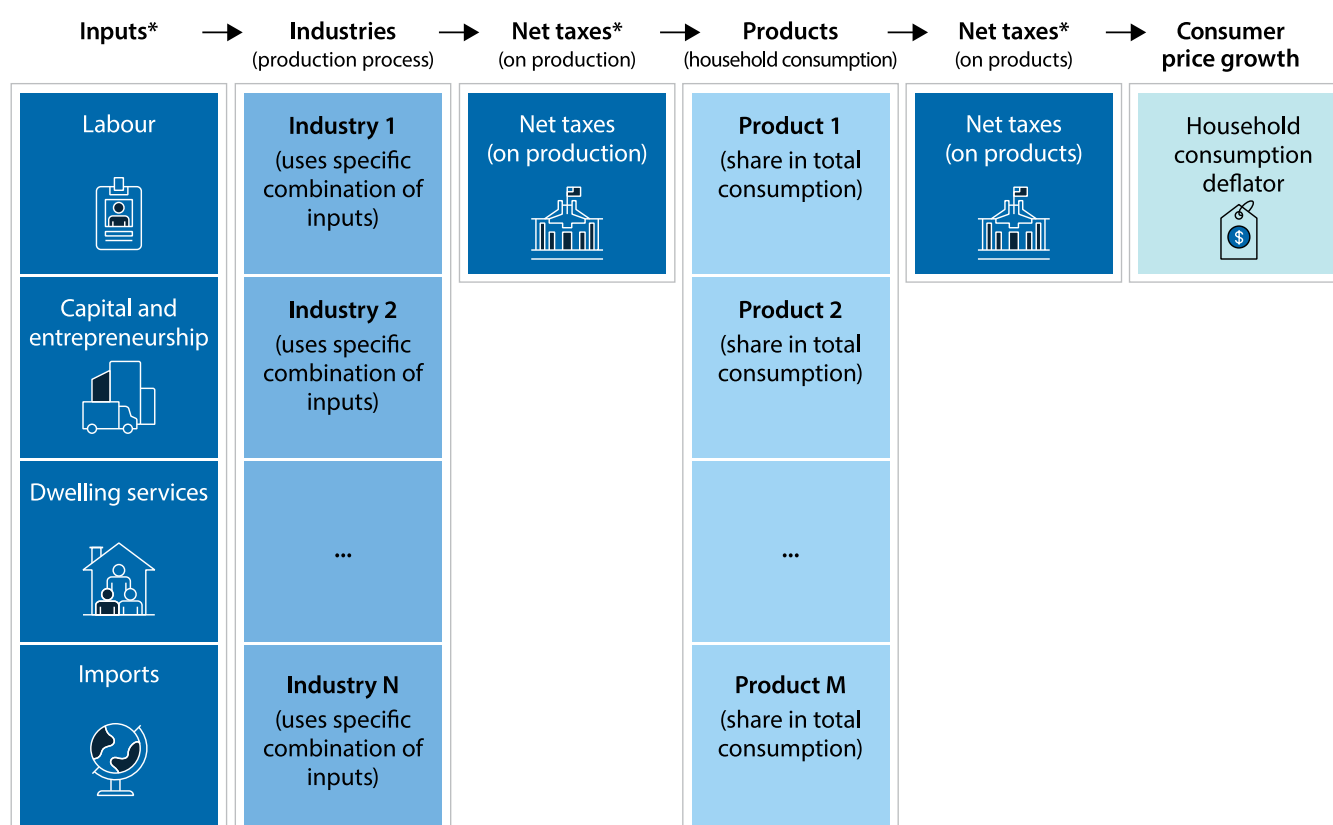
- labour costs
- business owner returns
- dwelling owner rental returns
- prices for imported inputs paid to overseas producers.

In addition, net taxes on the production and sale of goods and services affect the prices paid by consumers for those goods and services.

The extent to which each of these costs contribute to aggregate price growth depends on its role in the production process (Figure 1). Inputs that are used more intensively will have a larger effect on prices for a given change in their cost. Similarly, price changes in goods and services that account for a larger share of total household spending will have a greater influence on aggregate inflation.

In practice, the supply chains for the goods and services consumed by households are complex. A simple example is the production of a loaf of bread. While a bakery may produce and sell the final product, the bakery requires inputs from a range of other industries to operate, including agriculture (to supply wheat), utilities (to supply electricity), logistics (to transport goods from suppliers) and business services (to provide bookkeeping services). Different industries typically use different combinations of inputs as some goods and services require more capital to produce (e.g. electricity generation relies on a range of physical capital such as power stations), while others require more labour. Labour may also not be substitutable across industries and the balance of labour supply and labour demand may vary by industry such that labour costs may evolve differently across industries.

The decomposition presented in this article incorporates the features noted above by mapping changes in the costs of each production input at the industry level to growth in the household consumption deflator. These contributions are weighted to reflect both the

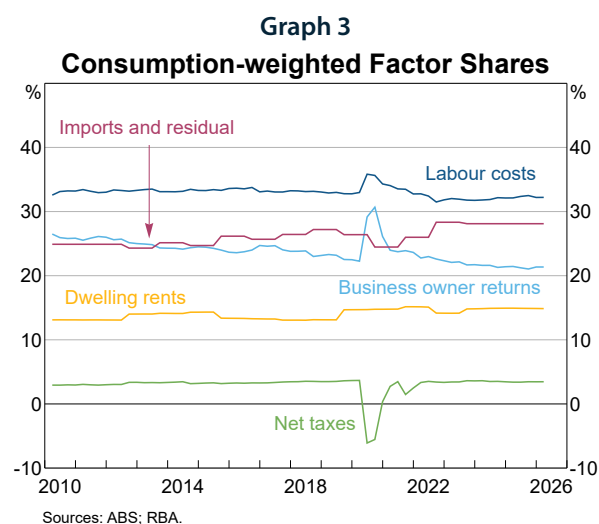
Figure 1: Tracing the Links Between Input Costs and the Household Consumption Deflator

* Weighted by share in production and household consumption.

Source: RBA.

importance of each input in production and the share of each good or service in household consumption. The weights are derived from the input-output tables from the Australian Bureau of Statistics and are known as the factor share of production for each input (Graph 3). Labour costs, business owner returns, dwelling rents and net taxes on production are included explicitly, while the remaining unexplained component (referred to as the 'residual') is assumed to primarily reflect import prices. Further mathematical detail is provided in Appendix A.

As in Hansen, Toscani and Zhou (2023), the weights used in my decomposition consider the role of intermediate inputs used through the entire supply chain, in addition to those used by the final seller. This is an important feature as it provides a more complete picture of where inflationary pressures are coming from, given that many products purchased by households are produced using inputs from a wide range of industries. As a result, industries that interface more directly with consumers (e.g. retail trade) receive a lower weight than in the case where only the contribution of the final seller is



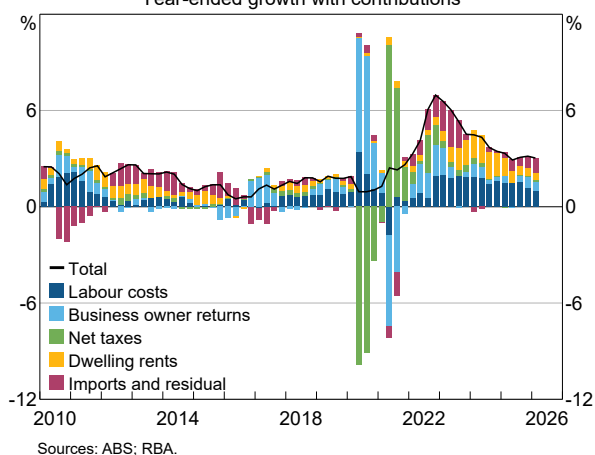
considered, while industries that primarily provide services to businesses receive a higher weight than otherwise. Imports also receive a greater weight when intermediate inputs are considered, as imported intermediate inputs play a significant role in domestic supply chains.

A limitation of my decomposition is that it provides descriptive evidence only. It shows how changes in different input costs and net taxes have contributed to growth in consumer prices over time, but does not shed light on why those input costs have changed. The causes of changes in input costs can matter for their ultimate impact on inflation; for example, as Davis *et al* (2026) argue in relation to businesses' profit margins. Further, as noted above, business owner returns also capture the return on capital used in production and can increase without businesses increasing their mark-up over marginal cost.

Contributions since the COVID-19 pandemic

My decomposition shows that all input costs have made positive and, at times, large contributions to growth in the household consumption deflator since the COVID-19 pandemic (Graph 4). An important feature of growth in the household consumption deflator over this period is that the relative contributions of different inputs varied over time, with certain inputs playing a larger role in aggregate price growth at different points. Import prices and business owner returns picked up first following the COVID-19 pandemic, but price pressures from these sources eased from 2023 onwards. They were replaced by strong growth in labour costs and dwelling rents, consistent with tight conditions in labour and housing markets.²

Graph 4
Household Consumption Deflator – Input Costs
Year-ended growth with contributions



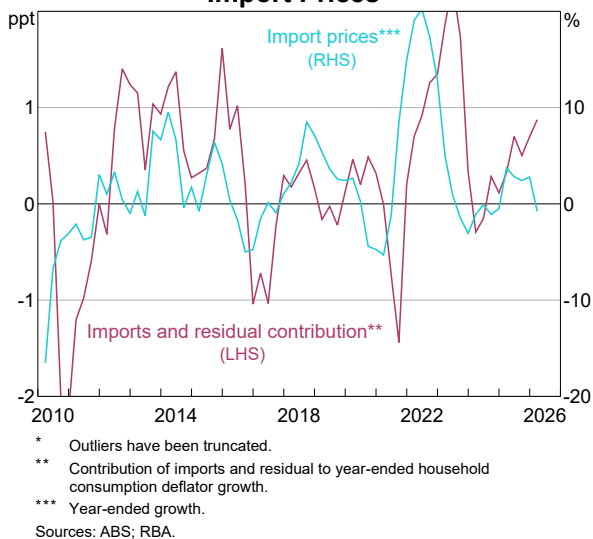
Nevertheless, some differences in the timing of input cost increases are to be expected as different costs exhibit different degrees of stickiness. On average over the period, growth in the household consumption deflator has been driven by a broad-based increase in the costs of all inputs. A more structured way of thinking about this is to compare actual contributions over recent years to the implied contributions in some hypothetical case. For example, when all input costs grow at the same rate, each input contributes to growth in the household consumption deflator at a rate proportional to its role in the production of goods and services for household consumption (i.e. its factor share).³ Importantly, this hypothetical is intended to be illustrative, rather than a realistic description of how input cost growth would be expected to evolve. All input costs growing at the same rate assumes that the economy is in equilibrium, which is rarely the case. Further, different input costs may respond to a given shock in distinct ways and this does not, in and of itself, indicate unusual behaviour. Factor shares can also change over time if the types of goods and services consumed by households shift or if cost growth in a particular input diverges from others for a period. For example, the factor share of business owner returns has fallen over time, largely driven by slower growth in GMI relative to other input costs.

Under this hypothetical, it is also possible to derive contributions from each input consistent with inflation at 2½ per cent, which is the midpoint of the RBA's 2–3 per cent inflation target range. While the inflation target is defined relative to the CPI and not the household consumption deflator, Graph 2 shows that the two measures follow a similar trend. Graph 1 compares the decomposition of growth in the household consumption deflator to a hypothetical where the deflator – and each component input cost – grows at 2½ per cent. This example suggests that all input costs have contributed to the household consumption deflator growing above 2½ per cent. Further, growth in the various input costs has been distributed largely in line with shares in production with some small deviations. Dwelling rents, labour costs and net taxes made slightly larger contributions than would be implied by their production shares, while import prices and business owner returns have made slightly smaller contributions.

The initial increase in prices in 2022

Inflation began to rise sharply from mid-to-late 2021. A significant portion of this initial increase in growth in the household consumption deflator falls into the residual of the decomposition. While the residual generally captures both import prices and sales taxes, its movement closely tracked growth in import prices over most of this period (Graph 5). The contribution from the residual picked up strongly from early 2022, coinciding with a sharp rise in global inflation, international supply chain disruptions and a depreciation of the Australian dollar. This finding is consistent with Beckers, Hambur and Williams (2023), who attribute a large share of the pick-up in CPI inflation in early 2022 to supply-side factors (which included a significant global component).

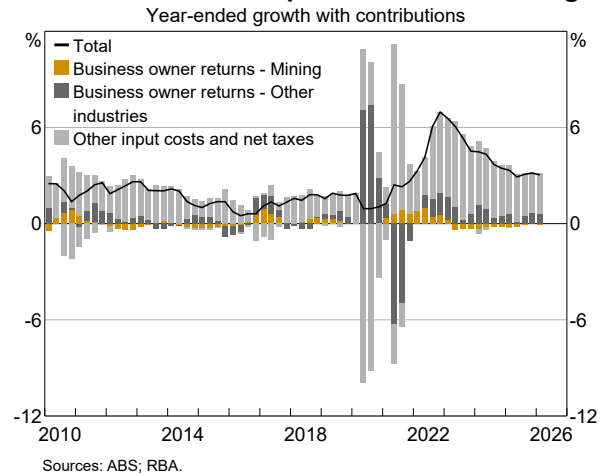
Graph 5
Import Prices*



Business owner returns also accounted for a significant part of the growth in the household consumption deflator over 2022, though the increase was not uniform across industries. A relatively large share of this contribution can be explained by the mining industry (Graph 6). This is despite the mining industry supplying a small proportion of total inputs to household consumption (less than 2 per cent). Business owner returns in the mining industry grew strongly over 2022 and at a faster rate than business owner returns in other industries, owing to high global commodity prices (Graph 7).

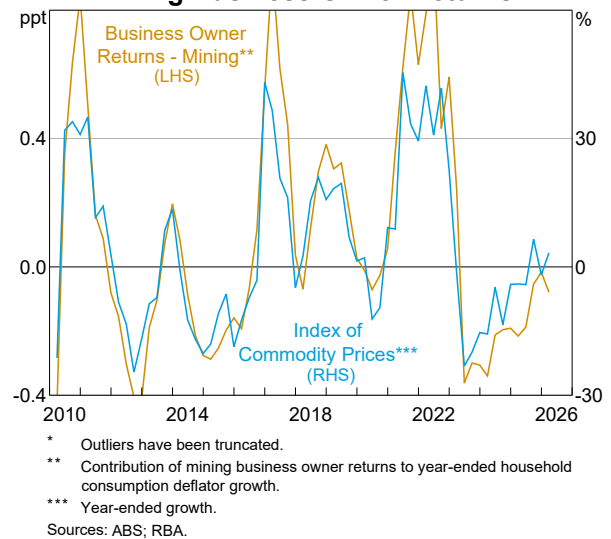
Graph 6

Household Consumption Deflator – Mining



Graph 7

Commodity Prices and Mining Business Owner Returns*



By contrast, labour costs and dwelling rents accounted for a relatively small part of the growth in the consumption deflator over 2022. This reflects that it took some time for tight conditions in the labour and housing markets to flow through to higher labour costs and rental returns, consistent with usual lags.

Business owner returns and net taxes made large, volatile and broadly offsetting contributions to changes in the consumption deflator during the COVID-19 pandemic. This reflects the introduction and subsequent removal of government support measures (particularly JobKeeper) over this period.⁴ These policies continued to have a small effect on the year-ended contributions from business owner returns and net taxes to growth in the household consumption deflator into early 2022.

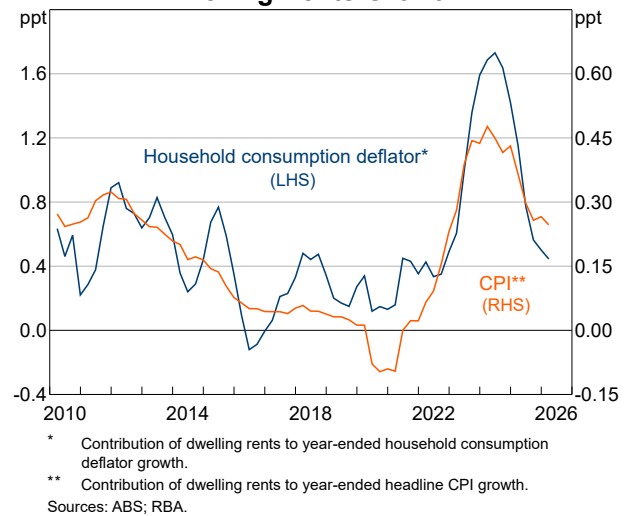
Price growth from 2023 to early 2026

From 2023 to early 2026, growth in the household consumption deflator has increasingly been accounted for by domestic factors. Although labour costs were relatively slow to respond to the initial increase in prices, they have made a large and persistent contribution to growth in the household consumption deflator since late 2022. The relatively slow speed of this pick-up in labour cost growth relative to the increase in business owner returns is consistent with evidence that labour costs are stickier than output prices in Australia, given the prevalence of multi-year enterprise bargaining agreements (Bishop and Cassidy 2019).

Dwelling rents have also made a sizeable and sustained contribution to household consumption deflator inflation since late 2022. Strong growth in dwelling rents over this period reflects the lagged effects of tight conditions in rental markets, with housing demand rising alongside factors such as the return of international migration following the pandemic (Agarwal, Gao and Garner 2023; Hanmer and Marquardt 2023; Hunter 2024; Twohig, Yadav and Hambur 2024). The pattern of rental price growth suggested by the decomposition is broadly consistent with that observed in the CPI, with movements in the two measures tracking each other in trend terms over time (Graph 8). However, the magnitude of the contribution to the household consumption deflator is around three times larger than for the CPI. This is because housing costs for both owner-occupiers and renters are measured by rents in the household consumption deflator, while rents in the CPI cover renters only. Rental subsidies – and particularly changes to Commonwealth Rent Assistance – have also driven divergences between the CPI and household consumption deflator measures of rents. Increases in these subsidies lowered rental inflation in the CPI, but are not captured by the household consumption deflator.

At the same time as domestic cost growth picked up, the contribution from import prices and business owner returns moderated significantly. In fact, business owner returns have dragged on aggregate consumer price growth a little in some quarters.

Graph 8
Dwelling Rents Growth



Conclusion

My decomposition suggests that the period of elevated inflation between 2022 and early 2026 was driven by a broad-based pick-up in the cost of production inputs. The costs of all key inputs to production grew at a faster rate than would be consistent with growth in the household consumption deflator at 2½ per cent. However, the relative contributions of each input have varied over time and so the recent inflationary episode has been characterised by a series of distinct phases. Business owner returns and import prices contributed materially to growth in the household consumption deflator immediately following the COVID-19 pandemic, while labour costs and dwelling rents were slower to rise but have made a more persistent contribution. Nevertheless, the relative contributions from each input have been broadly consistent with its share in production over the period as a whole.

While the framework presented here is descriptive and does not identify the underlying shocks driving the changes in input costs, it provides a useful lens for understanding inflation dynamics over recent years. My decomposition highlights that although the initial rise in inflation following the pandemic contained a significant global supply component, inflationary pressures broadened to include a substantial domestic component from early 2023. Consistent with other RBA analysis, this indicates that the recent inflationary episode has coincided with a period of excess demand in the Australian economy.

Appendix A: Decomposing the household consumption deflator

This appendix sets out the methodology used to generate my decomposition of the household consumption deflator.

Under the assumption that, in any given industry, the inputs used to produce goods and services for domestic consumption are the same as the inputs used to produce any other output, growth in the household consumption deflator can be represented by the following equation:

$$\log(c_t) - \log(c_{t-1}) = \sum_i \lambda_i \left(\frac{\frac{w_{i,t} - w_{i,t-1}}{y_{i,t} - y_{i,t-1}}}{g_{i,t-1}} + \frac{\frac{\pi_{i,t} - \pi_{i,t-1}}{y_{i,t} - y_{i,t-1}}}{g_{i,t-1}} + \frac{\frac{\tau_{p,i,t} - \tau_{p,i,t-1}}{y_{i,t} - y_{i,t-1}}}{g_{i,t-1}} + \frac{\frac{r_{i,t} - r_{i,t-1}}{y_{i,t} - y_{i,t-1}}}{g_{i,t-1}} \right) + \Delta I + \Delta \tau_s$$

where:

- c is the household consumption deflator
- λ_i is the share of consumption produced by industry i derived from the input-output tables according to the method in Rayner and Bishop (2013)
- w is labour costs
- π is business owner returns
- τ_p is net taxes on production
- r is dwelling rents
- y is real gross value added
- g is the gross value added deflator
- l is import prices
- τ_s is sales taxes.

The decomposition relies on the assumption that each industry uses an identical combination of the domestic inputs regardless of who they are producing for. This assumption is required because industry-level input costs are not specific to the purchaser. The production of electricity – which is an important input to many production processes across the economy – is a useful example of what this means in practice. The decomposition assumes that utilities companies use the same mix of workers and machinery to produce electricity, whether that electricity is used by households, businesses or the government. While this assumption is likely to hold at the level of individual goods and services – and particularly for undifferentiated goods like electricity – it may be violated in industries that produce a relatively diverse range of goods and services in which households, businesses and the government consume very different mixes of products. For example, businesses purchase more specialised computing and electrical equipment than households and the manufacture of this specialised equipment may require a different mix of inputs.

Appendix B: Equilibrium contributions from input costs to household consumption deflator growth

This appendix sets out a mathematical proof for the contributions from each production input to growth in the household consumption deflator when all costs grow at the same rate. Uniform cost growth is one way of characterising the conditions that could occur if the economy was in equilibrium.

Assume that all inputs grow at a constant rate (equal to x) while real output is unchanged over time (equal to Y). This is equivalent to assuming that all unit costs – the cost of using a given input to produce one additional unit of output – grow at the same rate as aggregate output prices. Let $\tilde{y}_{i,t}$ denote nominal gross value added in industry i at time t .

Impose these constraints on the equation in Appendix A and rearrange as shown:

$$\log(c_t) - \log(c_{t-1}) = \sum_i \lambda_i \left(\frac{\frac{w_{i,t}(1+x) - w_{i,t}}{Y}}{\frac{\tilde{y}_{i,t}}{Y}} + \frac{\frac{\pi_{i,t}(1+x) - \pi_{i,t}}{Y}}{\frac{\tilde{y}_{i,t}}{Y}} + \frac{\frac{\tau_{p,i,t}(1+x) - \tau_{p,i,t}}{Y}}{\frac{\tilde{y}_{i,t}}{Y}} + \frac{\frac{r_{i,t}(1+x) - r_{i,t}}{Y}}{\frac{\tilde{y}_{i,t}}{Y}} \right) + (\Delta I_t + x)$$

$$\log(c_t) - \log(c_{t-1}) = \sum_i \lambda_i \left(\frac{w_{i,t}(1+x-1)}{\tilde{y}_{i,t}} + \frac{\pi_{i,t}(1+x-1)}{\tilde{y}_{i,t}} + \frac{\tau_{p,i,t}(1+x-1)}{\tilde{y}_{i,t}} + \frac{r_{i,t}(1+x-1)}{\tilde{y}_{i,t}} \right) + (\Delta I_t + x)$$

$$\log(c_t) - \log(c_{t-1}) = x \times \sum_i \lambda_i \left(\frac{w_{i,t}}{\tilde{y}_{i,t}} + \frac{\pi_{i,t}}{\tilde{y}_{i,t}} + \frac{\tau_{p,i,t}}{\tilde{y}_{i,t}} + \frac{r_{i,t}}{\tilde{y}_{i,t}} \right) + (\Delta I_t + x)$$

The four terms within the brackets inside the summation are the respective factor shares of each input in industry i . The sum of these terms is equal to 1 by construction, since the four terms capture all the domestic inputs used in production and gross value added is net of imports in the National Accounts. This implies that per unit of domestically generated price growth, a given input (given by $z_{i,t}$) will contribute:

$$\text{Contribution of } z_{i,t} \text{ to change in household consumption deflator} = \frac{x \times \sum_i \lambda_i \frac{z_{i,t}}{\tilde{y}_{i,t}}}{x \times \sum_i \lambda_i}$$

$$= \frac{\sum_i \lambda_i \frac{z_{i,t}}{\tilde{y}_{i,t}}}{\sum_i \lambda_i}$$

The contribution of each input is simply a consumption-weighted sum of industry-level factor shares, adjusted for the share of consumption that is produced domestically.

Endnotes

- * The author is from Economic Analysis Department. The author would like to thank Michelle Bergmann, Tomas Cokis, Iris Day, Jonathan Hambur, Martin McCarthy and Tom Williams for their help with this article.
- 1 Similar work decomposing consumer price indices overseas can be found in Dhingra (2023), Haskel (2023) and Schneider (2025).
- 2 The labour market was tightest in 2022, but it took some time for this to translate into higher labour costs, consistent with historical relationships. Housing market conditions were tightest in 2023, with dwelling rents also responding with a delay.
- 3 See Appendix B for a mathematical proof.
- 4 This is because these policies shifted some of the cost of the economy's wage bill to the government. This meant that while labour costs were maintained from an individual's perspective, labour costs from a business's perspective fell significantly and by more than output, resulting in a temporary increase in business owner returns. The level of business owner returns later normalised as the policies were removed and businesses again became responsible for their wage costs.

References

- Agarwal N, R Gao and M Garner (2023), 'Renters, Rent Inflation and Renter Stress', *RBA Bulletin*, March.
- ABS (2020), 'Understanding the Differences in Price Measures', ABS Article, 2 September.
- Beckers B, J Hambur and T Williams (2023), 'Estimating the Relative Contributions of Supply and Demand Drivers to Inflation in Australia', *RBA Bulletin*, June.
- Bishop J and N Cassidy (2019), 'Wages Growth by Pay-setting Method', *RBA Bulletin*, June.
- Cassidy N, E Rankin, M Read and C Seibold (2019), 'Explaining Low Inflation Using Models', *RBA Bulletin*, June.
- Davis K, J Hambur, K Lane, D Megow, S Rafter and H Sullivan (2026), 'Margins, Mark-ups and Consumer Prices: Theory, Measurement and Implications', *RBA Bulletin*, May.
- Dhingra S (2023), 'A Cost-of-living Crisis: Inflation During an Unprecedented Terms of Trade Shock', Speech at the Resolution Foundation, London, 8 March.
- Fink M and J Hambur (2026), 'Shifts in Australian Price-setting Behaviour around Large Shocks', RBA Research Discussion Paper No 2026-02.
- Hanmer F and M Marquardt (2023), 'New Insights into the Rental Market', *RBA Bulletin*, June.
- Hansen N-JH, FG Toscani and J Zhou (2023), 'Euro Area Inflation After the Pandemic and Energy Shock: Import Prices, Profits and Wages', IMF Working Paper No 2023/131.
- Haskel J (2023), 'What's Driving Inflation: Wages, Profits, or Energy Prices?', Speech at Peterson Institute for International Economics, Washington DC, 25 May.
- Hunter S (2024), 'Housing Market Cycles and Fundamentals', Speech at the REIA Centennial Congress, Hobart, 16 May.
- Hunter S (2026), 'Inflation and the Impact of the Middle East Conflict', Speech at the Bloomberg Forum for Investment Managers, Sydney, 19 May.
- Plumb M (2026), 'Recent Developments in Inflation and the Economic Outlook', Speech at the ABE Annual Forecasting Conference, Sydney, 24 February.
- Rayner V and J Bishop (2013), 'Industry Dimensions of the Resource Boom: An Input-Output Analysis', RBA Research Discussion Paper No 2013-02.
- RBA (2026), 'Chapter 2: Economic Conditions', *Statement on Monetary Policy*, August.
- Schneider M (2025), 'What Contributes to Consumer Price Inflation? A Novel Decomposition Framework With an Application to Austria', *Journal of Economic Structures*, 14(2), pp 1–26.
- Twohig D, A Yadav and J Hambur (2024), 'Do Housing Investors Pass-through Changes in Their Interest Costs to Rents?', *RBA Bulletin*, October.

Developments in RMB Internationalisation

Joshua Brown*



Photo: xphotoz – Getty Images

Abstract

Global use of the Chinese renminbi (RMB) has increased gradually since it became available to non-residents in 2009. Chinese policymakers continue to balance the push for greater international RMB use, while only incrementally liberalising the capital account to maintain exchange rate stability and limit external influence on China's financial system. Use of the RMB in trade settlement and financing continues to rise, but it does not yet represent a leading share of international currency use. RMB use in Australia has remained stable over the past decade. There is room for further expansion in the use of the currency, but progress is likely to remain gradual as policymakers continue to sequence reform carefully.

Introduction

An international currency is one that is used frequently in international trade and investment transactions between residents and non-residents, and in transactions that involve only non-residents (Kenen 2011). The Chinese renminbi (RMB) has been gradually internationalising for almost two decades, and senior Chinese officials have consistently communicated their desire for greater international use of the currency. More recently, speculation from some market participants that the US dollar could lose its pre-eminent position as the world's global currency – a phenomenon known as 'de-dollarisation' – has sometimes been accompanied by the idea that the RMB could rise to become a more prominent currency globally.

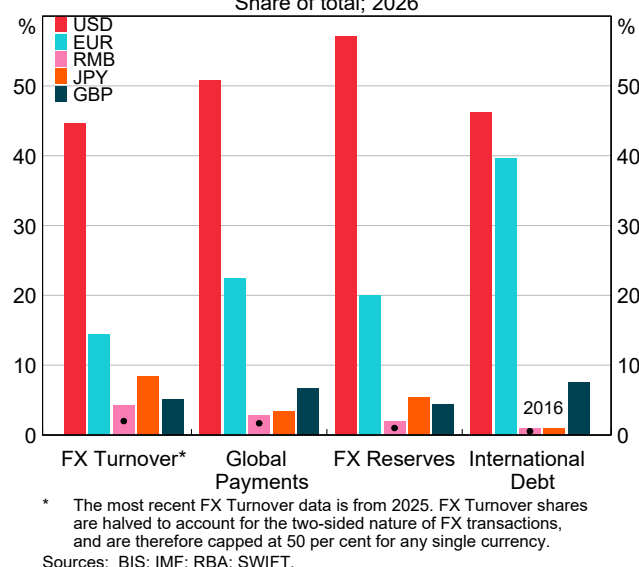
However, Chinese policymakers have taken a cautious approach in working towards their goal. They have encouraged greater use of the currency while maintaining a large degree of control over the capital account. This approach aims to prevent any broad disruption associated with financial reforms, enables greater control over the exchange rate and limits external influence on China's financial system. However, it still allows some benefits of greater RMB use. These include:

- Reduced foreign exchange risks for Chinese exporters and importers whose trade may be invoiced in other currencies, but whose other costs and revenue are mostly in local currency.
- Increased global financial influence and deepening the global importance of China's domestic institutions. President Xi Jinping has said that RMB internationalisation is a key pillar to develop China as a 'strong financial power' (Xi 2023).
- Greater robustness of the Chinese financial system and trade to the financial and geopolitical risks associated with reliance on the US dollar.

While the approach has been incremental, the RMB has progressed in most common measures of international use. In particular, RMB trade settlement, international debt financing and foreign exchange turnover have increased over the past decade. However, its share of global official sector foreign exchange reserves remains similar to a decade ago. It remains much less prominent than the US dollar and euro, and its global use slightly trails other major currencies, the yen and the pound. But it is consistently used more than the Australian dollar and other smaller advanced economy currencies (Graph 1).

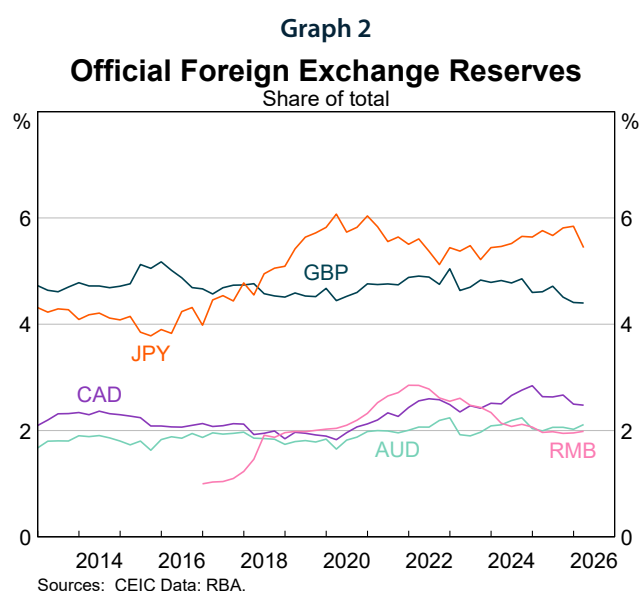
This article examines trends in the international use of the RMB, including in Australia, and how Chinese policymakers are continuing to work toward the goal of internationalisation.¹

Graph 1
International Currency Use
Share of total; 2026



Global foreign exchange reserves

The RMB's share of global foreign exchange reserves has not increased significantly over the past decade (Graph 2). Global reserve holdings are an important measure of international currency use as they reflect systemic reliance on that currency as a safe and liquid store of value in the global monetary system. The RMB's share of reserves increased from 1.1 per cent in 2016 to 2.8 per cent in 2022 but has since fallen below 2 per cent. This share has been limited by capital controls, a less deep RMB financial market compared with other common reserve currencies, and relatively low returns on Chinese assets in recent years.

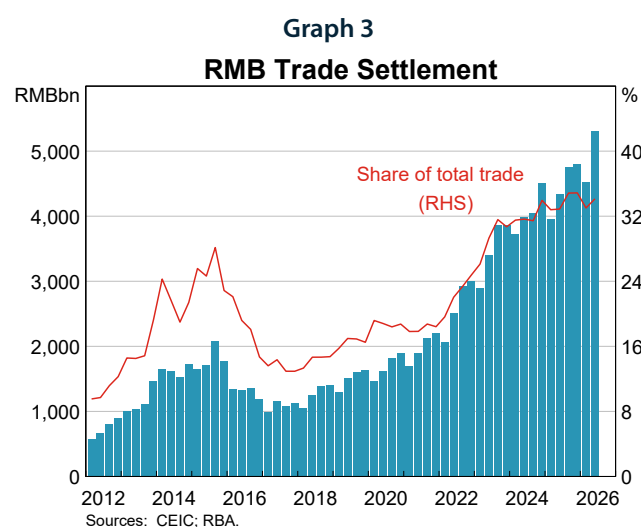


RMB trade settlement

Chinese authorities have continued to emphasise trade as a key area to expand use of the currency. Exports have been a particularly important source of growth for the domestic economy, and reducing risks associated with foreign currency use in Chinese trade helps motivate RMB internationalisation. In addition, global currencies have historically acquired international status first through trade invoicing and settlement (Eichengreen, Mehl and Chițu 2018). As China makes up over 20 per cent of global trade, wider use in trade can strengthen the global status of the RMB.

A growing share of Chinese trade has been settled in RMB over the past decade, although there remains little evidence the RMB is used to settle trade that does not involve China. Since 2021, the share of Chinese trade

denominated in RMB has doubled from below 20 per cent to around 35 per cent (Graph 3). Data from China's State Administration of Foreign Exchange (SAFE) indicates that the overall use of the RMB for Chinese cross-border payments has also increased gradually, overtaking the US dollar in 2023 as the most common currency used for cross-border transactions to or from China. Increased RMB trade settlement between Russia and China, particularly in Russian oil exports, facilitated this increase initially in 2022, but this has likely since expanded more broadly. However, the RMB has a smaller share of trade invoicing than settlement, which suggests the RMB is less deeply integrated in global trade transactions than settlement data indicate (Liu, Wang and Woo 2025).



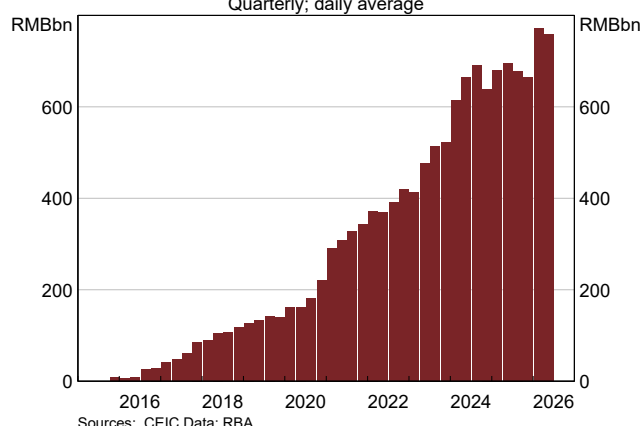
To promote use of the RMB for trade, the People's Bank of China (PBC) signed over 40 bilateral swap lines, including with the RBA, and set up offshore clearing banks in the first half of the 2010s (Hatzvi, Nixon and Wright 2014). Due to restrictions on the capital account and often constrained RMB liquidity, these policies had a quantitatively positive effect on the RMB's use for cross-border payments (Perez-Saiz and Zhang 2023). More recently, Chinese authorities have also made a series of bilateral agreements to encourage trade settlement in RMB or the trading partner's domestic currency, rather than in US dollars, including with Russia, Argentina and Brazil.

The authorities have also made efforts to increase the share of global commodity trading invoiced and settled in RMB. Commodities are a large share of Chinese imports and are generally priced using global benchmarks and settled in US dollars. Chinese

exchanges have developed their own RMB pricing benchmarks in a range of commodity markets, including oil and iron ore, and since 2022, derivative contracts that price using these benchmarks have become available to eligible foreign investors. The range of derivative contracts available has expanded from fewer than 10 to over 100 in the past four years. This suggests Chinese importers are encouraging the use of these benchmarks and RMB settlement when negotiating contracts with overseas commodity exporters. However, there is little evidence of broad RMB settlement in global commodity markets to date beyond bilateral trade with Russia and Iran.

The development of new technologies has also accompanied the increase in RMB trade settlement over the past five years. China's Cross-Border Interbank Payments System (CIPS) – an international payment system first developed in 2015 – allows trade to be settled via a Chinese owned and created system. Use of this platform has increased over 400 per cent since 2020, and although growth slowed over 2024–2025, it has increased more recently since the onset of the Middle East conflict (Graph 4). But use is still dwarfed by the primary international payment systems, with the US-based payments system, CHIPS, processing over 20 times the payment volume in 2025.

Graph 4
CIPS Turnover
Quarterly; daily average



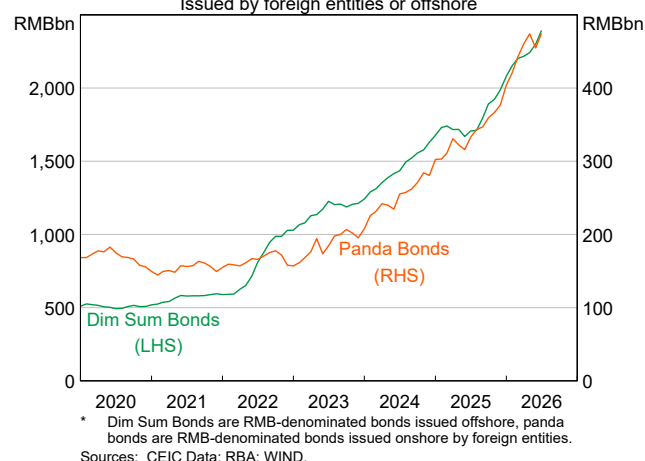
RMB debt markets

One area in which RMB adoption has accelerated is in RMB-denominated international funding. Since China began opening its capital account in 2009, Chinese government bond yields have mostly been higher than sovereign bond yields in the United States and other

advanced economies. However, while inflation increased and has remained somewhat persistent across advanced economies over the past five years, China has experienced deflationary pressures, prompting more accommodative monetary and fiscal policy. These domestic economic conditions have contributed to Chinese yields falling below yields elsewhere, resulting in RMB funding simultaneously being available to foreigners and nominally cheaper than US dollar funding for the first time.² This has enabled a large expansion in RMB-denominated international debt.

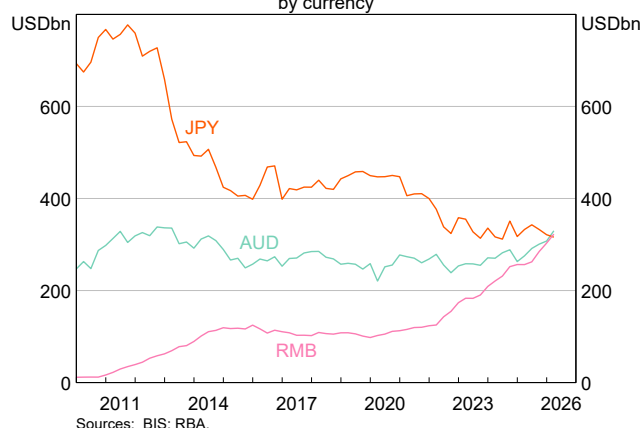
Foreign entities have been increasingly issuing RMB bonds (Graph 5). Total outstanding panda bonds, representing RMB-denominated bonds issued onshore by foreign entities, have increased three-fold since the beginning of 2022. In addition, dim sum bond issuance, which represents RMB bond issuance offshore (mostly in Hong Kong), has also increased significantly. A large proportion of panda and dim sum bond issuance is by Chinese-domiciled firms, but foreign attractiveness of this debt issuance has also increased. In the first half of 2026, dim sum bond issuance by entities not domiciled in Hong Kong or China already surpassed any previous calendar year. Several foreign governments have also issued RMB-denominated sovereign bonds, including Indonesia, Russia, Hungary, Portugal and Slovenia. However, foreign RMB bond issuance remains a small share of the international bond market, with RMB-denominated debt increasing to around 1 per cent of international debt securities, which is around the same level as the yen and Australian dollar (Graph 6).³

Graph 5
RMB Bonds Outstanding
Issued by foreign entities or offshore



Graph 6

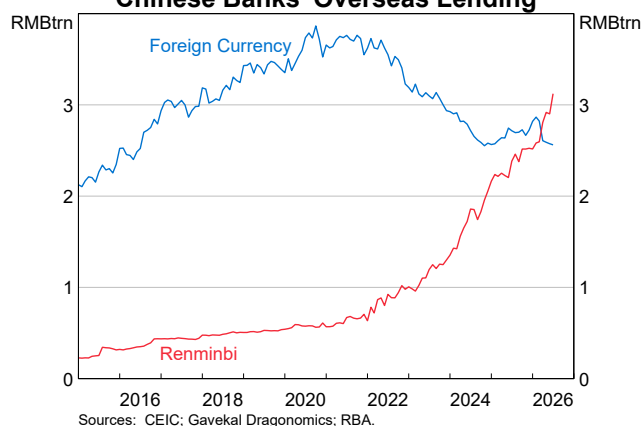
International Debt Securities by currency



Chinese banks have also expanded their overseas lending denominated in RMB. It has increased from less than 15 per cent of total overseas lending to over half in the past four years (Graph 7). Most Chinese banks' overseas lending has historically been denominated in US dollars. However, in 2022, Chinese policymakers introduced reforms to combine the regulation of RMB and foreign currency lending. This regulation places a cap on banks' total foreign lending, while adding a foreign exchange risk factor to loans issued in US dollars or other foreign currencies. This means that RMB-denominated loans effectively take up less space in this quota than foreign currency loans. This, alongside lower RMB borrowing costs, has allowed overseas RMB lending to surge, to now make up over 50 per cent of Chinese banks' overseas lending.

Graph 7

Chinese Banks' Overseas Lending



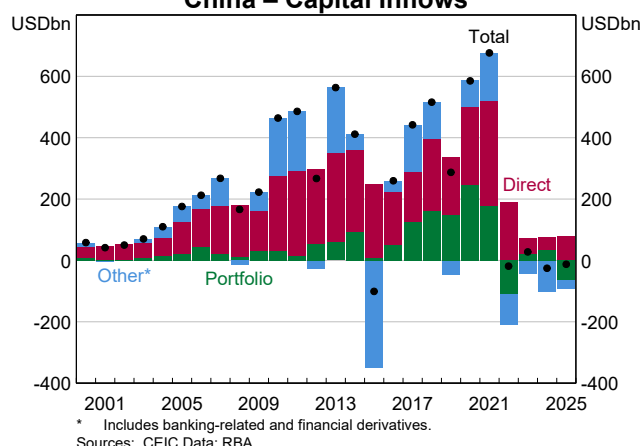
China's capital account

Chinese policymakers have opted to encourage greater global RMB use while maintaining control over the capital account, which has limited wider global use of the currency. Restricting capital flows allows Chinese authorities to limit volatility in the exchange rate and domestic asset prices, by removing the possibility of sudden and large shifts in private capital (McCowage 2018). Stability of the exchange rate remains a domestic priority alongside RMB internationalisation, presenting a significant policy trade-off when considering capital account liberalisation.

As a result, reforms to the capital account have been gradual to retain control of capital flows. Recent reforms have largely focused on encouraging international purchases of RMB assets, somewhat liberalising capital inflows. Greater ease of access to onshore markets allows foreign RMB users to better manage their RMB holdings, encouraging broader global use of the currency. The Qualified Foreign Institutional Investor (QFII) and Connect schemes have allowed for foreign purchase of onshore RMB assets for over a decade, with quotas now removed and the list of eligible assets continuing to expand. Access now includes onshore interest rate swaps, Chinese Government Bond (CGB) futures and bond repurchase transactions. More recently, the PBC has established an RMB repurchase agreement facility for foreign central banks and other international financial institutions, to encourage greater foreign official sector investment in RMB assets.⁴

Despite increases in foreign investment over the 2010s alongside gradual liberalisation, restricted access to hedging instruments and broader underdevelopment of China's financial markets continue to limit foreign investors' willingness to invest in onshore Chinese assets. Since 2021, low bond yields and heightened geopolitical risks have further reduced foreign appetite for Chinese assets, and foreign investment has been limited (Graph 8).

Graph 8
China – Capital Inflows



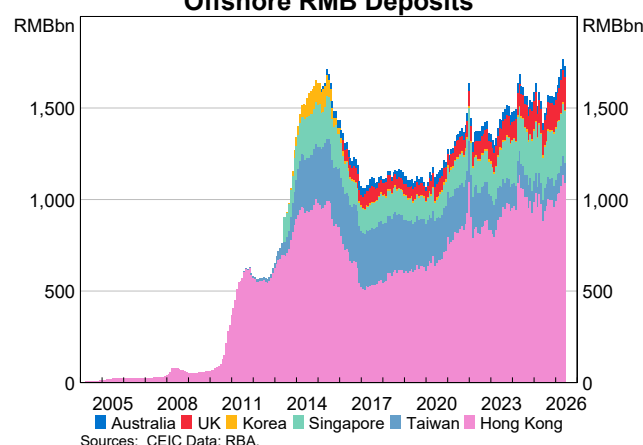
Historical episodes have contributed to a preference for caution when liberalising the capital account, particularly capital outflows, due to the risk flows present to exchange rate stability. Between 2014 and 2016, China's growth outlook weakened and monetary policy was eased, contributing to an acceleration of private capital outflows and a decline in asset prices. These developments, alongside moves to allow the exchange rate to become more market determined, resulted in significant depreciation of the RMB (RBA 2015). Chinese policymakers intervened to prevent further declines in equity prices, while the PBC sold over US\$800 billion of foreign exchange reserves to defend the value of the currency. As a result, further liberalisation of the capital account was halted, the focus on RMB internationalisation eased, and any subsequent reform has been incremental and carefully sequenced to limit market volatility.

As a result, restrictions remain stronger for capital outflows than inflows. The quota for the Qualified Domestic Institutional Investor (QDII) scheme, which allows domestic investors to make portfolio investment abroad, remains restrictive. The Connect scheme, which allows mainland investors to purchase some Hong Kong-listed bonds and equities, has seen strong uptake and quotas have been raised more significantly. However, Connect flows do not have a strong effect on the exchange rate as assets mostly remain in RMB, and as they expand the pool of investment available in the offshore RMB market, they increase liquidity in offshore RMB assets.

The offshore RMB market

Offshore RMB centres, particularly Hong Kong, are integral to allow greater international use of the RMB without broader liberalisation of capital flows (Cockerell and Shoory 2012). China operates a parallel currency system where the onshore RMB (CNY) and offshore RMB (CNH) circulate simultaneously in different markets. There are no restrictions on the use of the CNH in the offshore market, but controls exist in the conversion of CNH to CNY. This system allows the RMB to be used freely internationally while capital controls are maintained domestically. The establishment of 'offshore centres' saw significant growth in the stock of offshore RMB deposits from 2010 to 2015, with policies such as offshore clearing banks and bilateral swaps helping to build offshore liquidity (Graph 9).

Graph 9
Offshore RMB Deposits



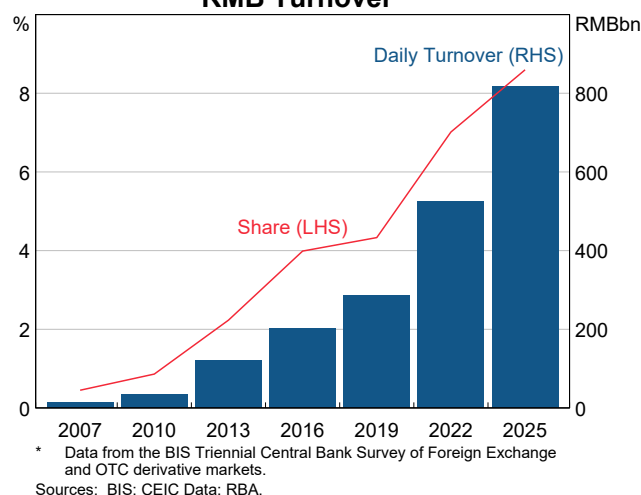
However, dislocations in the offshore RMB market can limit foreign willingness to use the RMB. During periods of abrupt RMB depreciation in 2015–2016, Chinese authorities restricted the flow of RMB between the onshore and offshore market to limit capital outflows. These actions helped to maintain exchange rate stability but significantly squeezed CNH liquidity. As a result, the offshore RMB overnight money market rate increased to over 70 per cent, reducing confidence in the parallel currency system and contributing to fall in offshore RMB deposits by over 25 per cent from 2015 to 2017 (Bahaj and Reis 2024).

Improving liquidity conditions in the offshore RMB market has been a priority for Chinese policymakers in recent years to promote the use of the currency by foreign participants. This has involved the PBC and the Hong Kong Monetary Authority (HKMA) developing a range of policies to link onshore and offshore funding conditions more closely to limit the differential between CNY and CNH exchange rates and reduce volatility in CNH funding costs. Policies include:

- Foreign investors are now permitted to use onshore bond holdings as collateral to enter repurchase agreement (repo) transactions in the CNH market and can enter onshore repo transactions and remit the funds offshore to manage CNH liquidity.
- A new medium-term RMB liquidity facility offered by the HKMA offers funding at onshore money market rates, providing greater stability to offshore funding markets. The HKMA has gradually expanded its size and scope since its introduction in early 2025.
- Establishing the trading of offshore Chinese Government Bond (CGB) futures in Hong Kong – the five-year tenor began trading on 3 August 2026, allowing foreign investors to more easily manage risk in RMB holdings.
- A pilot program permitting six major Chinese banks to undertake CNH trading directly from the mainland within a quota. This should improve CNH liquidity while allowing onshore banks to better arbitrage gaps between CNY and CNH pricing.

Although CNH deposits have not continued to rise, this has facilitated greater activity in the offshore RMB market. CNH money market rates have stabilised over the past two years, while turnover has been higher in RMB foreign exchange markets (Graph 10). According to the BIS Triennial Survey of Foreign Exchange Markets, average daily RMB turnover increased 68 per cent from 2022 to 2025, to 8.5 per cent of global FX turnover (BIS 2025). Hong Kong remains the largest hub for RMB trading, while the share of foreign exchange transactions in Hong Kong involving RMB increased from 27 per cent to 35 per cent, 95 per cent of which is in CNH (HKMA 2025).

Graph 10
RMB Turnover*

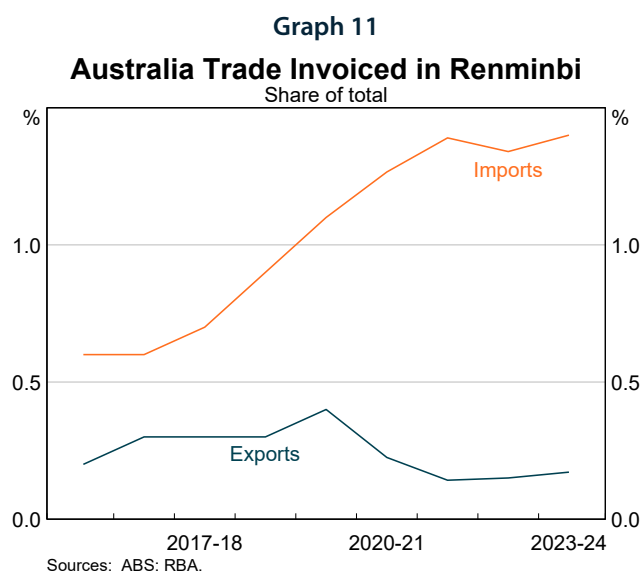


Implications for Australia

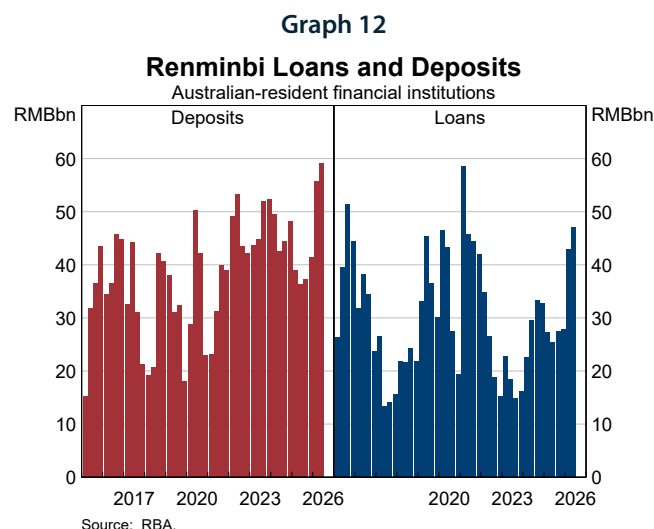
Australia has significant trade linkages with China, and in 2015, Sydney was designated as an offshore RMB hub with the establishment of an official RMB clearing bank. This set up the infrastructure to enable greater use of the RMB in Australia. However, use of the RMB in Australia has remained low, due in part to a large share of trade with China being commodities, which remain invoiced in US dollars. As in other countries, restricted access to hedging instruments and limited offshore RMB market depth have also contributed to RMB financial activity in Australia remaining modest.

The share of RMB in Australian trade invoicing has remained small (Graph 11). Commodities, which are mostly priced in US dollars, make up a large share of Australia's exports to China, and so there has been little need for greater RMB export invoicing. Conversely, Australia's imports from China are more heavily concentrated in manufactured goods that have greater scope for RMB invoicing. While the share of Australian imports priced in RMB remains low, this share has increased over the past decade from 0.6 per cent to 1.4 per cent. Data from the Australian Bureau of Statistics have suggested that 4.5 per cent of Chinese imports to Australia were invoiced in RMB in 2020–2021, with Australian dollar invoicing making up a larger share of imports and exports with China (ABS 2021). Limited increases in total imports invoiced in RMB would suggest this share has not significantly increased. While trade invoicing data offer a strong indication, they do not necessarily reflect the final currency of settlement.

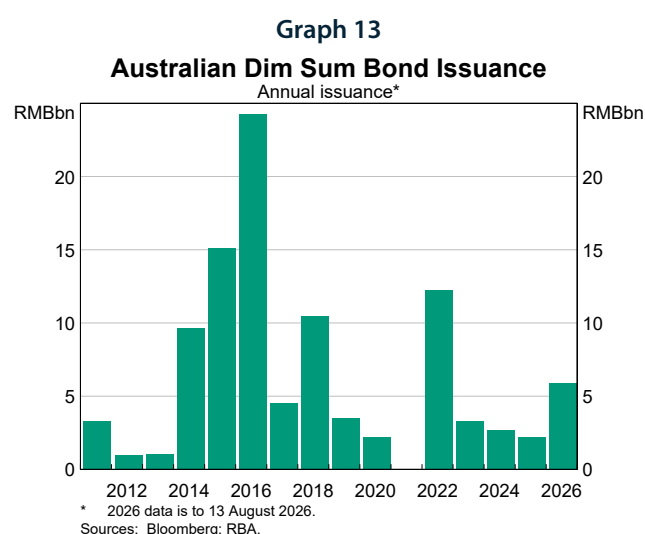
There is little information on how RMB trade settlement in Australia has developed over time, but it is quite likely that the share of trade settled in RMB is higher than the invoicing share.



RMB deposits and loans in Australia have also seen limited growth over the past decade (Graph 12). These data, collected by the RBA on a quarterly basis, indicate that there has been little change in RMB activity on average in the Australian banking sector over the past decade. RMB business activity by domestic banks in Australia has been modest, as most activity in RMB loans and deposits has been facilitated by Australian subsidiaries and branches of Chinese banks. This is likely to support Australian operations of Chinese firms. A notable exception is Fortescue, which secured a 14.2 billion yuan syndicated loan in 2025, reportedly funded by both Australian and Chinese lenders (Fortescue 2025).



There has also been some RMB bond issuance by Australian entities, but this has not increased in recent years as it has globally (Graph 13). Australian activity in this market was particularly strong in the mid-2010s, which included the NSW government issuing a dim sum bond in 2014. Activity in dim sum bond issuance by Australian firms has been largely concentrated to the banking sector, with very little issuance in other sectors, while Australian firms have not issued bonds in the onshore Chinese market. RMB foreign exchange turnover has increased in the Australian market over the last decade, alongside increases globally. However, this largely reflects greater activity by financial counterparties, rather than broad adoption of the currency.



Conclusion

The RMB has continued to internationalise gradually, although more recent progress has been incremental. Chinese policymakers appear to be taking a cautious approach to reforming the Chinese financial system to work toward this internationalisation goal, while limiting any potential spillovers that could cause exchange rate volatility or disrupt Chinese financial or economic conditions. Growth in the use of the RMB over the past decade has been limited in some areas, such as holdings in global foreign exchange reserves, but has been somewhat more significant in others, such as trade settlement and foreign exchange turnover. Still, the RMB continues to lag major international currencies, such as the US dollar and the euro, in its use. The communications of Chinese officials suggest some potential for progress to accelerate. However, it is likely to continue to be incremental in the absence of more aggressive capital account liberalisation.

Endnotes

- * The author is from International Department.
- 1 For earlier RBA analysis on RMB internationalisation, see Cockerell and Shoory (2012); Ballantyne, Garner and Wright (2014); Windsor and Halperin (2018); Lien and Sunner (2019).
- 2 RMB funding also remains cheaper when hedged into domestic currency for many issuers.
- 3 International debt securities refer to bonds issued outside the local market of the country where the borrower resides (BIS 2021).
- 4 A bilateral swap line is an agreement between two central banks to exchange their domestic currencies in a stress event to prevent liquidity shortages and stabilise financial markets. Whereas the repurchase agreement facility allows foreign central banks to access RMB liquidity by using high-quality RMB bond holdings as collateral, rather than swapping for domestic currency.

References

- ABS (2021), 'Export and Import Invoice Currencies, 2020–21', November.
- Bahaj S and R Reis (2024), 'The Anatomy of a Peg: Lessons from China's Parallel Currencies', Centre for Macroeconomics Discussion Paper No 2401.
- Ballantyne A, M Garner and M Wright (2014), 'Developments in Renminbi Internationalisation', *RBA Bulletin*, June.
- BIS (2021), 'Box A: What Constitutes an International Debt Security in BIS Statistics?', *Quarterly Review*, June.
- BIS (2025), 'OTC Foreign Exchange Turnover in April 2025', *Triennial Central Bank Survey*, September.
- Cockerell L and M Shoory (2012), 'Internationalising the Renminbi', *RBA Bulletin*, June.
- Eichengreen B, A Mehl and L Chițu (2018), *How Global Currencies Work: Past, Present, and Future*, Princeton University Press.
- Fortescue (2025), 'Fortescue Secures Landmark RMB 14.2 billion Syndicated Term Loan', ASX Release, August.
- Hatzvi E, W Nixon and M Wright (2014), 'The Offshore Renminbi Market and Australia', *RBA Bulletin*, December.
- HKMA (2025), 'Results of 2025 BIS Triennial Survey of Foreign Exchange and OTC Derivatives Market Turnover', Press Release, 30 September.
- Kenen P (2011), 'Currency Internationalisation: An Overview', BIS Papers No 61.
- Lien B and D Sunner (2019), 'Liberalisation of China's Portfolio Flows and the Renminbi', *RBA Bulletin*, September.
- Liu T, X Wang and WT Woo (2025), 'Invoicing Currency and Settlement Currency: An Empirical Study and Implications for RMB Internationalization', *China Economic Review*, 94.
- McCowage M (2018), 'Trends in China's Capital Account', *RBA Bulletin*, June.
- Perez-Saiz H and L Zhang (2023), 'Renminbi Usage in Cross-Border Payments: Regional Patterns and the Role of Swap Lines and Offshore Clearing Banks', IMF Working Paper No 2023/077.
- RBA (2015), 'Box B: Chinese Capital Outflows', *Statement on Monetary Policy*, November.
- Windsor C and D Halperin (2018), 'RMB Internationalisation: Where to Next?', *RBA Bulletin*, September.
- Xi J (2023), 'Follow the Path of Financial Development with Chinese Characteristics and Build a Strong Financial Nation', Speech at the Central Financial Work Conference, Beijing, 30–31 October.