NSW Treasury

Global Inflation Developments

Economic Data Briefing

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Acknowledgement of Country

The NSW Treasury acknowledges that Aboriginal and Torres Strait Islander peoples are the First Peoples and Traditional Custodians of Australia, and the oldest continuing culture in human history.

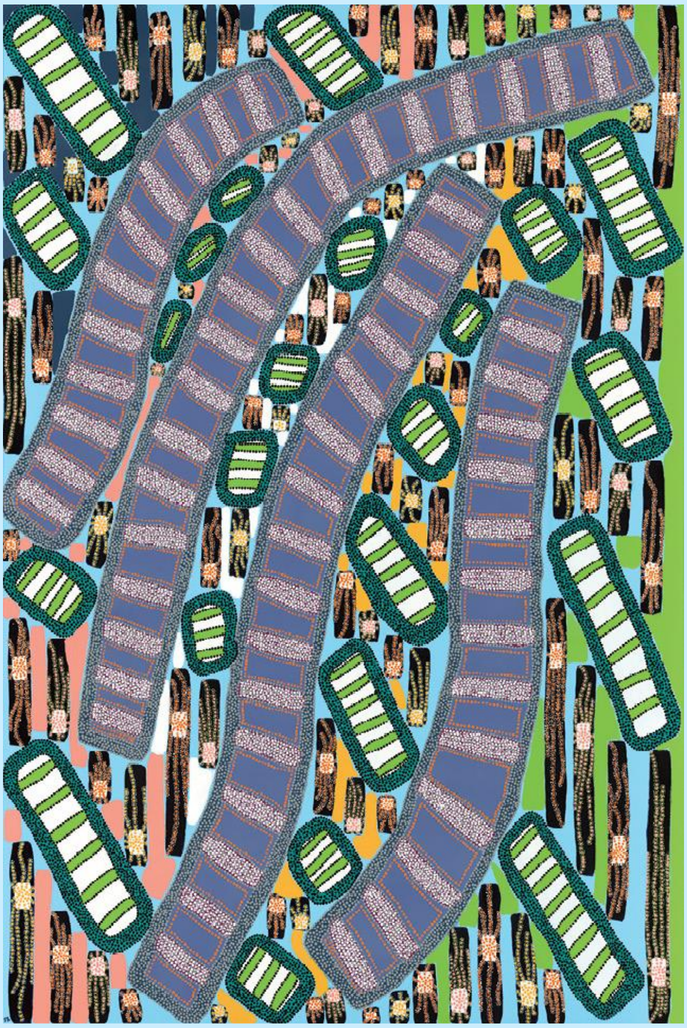
We pay respect to Elders past and present and commit to respecting the lands we walk on, and the communities we walk with.

We celebrate the deep and enduring connection of Aboriginal and Torres Strait Islander peoples to Country and acknowledge their continuing custodianship of the land, seas, and sky.

We acknowledge the ongoing stewardship of Aboriginal and Torres Strait Islander peoples, and the important contribution they make to our communities and economies.

We reflect on the continuing impact of government policies and practices and recognise our responsibility to work together with and for Aboriginal and Torres Strait Islander peoples, families, and communities, towards improved economic, social and cultural outcomes.

Artwork: 'Regeneration' by Josie Rose



Contents

Global inflation developments

Inflation over the past year has increased rapidly across several countries, particularly major advanced economies, following stubbornly low inflation for several years prior to the start of the COVID-19 pandemic. This paper examines the broad trends and common drivers of the acceleration in inflation across countries.

It finds:

- While rising headline inflation, in part, reflects a sharp rise in energy prices, core inflation also has surged across a broad range of countries.
- A common factor has been a surge in goods price inflation, reflecting the combination of a policy induced boost to demand and ongoing supply chain issues. This has been evident across a broad range of categories.
- Services inflation also has picked up, though to a lesser extent than for goods. Moreover, in contrast to goods, trends in services inflation generally have been more mixed both between countries and across sectors.
- While consumer price inflation in China remains subdued, producer price inflation remains elevated, albeit down from the quite rapid growth seen in late 2021. This is playing a critical role in the pickup in global inflationary pressures via sharp rises in Chinese export prices.
- Looking ahead, we expect the recent inflation pulse to be broadly maintained over the first half of 2022, at least, before central bank rate rises and some easing in global supply chain disruptions take effect. There are, however, several risks around this view, not least the current military conflict in Europe and China's continued adherence to a zero-COVID strategy.
- Key to the outlook will be whether inflation expectations remain anchored, or whether persistent inflation in the first half of the year instead results in expectations, and with it wages growth, experiencing a self-re-enforcing spiral.

The global inflation trends identified in this paper, and supply chain pressures identified in a previous paper, potentially have significant implications for Australia, which will be explored in future papers.

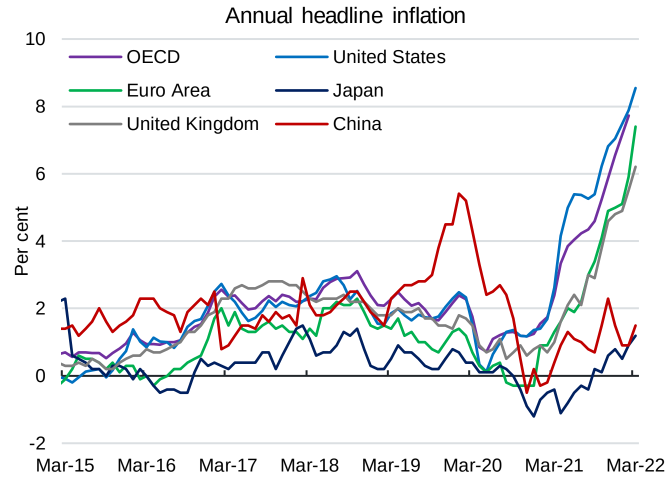
Recent international trends in headline inflation

Global inflation developments have garnered a lot of attention in recent months. Inflation in most major industrial economies had been stubbornly low prior to the COVID pandemic, with consumer inflation, on average, undershooting the targets of most major central banks over the past decade. In the initial stages of the pandemic, inflation generally slowed across most countries as restrictions aimed at slowing the spread of COVID stifled demand, especially for services.

More recently, however, headline inflation has surged across most major industrialised economies to their highest level in decades, levels that are well above central bank targets (Chart 1). Most notably:

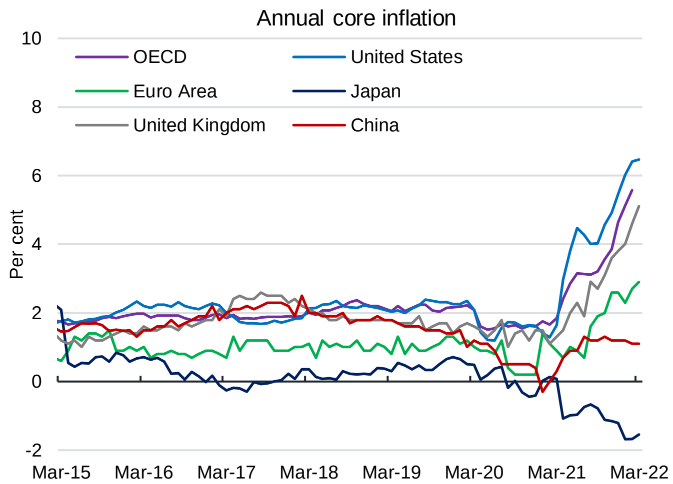
- **US** headline consumer prices rose 8.5 percent over the year to March 2022, the fastest increase in over 40 years.
- In the **UK**, annual inflation increased to 7.0 per cent in March 2022, its highest reading since 1992.
- In the **Euro Area**, annual inflation jumped to 7.5 per cent in March 2022, its highest reading since region-wide records began in 1997 (breaking that record for the fourth straight month).
- In **Canada**, annual inflation was 6.7 per cent in March 2022, its highest reading since 1991.
- In **New Zealand,** annual inflation rose to 6.9 per cent in the first quarter of 2022, the highest reading since 1990.
- **Japan** is a notable exception to the rising inflationary trend across the industrialised world. Though inflation in Japan has clearly accelerated from the lows seen at the height of the pandemic, the latest reading in Match was not materially higher than was the case prior to the pandemic. Domestic businesses remain reluctant to pass on price increases after decades of low growth and falling prices.

Chart 1: Headline inflation has accelerated sharply across many economies



Source: OECD and Bloomberg

Chart 2: Higher inflation is still evident in many cases after excluding volatile food and energy prices



Source: OECD and Bloomberg

The pickup in inflation also has been evident across many emerging economies, with the exception of some Asian economies, most notably China.

The remainder of this note will focus on industrialised economies, which share similarities to Australia, although developments in China also will be explored due to their significance to global supply chains and inflation.

Developments in core inflation

Higher food and energy prices clearly helped to drive the initial pick-up in inflation. However, measures of **core consumer price inflation** — which exclude food and energy due to their historically high level of volatility — also have increased sharply across the globe (Chart 2). In most major industrialised economies, core inflation also clearly is running well above pre-COVID averages and above the rates targeted by central banks (of around 2 per cent).

- Annual core inflation has accelerated to 5.6 per cent across the **OECD** as a whole as at February 2022, its highest level in more than 25 years. This is more than three times the average rate of 1.8 per cent that existed in the decade preceding the onset of the pandemic.
- The **US** has led the way, with annual core CPI inflation rising to 6.5 per cent in March 2022, its highest level since 1982.
- The **UK's** annual core inflation lifted to 5.7 per cent in March 2022, its highest rate since comparable records began in 1997.
- The rise in **Euro Area** core inflation has been comparatively moderate. Annual core inflation lifted to 2.9 per cent in March 2022. Still, this was the highest reading since records began in 1997, more than double the average of the five years prior to the pandemic and clearly above the European Central Bank's target of 2 per cent.
- **Japan** once again is a notable exception, with annual core inflation of just 0.8 per cent in March 2022.

The pickup in inflation to date has had a marked impact on financial markets as central banks have been forced to re-evaluate their accommodative monetary policies. Some central banks have begun the process of withdrawing monetary stimulus put in place during the pandemic. For instance:

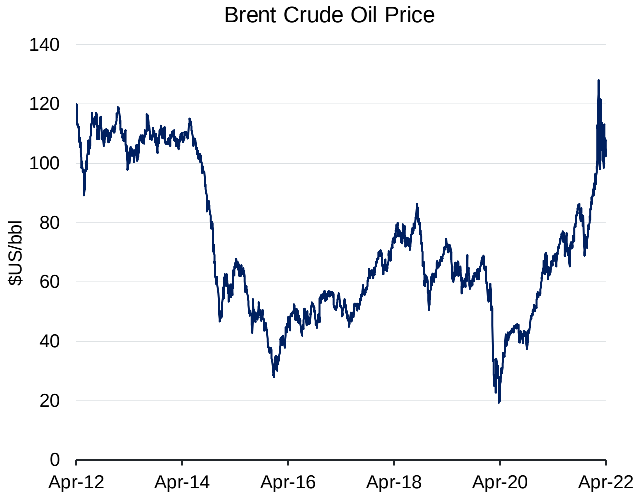
- The Bank of England has lifted interest rates three times in the last four months taking rates from 0.1 per cent to 0.75 per cent. Another rate rise is expected in early May.
- The Reserve Bank of New Zealand has raised rates four times since October 2021, rapidly taking interest rates from 0.25 per cent to 1.50 per cent.
- The US Federal Reserve in March delivered its first rate-hike since December 2018, lifting the federal funds rate target by 25 basis points to 0.25-0.50 per cent. Fed officials also outlined plans to reduce their bond holding by a maximum of $95 billion per month. Another rate rise of as much as 50 basis points is expected in early May, with Federal Reserve members expecting several interest rate increases over the remainder of the year.
- The European Central Bank is yet to increase interest rates. However, at its April 2022 meeting it adopted a more hawkish tone and announced that it would end its bond buying program in the third quarter of this year. The bank is then expected to begin hiking interest rates.

How broad based are inflation pressures?

One key driver of the pickup in inflation across the globe has been the jump in crude oil prices (Chart 3). During the initial stages of the pandemic, oil prices plunged as government restrictions reduced demand. Since then, demand has snapped back quickly, while OPEC has restricted supply. More recently, the commencement of hostilities between Russia and the Ukraine has contributed to the upward momentum in oil prices. This has seen oil prices more than double since the beginning of 2021 to over US$100 a barrel (with a peak over US$120).

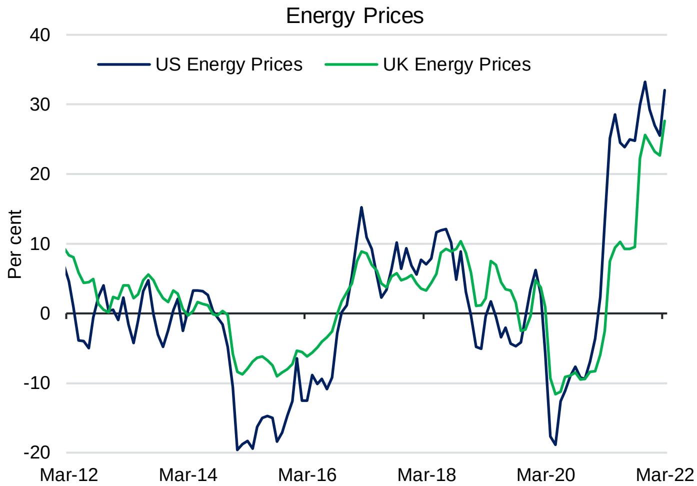
This pickup in crude oil prices has driven a surge in broader energy prices across most major developed economies. For instance, in the US, energy prices have risen 32 per cent through the year to March 2022. Meanwhile for the UK, fuel prices have risen by over 30 per cent through the year and household energy prices have risen by over 25 per cent (Chart 4). The sharp rise in UK energy prices was despite an energy price cap which has since increased by 50 per cent (in April 2022).

Chart 3: Crude oil prices rise strongly as OPEC+ cut production



Source: Bloomberg

Chart 4: As crude oil prices have risen energy prices across many countries also rose

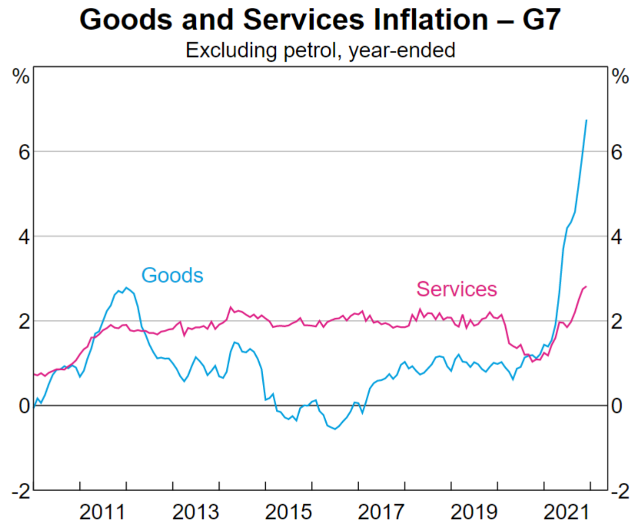


Source: Bloomberg

The energy category of CPI is typically very volatile, frequently registering prices changes of over 10 per cent. For this reason, the first-round impact of energy prices is excluded from most measures of core inflation. However, energy price changes indirectly feed into core inflation because energy is a critical input in the manufacture and distribution of a wide range of goods and services. For example, in Australia, the industrial sector directly uses twice as much energy as households, with manufacturing, transport and mining the biggest users. Thus, the sharp rise in energy prices has contributed to the broad-based pickup in global core inflation.

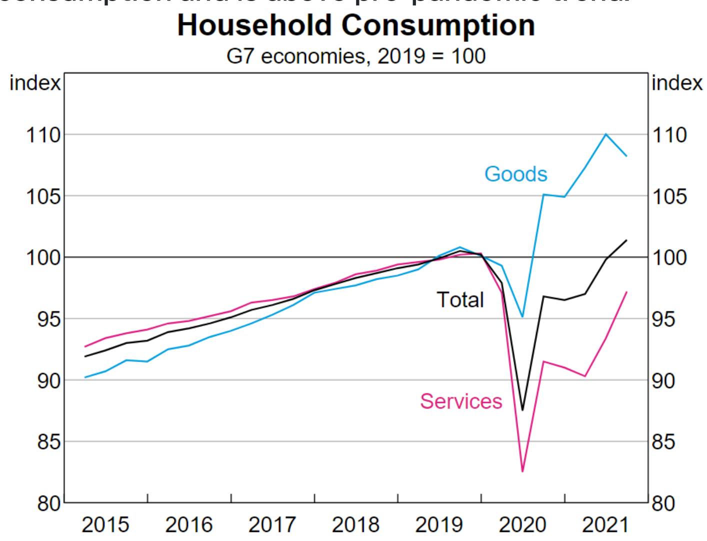
Energy aside, the initial increase in inflation was driven exclusively by the rising price of goods (Chart 5). Goods inflation across the G7 group of industrialised economies gradually rose throughout the course of 2020. By contrast, services inflation eased notably in the early stages of the pandemic. As a result, annual goods inflation surpassed services inflation in G7 economies for the first time since 2012.

Chart 5: Goods inflation has increased far more than services inflation



Source: RBA *Statement of Monetary Policy*, February 2022.

Chart 6: Goods consumption has outpaced services consumption and is above pre-pandemic trend.

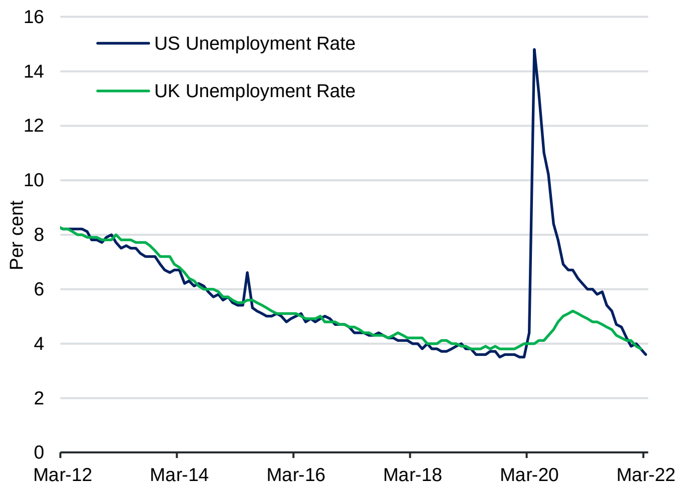


Since the start of 2021, services inflation also has begun to lift, with the average through the year increase in services prices for the G7 accelerating to almost 3 per cent by the end of 2021, its fastest pace of growth in at least the past 12 years. This pickup in services inflation, however, has been dwarfed by the acceleration in goods prices. Excluding petrol, goods price inflation across the G7 has risen to almost 7 per cent by the end of 2021.

The pick-up in the price of goods has been driven in part by a large shift in household spending patterns since the onset of the pandemic. With restrictions limiting spending on services, the combination of working-from-home mandates in many countries and substantial fiscal stimulus drove a significant surge in goods demand (Chart 6). This quickly ran up against a logistics and supply chain network that was not flexible enough to respond to shocks adding to inflationary pressure for goods (see previous note on global supply chains).

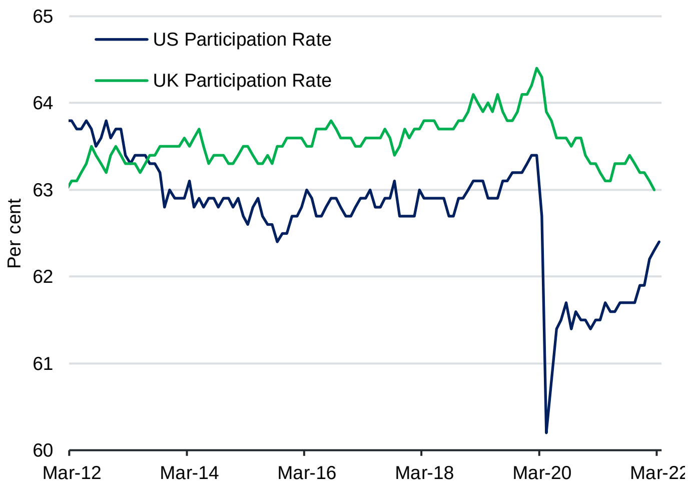
Using available March quarter 2022 data (from the OECD) indicates that annual goods inflation for the G7 has accelerated by a further 2 percentage points, compared to the previous quarter, while annual services inflation has lifted by over 0.5 percentage points over the same period.

Chart 7: Both the US and UK unemployment rates are back near pre-pandemic lows



Source: Bloomberg

Chart 8: Participation rates in the US and UK are well below pre-pandemic levels.



Source: Bloomberg

As the pandemic has evolved and economies have emerged from lockdowns, services demand has recovered, and price pressures have become more broad-based. The increase in services inflation has been faster in economies that are recording high wage growth due to tight labour markets, namely the US and UK (Chart 7). That said, even those countries that have seen more contained wages growth have started to see a lift in services inflation.

It is worth noting that much of the tightness experienced in the labour markets of countries like the United States and United Kingdom reflects the fact that participation rates are yet to fully recover from their COVID-19 lows (Chart 8) There is much conjecture around how whether participation will improve, or whether there has been a shift in behaviour that may see it remain lower for longer, adding to continued pressure on inflation.

How synchronised has the pickup in goods prices been by sector?

A closer look at the US, UK, Canada and NZ shows that the pick-up in goods price inflation has been broad based, with several categories recording price growth well above their pre-COVID decade averages (Charts 9-12).

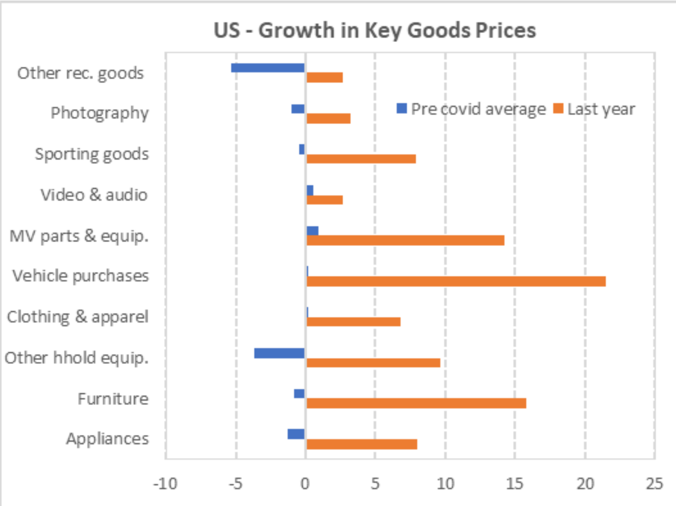
Given the historical trend of price declines, in some categories over the previous decade, the relative increase in inflation is significant. One example is photography goods in the UK and Canada, where the latest absolute price gains are weak (0.0 per cent in Canada and -3.6 per cent in the UK), but the relative pick-up in inflation is large as this category historically records quite steep price declines.

- Motor vehicles: A clear standout has been motor vehicle prices, which have been particularly affected by global supply chain issues (see recent note). This is most evident in the US, where motor vehicle prices over the year to March surged more than 23 per cent, the UK, where prices have risen by almost 15 per cent and Canada where prices have risen by more than 11 per cent.
  - While new vehicle prices have picked up strongly across all countries (except New Zealand), the increase in overall prices has been largely driven by used vehicles. New car prices have lifted due to a global shortage of semiconductor chips and other supply chain issues which has constrained the delivery of new vehicles. This has led to a sharp increase in the demand and price for used vehicles. Again, used car prices have picked up the most in the US, where prices rose by 35 per cent over the year to March (despite a softening in the most recent two months), and the UK, where prices are up more than 30 per cent. Meanwhile used car prices have risen more than 10 per cent in New Zealand.
  - The pickup in car prices has been especially important for core inflation in the US, where vehicle purchases make up more than 10 per cent of the overall core inflation basket. US vehicle prices have contributed more than 2.0 percentage points (or 32 per cent) to the total rise in US core inflation over the year to March.
- Housing: Not all countries include new housing construction costs in the CPI; for example, the US only includes the services component of housing (actual rents and owners equivalent rents). However, prices have increased sharply by around 12-18 percent in Canada and New Zealand. As with motor vehicles, global supply chain issues have been a driving factor behind

this trend. This is significant for Australia, where house purchase costs comprise around 8 per cent of the CPI basket.

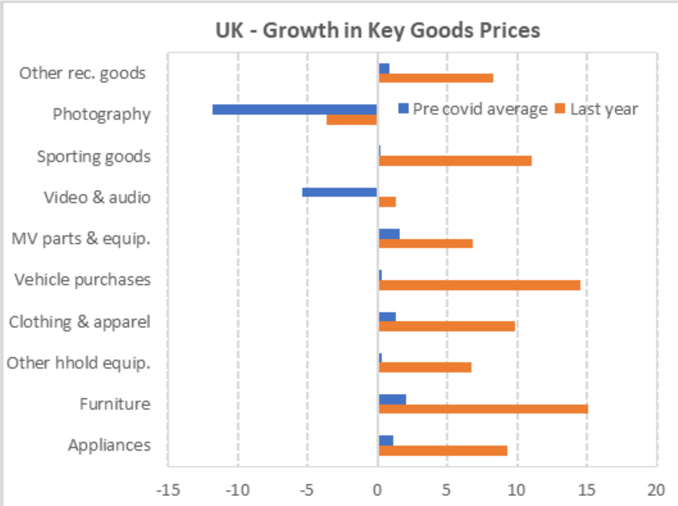
- Household goods*:* Household goods have seen consistent strong gains. This is most notable for f*urniture,* where prices have risen by between 14 and 16 per cent in the US, UK and Canada and more than 7 per cent in New Zealand – this is remarkable given that furniture prices have tended to decline historically. *Appliance* prices, meanwhile, have risen by between 8-9 per cent over the past year across the US, UK and Canada – the pick-up in New Zealand has been more muted, albeit still significant compared to its pre COVID-trend.

Chart 9: United States Goods Inflation



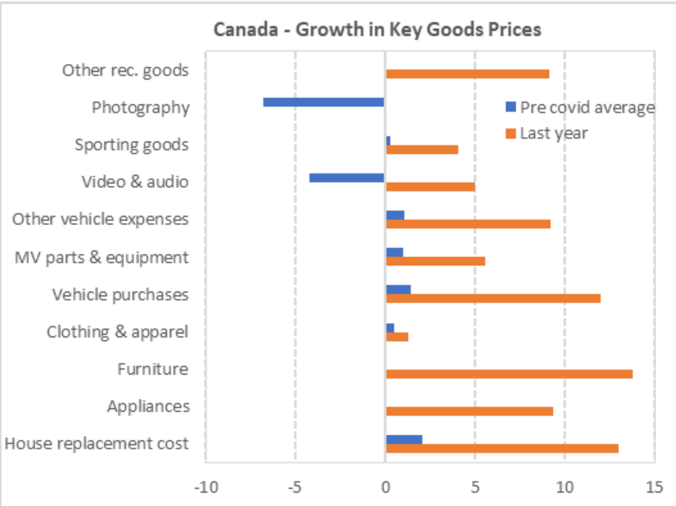
Source: Bureau of Labor Statistics

Chart 10: United Kingdom Goods Inflation



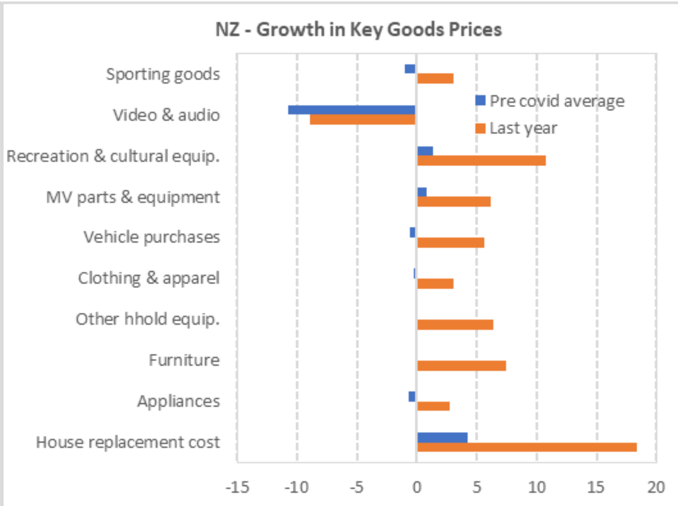
Source: Office for National Statistics

Chart 11: Canada Goods Inflation



Source: Statistics Canada

Chart 12: New Zealand Goods Inflation



Source: Stats NZ

- Recreational goods: The price changes for recreational goods categories have been more variable across countries. Many goods in this category recorded price declines prior to the onset of COVID. Nonetheless, the broad trend has been for recreational goods prices to pick up sharply over the past year, particularly compared to their historical trends.
  - In the **US**, this has been especially the case for sporting goods, where prices have risen around 8 per cent over the year to March. While other recreational goods prices (including toys, games and musical instruments) have not risen that strongly in absolute terms,

relative to their pre-COVID average, the pickup in prices has been similar to that seen for sporting goods.

- In the **UK**, price gains in absolute terms have been sharpest over the past year for sporting goods (11.0 per cent) and other recreational goods (8.3 per cent). On a relative basis compared to pre-COVID, photography goods (+8 percentage points) and video and audio equipment (+7 percentage points) have also posted large gains despite more muted absolute price changes.
- In **Canada**, other recreational goods prices have risen more than 9 per cent over the last year, while audio and video prices have risen by 5 per cent. The pickup in prices relative to the pre-COVID average has been largest for audio & video goods (+9.2 percentage points), while photography goods inflation has accelerated by almost 7.9 percentage points despite the flat reading in absolute terms.
- In **New Zealand**, recreation and cultural equipment prices have risen by almost 11 per cent over the year to the March quarter 2022. While sporting goods prices have risen by just over 3 per cent in absolute terms, their price growth is more than 4 percentage points higher than their pre-COVID average. Similarly, while video & audio goods prices have fallen sharply over the past year, relative to its pre-COVID average, the pace of change is almost 2 percentage points higher.

Services inflation trends have been more mixed

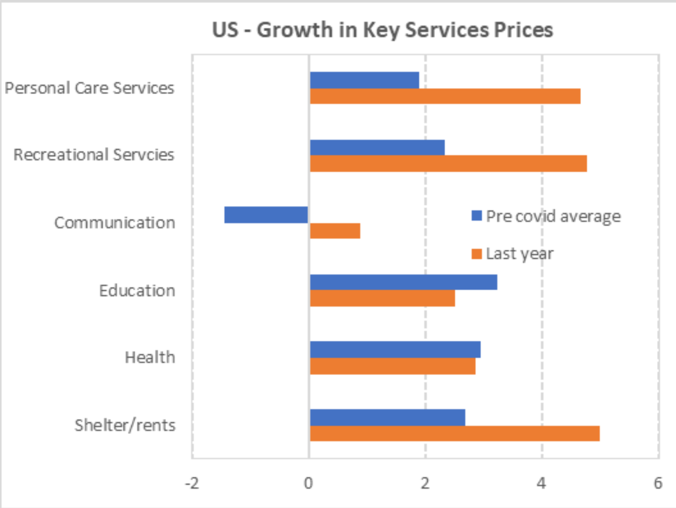
The acceleration in services inflation has been much more muted than for goods prices. Trends in services inflation also have been much less synchronised across sectors and countries (Charts 13-16).

One sector where a clear upward trend in price growth has been evident over the course of the pandemic has been dwelling rental costs. The pace of growth in rents has accelerated across all countries examined relative to its pre-COVID average. This acceleration has been greatest in the US and Canada, where rents over the past year have grown by 2.3-2.8 percentage points faster than the pre-COVID average.

By contrast, the pace of growth in education costs has declined across all four countries. A similar trend is evident in health costs, with the exception of Canada.

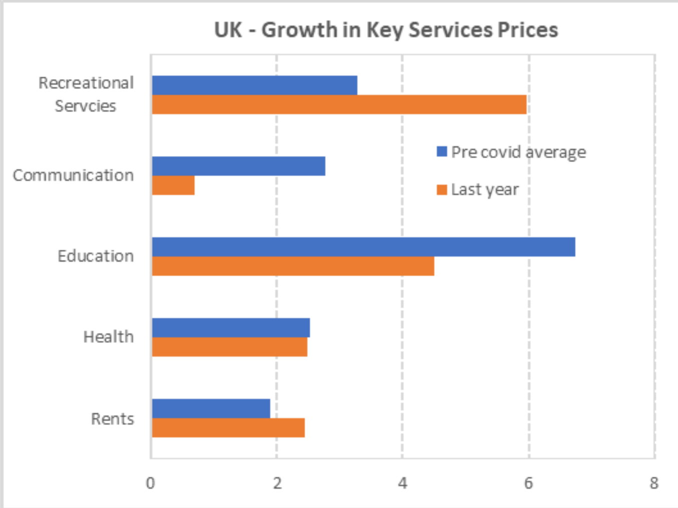
Elsewhere, price trends have been far more mixed. For example, while recreational services clearly have picked up in the US and the UK, with growth of 4.7 per cent and 6.0 per cent respectively, the opposite has occurred in both Canada and New Zealand. It is a similar story for communication services prices – while these have picked up relative to their pre-COVID trend in the US and NZ, the opposite has been the case in the UK and Canada.

Chart 13: United States Services Inflation



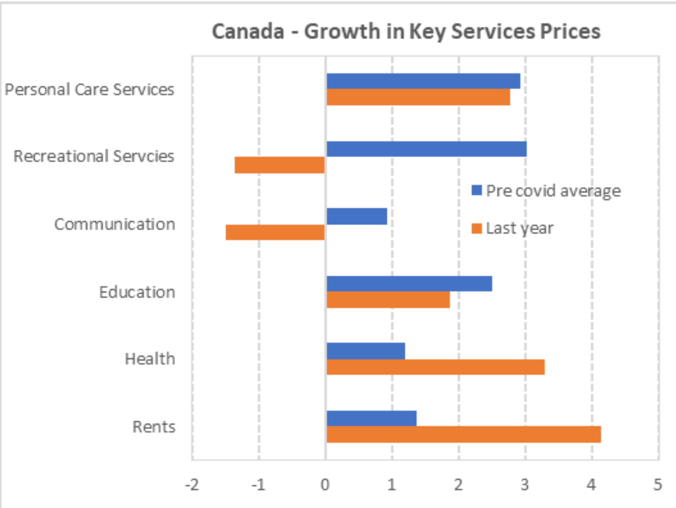
Source: Bureau of Labor Statistics

Chart 14: United Kingdom Services Inflation



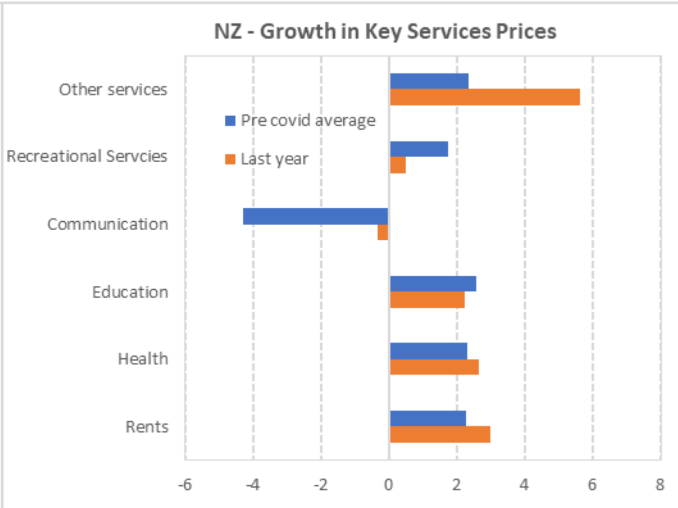
Source: Office for National Statistics

Chart 15: Canada Services Inflation



Source: Statistics Canada

Chart 16: New Zealand Services Inflation



Source: Stats NZ

China has started exporting inflation to the rest of the world

One important exception to these global inflation developments has been Asia, which is relevant to Australia given our close economic integration with this region. In some Asian countries, inflation is still relatively low. This is especially notable for China, where consumer price inflation has remained subdued, with headline inflation of 1.5 per cent and core inflation standing at 1.1 per cent through the year to March 2022. In both cases, this is below its pre-pandemic average. The low reading is partially aided by the government's efforts to secure supply of essentials such as grains, energy and raw materials, which has ensured that China has not suffered from the same supply chain bottlenecks that have impacted developed economies. Softer growth in activity compared to pre-pandemic has been another factor behind this weaker pace of core inflation. The reimposition of lockdown measures in some regions, meanwhile, has temporarily depressed demand further which will weigh on price growth.

That said, upstream price pressures have been evident in China over the past year, with growth in producer prices reaching a peak of 13.5 per cent over the year to October. While it since has fallen, it remained elevated over the year to March 2022 at 8.3 per cent. Rising commodity prices have been the main driver for the increase in China's producer prices. Additionally, factory production cuts have led to power rationing as coal prices soared and the government restricted carbon emissions.

Given how much China exports to the rest of the world, Chinese export prices arguably are a more important factor in global inflation trends than domestic Chinese prices. The export price index is elevated, having recorded double digit price rises over the year to March 2022.

Implications for the inflation outlook

Looking ahead, there is a great deal of uncertainty regarding whether the recent lift in inflation will be transitory or sustained.

In its latest World Economic Outlook (April 2022), the IMF noted that it expected inflation to remain elevated for longer than previously forecast. The IMF projects that inflation will average 5.7 per cent in advanced economies in 2022, a rate that is broadly in line with the current OECD average for core inflation. Broadening price pressures over the rest of this year are driven by a combination of factors that include:

- higher fuel, food and commodity prices (aggravated by Russia's invasion of Ukraine)
- higher demand for goods on the back of strong fiscal support and still supportive monetary policy
- supply bottlenecks and disruptions
- increased expectations for inflation by consumers
- tight labour markets in the United States and other developed economies will continue to put pressure on inflation.

Inflationary pressures then are expected to subside in 2023 as the COVID pandemic eases its grip, supply chain disruptions ease, monetary policy tightens, and demand rebalances away from goods-intensive consumption towards services.

For much of 2021, most central banks viewed the pickup in inflation as largely being transitory. This stance has shifted in recent months, with many central banks expecting current inflation trends to persist for long enough to prompt the withdrawal of some monetary stimulus. For example, the US Federal Reserve recently has shifted its stance, raising interest rates as it admits that inflation may be more persistent than previously expected. It is now likely to tighten monetary policy at a much faster pace than previously expected in response to this threat.

The views from the European Central Bank (ECB), by contrast, have been more mixed. In December 2021, ECB board member Fabio Panetta stated that "the current inflation spike is temporary and driven largely by supply factors", while ECB President Christine Lagarde and Chief Economist Philip Lane echoed this view. However, in April 2022 the ECB noted that, "Inflation has increased significantly and will remain high over the coming months, mainly because of the sharp rise in energy costs." This has prompted the ECB to announce that it would end its net asset purchases within six months.

In our view, many of the factors which have driven the acceleration in inflation over the past year or so remain in place. As noted in a previous research piece, the pressure on global supply chains which has contributed to the broad-based increase in goods price inflation appear likely to persist throughout most, if not all, of 2022. Moreover, the current conflict between Russia and Ukraine, and concerns over the resulting disruption to global oil supply, could see oil prices remain higher than is currently expected, if not rise even further. In addition, future COVID variants could see supply issues linger for longer than expected, especially if China, which accounts for 15 per cent of global industrial production, persists with its COVID elimination strategy. For these reasons, it would appear likely that the current pace of inflation pressures at least will be maintained for some months yet.

That said, moves by central banks to reduce monetary stimulus should see some easing in goods demand as 2022 progresses. Moreover, there are signs that some global supply chain pressures are easing slightly, with further easing expected as 2022 progresses. This should work to see some easing in the pulse of inflation in the second half of 2022. Meanwhile, should a peaceful end be found to the current Russian-Ukraine conflict, oil prices could drop abruptly, especially if this coincides with an increase in non-OPEC supply. The consensus is for oil prices to decline from their current level, which not only eases pressure on headline inflation but on core inflation as well.

A key question for the outlook is whether medium-term inflation expectations of both consumers and businesses remain anchored. Or, will continued high inflation readings over the first half of 2022 prompt those expectations to move higher?

If inflation is expected to return to its pre-COVID rates once spending and stimulus cools, and supply chain issues are resolved, then it is less likely that current elevated levels of inflation will feed into negotiations for markedly faster wage increases. The March US Survey of Consumer Expectations shows inflation expectations for the year-ahead at 6.6 per cent, while three-year-ahead expectations are at 3.7 percent; the latter compares to a pre-COVID historical average of 2.9 per cent. This suggests that consumers believe that inflation will come down, although not quite to pre-COVID levels. Central banks will be keen to keep these expectations anchored.

Another key question is, as the pandemic impacts fade, will labour force participation rates in the US, UK and other countries stay low, or will they instead return to their pre-COVID levels? A return to pre-COVID levels of participation would ease labour shortages, especially in the services and transportation sectors, further helping to alleviate inflationary pressures.

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