



An Australian Government Initiative



Regional Development Australia

PILBARA

Pilbara March 2023 Bi-Monthly Economic Report



HIGHLIGHTS



HIGHLIGHTS



COST OF LIVING IN THE PILBARA



COMMODITIES DATA



OTHER PILBARA NEWS (INVESTMENT LEGISLATION, GOVERNANCE & COVID)

Federal Government's Resources Emissions Reduction Plan

Following more than 8 months of consultation and weeks of negotiations between the Climate Change Minister, Hon Chris Bown and the Greens leader Adam Bandt, on 27 March 2023, the Greens agreed to pass the Federal Government's resources emissions reduction plan.

A key element of the deal includes an agreement by Labor that it will expressly legislate what it called its "policy intent" to cut annual emissions from the country's 215 biggest resources, manufacturing and industrial polluters, plus any new entrants, from 140 million tonnes to 100 million tonnes by 2030. (cont' p10).

Interest rates

The Reserve Bank of Australia (RBA) determined at its 7 March Board meeting that it would increase the cash rate by 25 basis points to 3.60% due to the ongoing high global inflation. The forecast outlook for the global economy remains subdued downcast, with below average growth expected for 2023 and 2024.

The RBA has advised that "the monthly CPI indicator suggests that inflation has peaked in Australia. Goods price inflation is expected to moderate over the months ahead due to both global developments and softer demand in Australia. Services price inflation remains high, with strong demand for some services over the summer. Rents are increasing at the fastest rate in some years, with vacancy rates low in many parts of the country. The central forecast is for inflation to decline this year and next, to be around 3 per cent in mid-2025."

Australian labour conditions remain tight with the unemployment rate hovering at a 50-year low. The RBA advised that companies continue to face workforce difficulties, a challenge acutely felt in the Pilbara as businesses struggle to attract and retain the skilled workforce they require for the region's continued growth and expansion.

US Inflation Reduction Act

On 7 August 2022, the U.S. Senate approved the Inflation Reduction Act (IRA), combining the objectives of reducing domestic inflation-notably brought by the global energy crisis- whilst tackling climate change. Amongst the objectives set out in the energy sector, the IRA aims to: lower energy costs; increase investments in climate to reduce carbon emissions by 40% by 2030; and create employment by investing 60 billion USD in the clean energy sector, notably in manufacturing (solar panels, wind turbines, EVs). The passing of the IRA has had an immediate impact with countries and corporations moving quickly to capitalise on the opportunities of a changing world - including decarbonisation and the development of critical minerals. (cont' p10)



COST OF LIVING IN THE PILBARA CONT'



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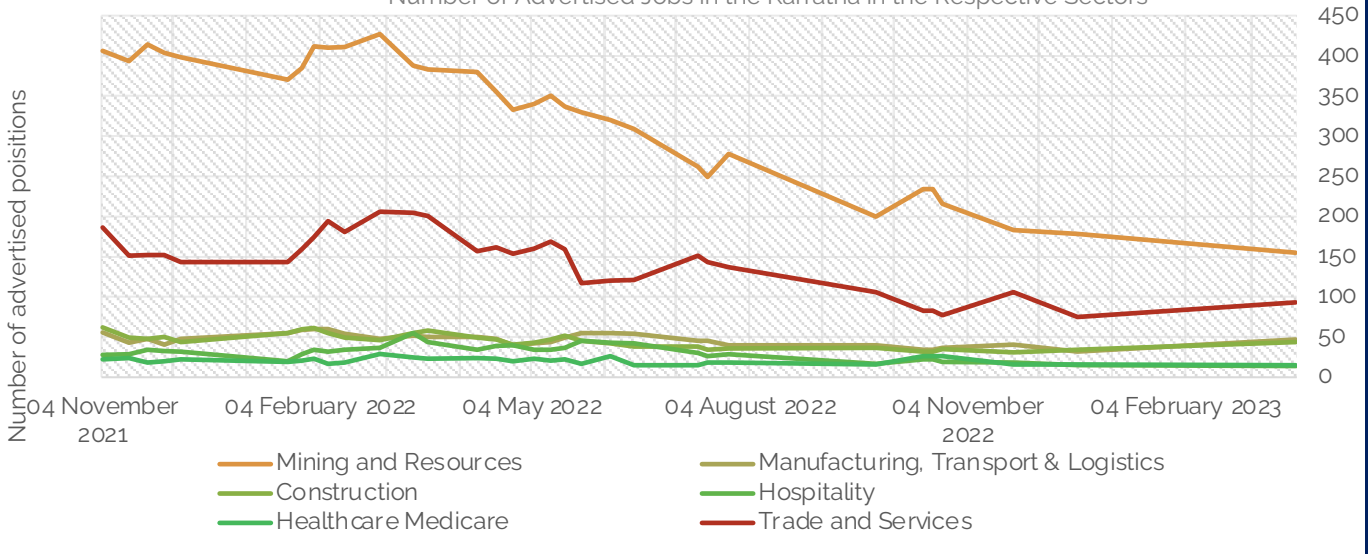
Employment Trends in the Pilbara

Since the peak number of advertised jobs in February 2022, the number of jobs available in the Pilbara region have decreased to around half.

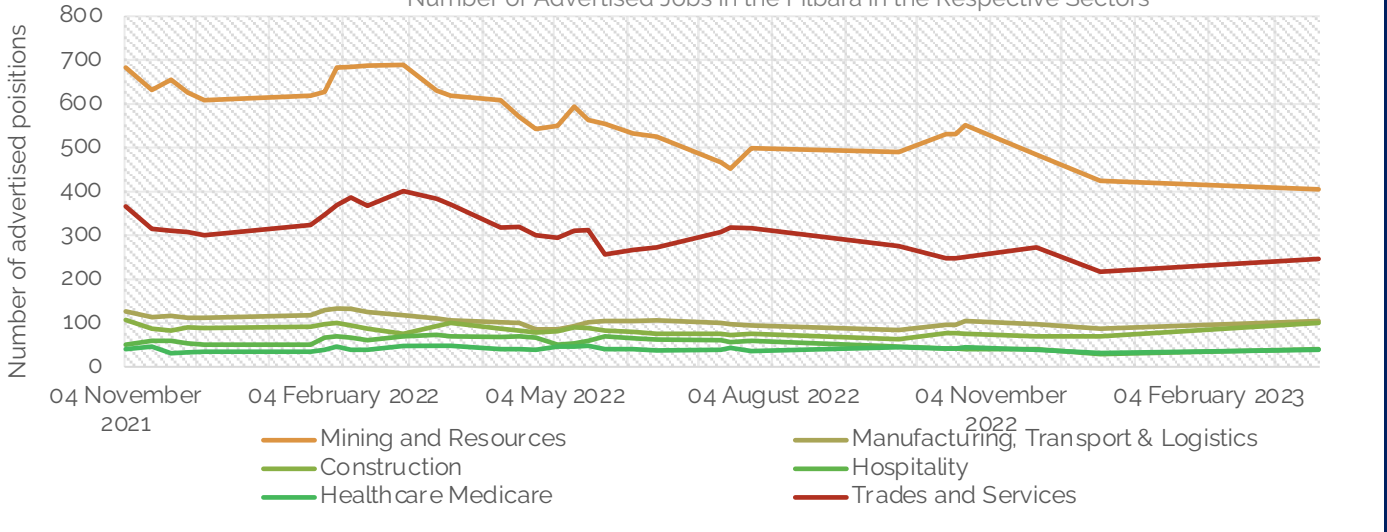
In Karratha, the advertised jobs have also plummeted with Mining and Resources jobs falling from an all time high of 450 in February 2022 to around 150 in March 2023. These trends suggest that many of the job vacancies that employers were struggling to fill following Covid-19 lock downs and border closures have found qualified candidates.

The Guardian reported that the mining boom is back in the Pilbara with workers migrating to the region for lucrative jobs thanks to the rising prices of UREA, Natural gas and oil. Companies are shifting their attention to the green energy potential with increasing job availabilities in the renewable sectors of the large mining organisations. Rare earth minerals, lithium, hydrogen, solar and wind are some of the emerging commodities attracting new work forces in the Pilbara. Hastings chief executive Alwyn Vorster said the growing demand for EVs and subsequent green focused project will bring carry on benefits to the region. With employment increasing and trickling down to small businesses and secondary job creation (ABC, 2023). Lack of housing availability is a key inhibitor to workers to moving to the region with rental prices increasing significantly in response to housing unavailability.

Number of Advertised Jobs in the Karratha in the Respective Sectors



Number of Advertised Jobs in the Pilbara in the Respective Sectors





COST OF LIVING IN THE PILBARA CONT'



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Food Prices in the Pilbara

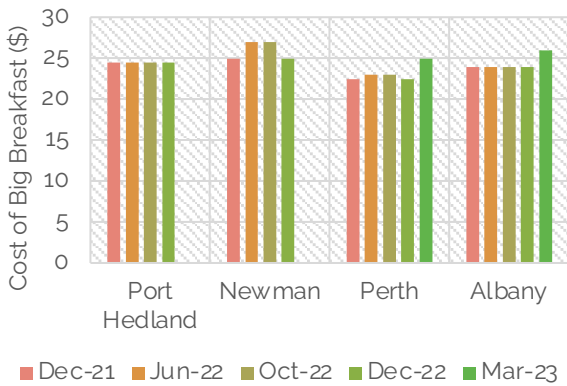
Food prices in the Pilbara remain a key indication of the cost of rural/remote living when compared to Perth or other areas of the country. The data collection since December 2021 has shown a trend of increasing prices for fast food chains around the country, while the high cost of living in the Pilbara remains evident in both Dominos and Macdonalds' prices.

The cost of a Dominos traditional pizza remains \$5 higher in Karratha when compared to other cities in Western Australia. Meanwhile the Macdonald's Medium Big Mac Meal clearly demonstrates the premium cost of living in Karratha compared to any other Australian town.

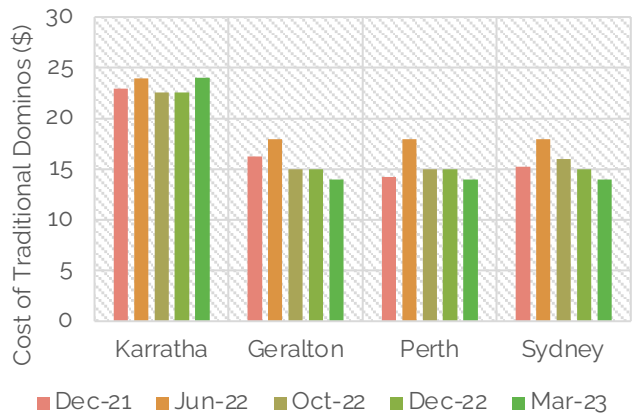
In comparison, the KFC pricing model has stayed relatively consistent across locations in Australia, however, has been steadily increasing from December 2021 at a low of \$12.50 for a Zinger Box to a height of \$16.55 in March of 2023. The Big Breakfast at the Dome café has also experienced a small increase in Perth and Albany, while the Pilbara's higher prices have fluctuated.

Economists and supply chain experts believe food prices will reach a peak in the first half of 2023 in Australia. This is due to the global market and Australia having adjusted their supply chains considering the war in Ukraine that initially triggered worldwide shortages and price spikes. The domino effect of Russia's invasion was felt through price hikes in fertiliser, electricity and fuel all trickling down to supermarket food costs and fast-food options (Sydney Morning Herald). In Australia, high labour rates and high interest rates are additional factors in pushing up food prices. Notably, across the Pilbara businesses are still struggling to fill all hospitality jobs following the Covid lockdowns.

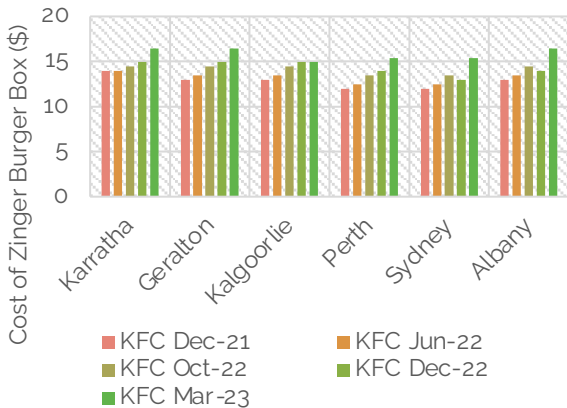
Comparative Cost of Big Breakfast at Dôme Cafe



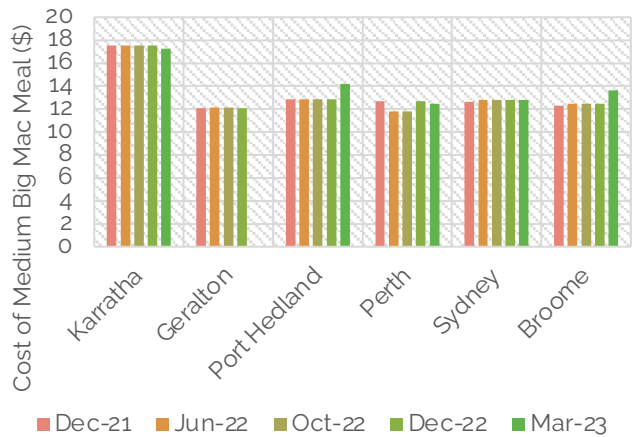
Comparative Cost of Traditional Dominos Pizza



Comparative costs of Zinger Box from KFC around Australia



Comparative Cost of Medium Big Mac Meal





COST OF LIVING IN THE PILBARA CONT'

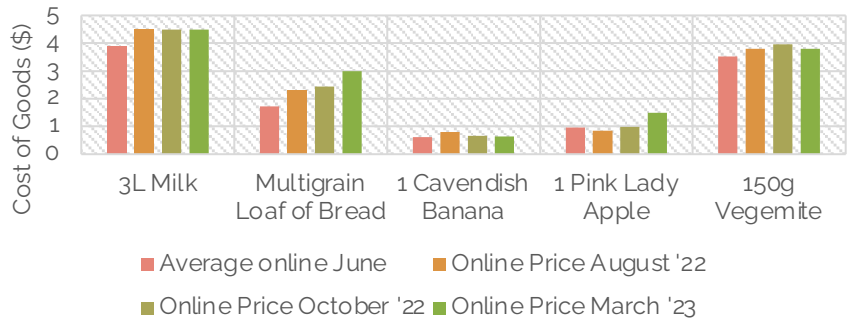


Food Prices in the Pilbara cont.

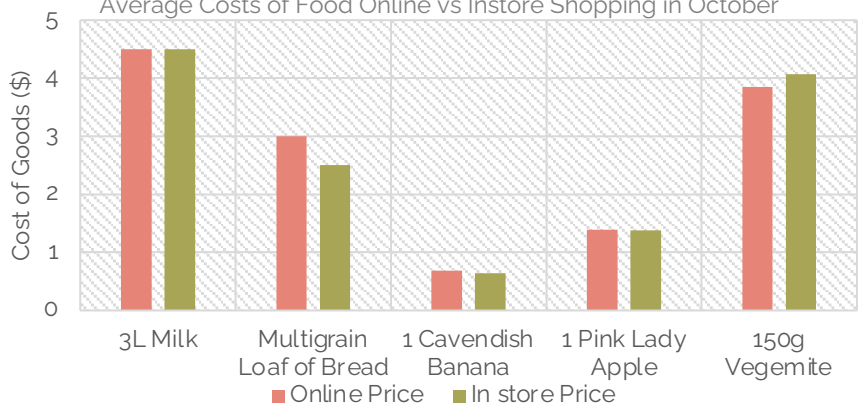
The average cost of basic goods when purchased online has slowly increased since June 2022. The 3L milk experienced its first price hike at the start of the 2022 financial year and has remained at the new price of \$4.5 per 3L since. Costs of other goods including multigrain bread and various other staples not pictured here have experienced priced increases with Coles locking several prices in until the end of 2022 to alleviate some pressure from consumers. Certain fresh fruit and vegetable prices have fluctuated seasonally and dependent on the availability due to flooding and resulting railway closures that occurred in middle of 2022. Fortunately, the Pilbara sources much of its fresh food from Carnarvon therefore has benefit from minimal price changes.

Pilbara in store shopping prices vs online shopping prices have begun to reach an equilibrium. Prior months have seen discounts for online shoppers to encourage contactless shopping, while now instore prices remain marginally lower for fresh produce and bread.

Average costs of Online food in 2022 and 2023 at Coles and Woolworths



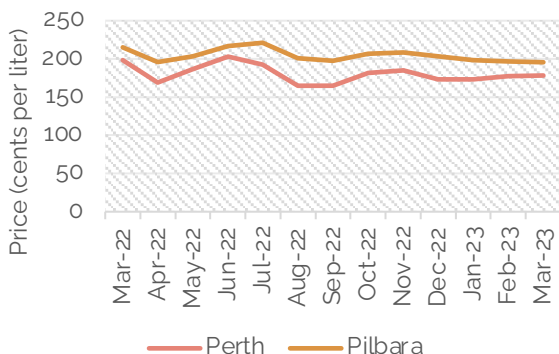
Average Costs of Food Online vs Instore Shopping in October



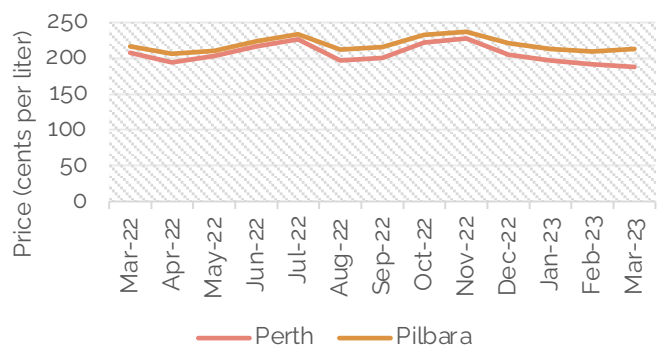
Fuel Prices in the Pilbara

ULP prices in the Pilbara have continued their slow decline since the previous high in October 2022 (following the cutting of the fuel excise) and have begun converging with the slowly increasing prices in Metro Perth. Meanwhile the diesel price in Perth has continued decreasing following the spike in October 2022 while Pilbara's diesel prices are further deviating from Metro Perth areas. Across Australia diesel prices are significantly more expensive than petrol over the December 2022 quarter. The ongoing war in Ukraine was a catalyst for the higher diesel prices around the world together with refinery strikes in France and the Northern hemisphere winter

Average Price of ULP March 2022 until March 2023



Average Price of Diesel from March 2022 until March 2023





COMMODITIES SUMMARY



Iron Ore

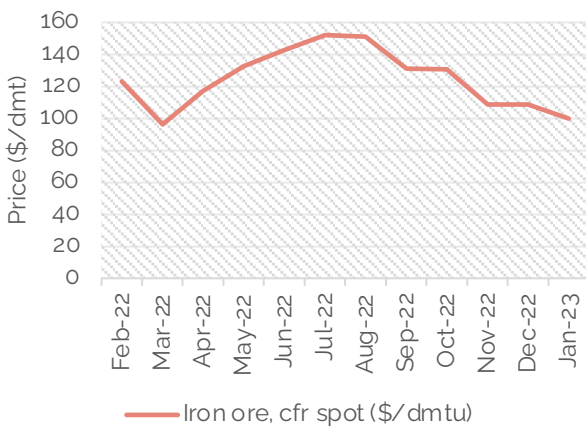
Prices for iron ore cargoes with a 63.5% iron ore content (used to make steel for infrastructure and other construction projects) eased to \$132 per tonne from the nine-month high of \$134.5 t touched on March 15th, tracking the downturn in other base metals as fears of a global banking crisis dampened risk sentiment.

Prices were also influenced by the Chinese government's announcement that it will cut steel production and ban new capacity in the sector, citing efforts to reduce carbon emissions. Notwithstanding these announcement global expectation for solid demand growth from China remain positive..

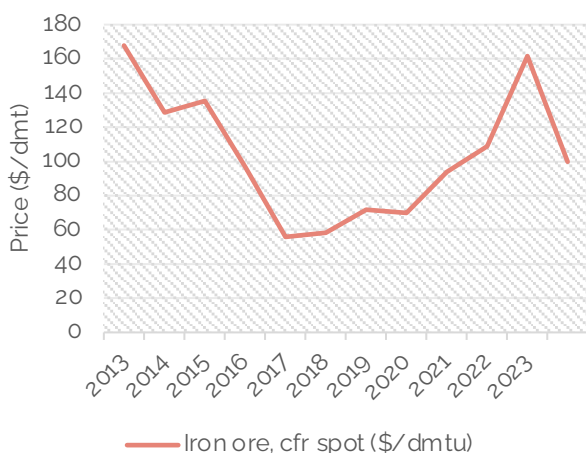
During its National People's Congress session, the Chinese government announced a 5% growth target for this year, dashing hopes of a more ambitious plan but confirming the appetite for growth in infrastructure and construction.

Expectations of fresh support for the sectors were pushed forward after industrial production growth slid below market projections in the first two months of the year, even though strong investment flows supported the bullish momentum. (Trading Economics)

Iron Ore price from December 2021 to November 2022

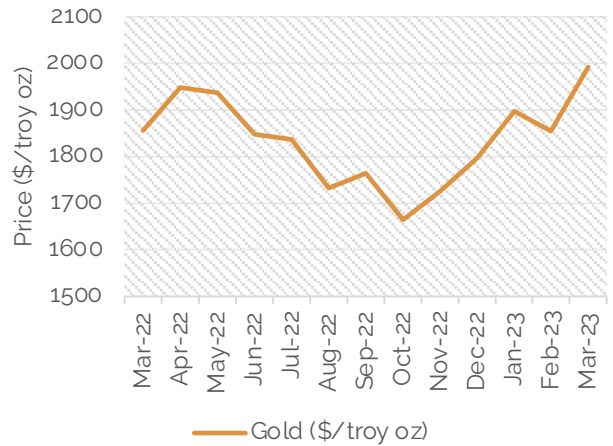


Iron Ore price from 2011 to 2022

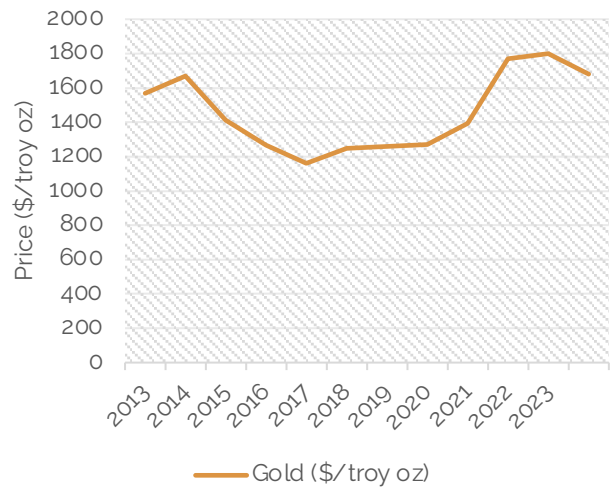


Data from The World Bank

Gold Price from March 2022 to March 2023



Gold Price from 2013 to 2023



Gold

Gold prices rose to \$2,000 USD in mid March 2023 reaching the highest point in the past year. This was due to market volatility sparked by the Silicon Valley Bank's collapse and uncertainty in the banking sector that caused UBS to acquire Credit Suisse.

Gold's price is highly influenced by supply and demand yet frequently chosen as an investment asset and a safe haven against inflation and economic certainty.

Gold has an inverse square relationship with the USD. The current USD strength against currencies hurts the price of gold as it becomes more expensive for overseas buyers. The downwards trend of the US dollar over the past month has further pushed the price of gold up.

A wide range of projects across Australia are now focusing on gold including Catalina Resources in Kookynie and Dundas Projects in WA.

Calidus Resources' Warrawoona Project in East Pilbara produced 12,657 ounces of gold in the September 2022 quarter (Australian Resources Investment, 2023).



COMMODITIES SUMMARY CONT'



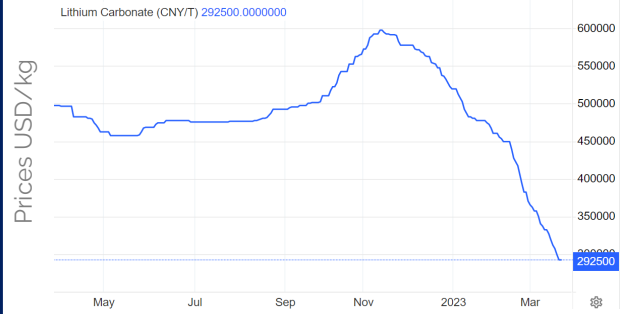
Lithium

Following a record price climb at the end of December 2022, Lithium experienced a 25% crash in March 2023, with an overall 41% decrease in price in 2023 since January. In December 2022 Goldman Sachs affirmed its bearish lithium outlook due to supply outpacing demand in 2023.

Since 2021, high lithium prices have incentivized adding new production streams including Pilbara Mineral's Ngungaiu Plant in Pilgangoora. The price drop has reflected a potential surplus of lithium in 2023 as demand for electric vehicles slows. In China, the EV demand growth is expected to drop from 95% last year to 22% this year.

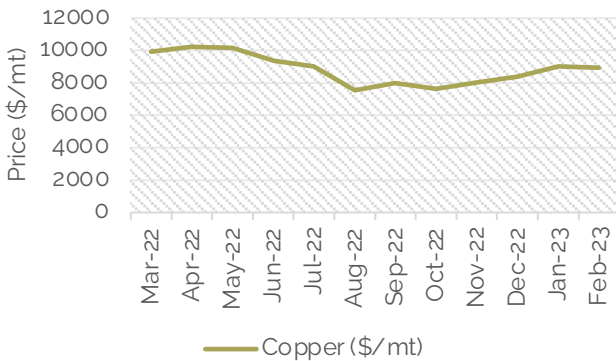
The recent concerns over lithium prices caused lithium giants Albemarle, Livent, and SQM to fall 10%. The world's largest battery maker, CATL, is offering discounts to Chinese automakers for battery manufacturing. Reuters suggests these discounts are a response to the downturn in the price of lithium and a bid to win more orders.

Lithium Carbonate Prices from May 2022 to March 2023

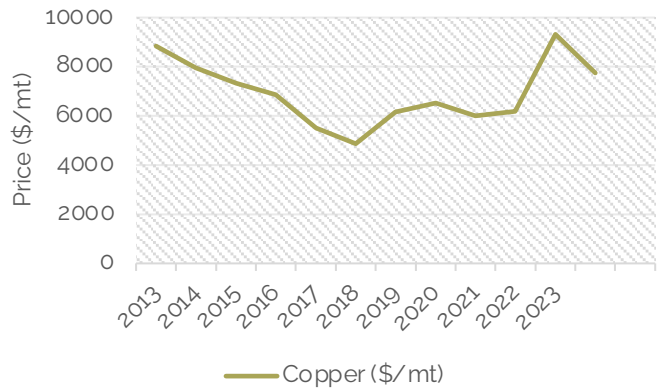


Lithium carbonate min 99.5% cif China prices USD/kg
Data from Trading Economics

Copper price from February 2022 to February 2023



Copper price from 2013 to 2023



Data from The World Bank

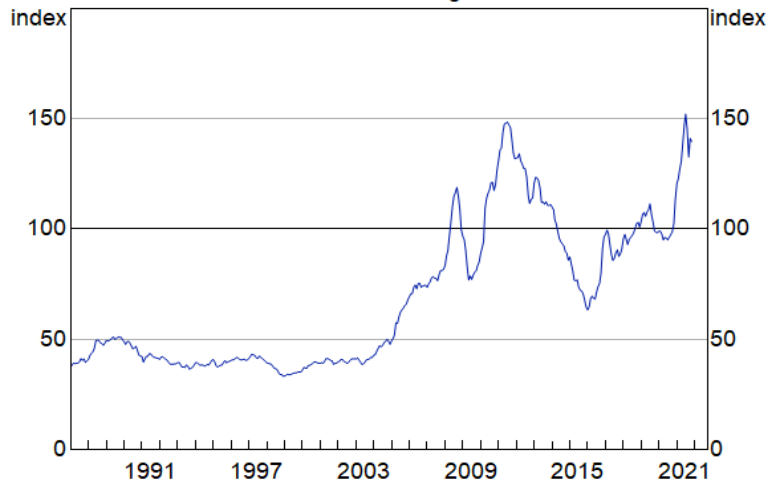
Copper

The price of copper has experienced a steady decline since January 2023 following the headway after falling to its lowest level since November 2020 on 15 July 2022. Copper prices have retreated greatly since the record highs in 2022.

The metals market remains highly volatile due to macroeconomic pressures. Last years fears of a global recession put pressure on the price of copper along with the weak demand from Chinese manufacturers. China's zero Covid Policy, a higher dollar and the mass sell off on the London Metal Exchange all contributed to dropping copper prices (Capital, 2023).

The price trend of copper at the beginning of 2023 remains choppy, as pandemic-related lockdowns across several regions in China continue to raise concerns about a slowdown in economic growth. Manufacturing plants suspended operations and construction was halted in Shanghai contributing to a decrease in consumption of copper's largest market.

RBA Index of Commodity Prices SDR, 2019/20 average = 100



Source: RBA



COMMODITIES SUMMARY CONT'

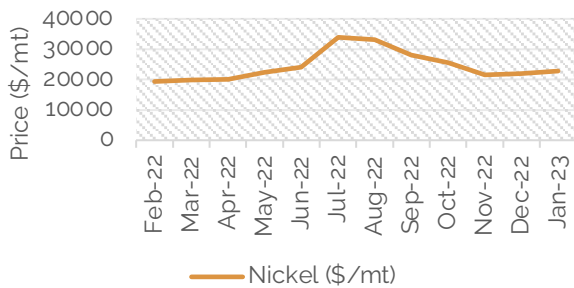


Nickel

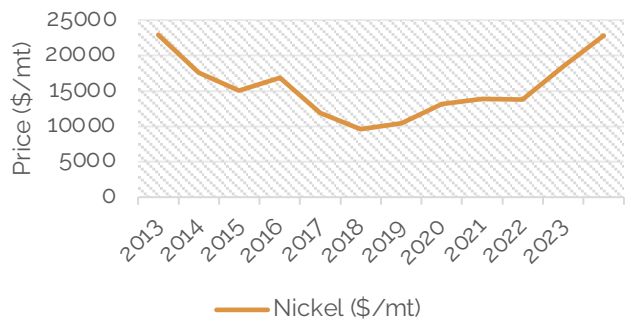
Whilst a comparatively minor metal in the Australian commodities landscape, it is prominent player with a base of Australian producers and explorers dating back to its discovery in Kambalda in the 1960s. Nickel prices saw massive gains in 2022, rising around 50% to its highest year-end price in 15 years at more than US\$30,000/t due to disruptions to supply chains and wide scarcity of raw materials and metals. However, nickel prices are subject to price fluctuations with the heat coming off so far in 2023, with prices stalling, down over 23% to US\$23,974/t in mid March.

Much of this year's price drop has been down to macroeconomic issues, a rising US dollar and fears that while pent up demand from China's emergence from Covid will bolster demand in the first half of 2023, a lower than expected 5% economic growth target will dull hopes of a second-half boom.

Nickel Price from February 2022 to February 2023



Nickel Price from 2013 to 2023



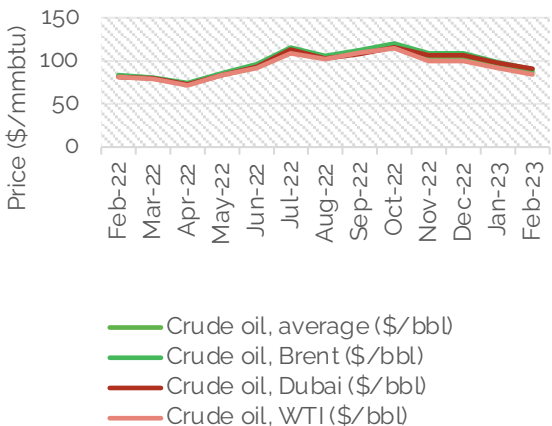
Data from The World Bank

Oil

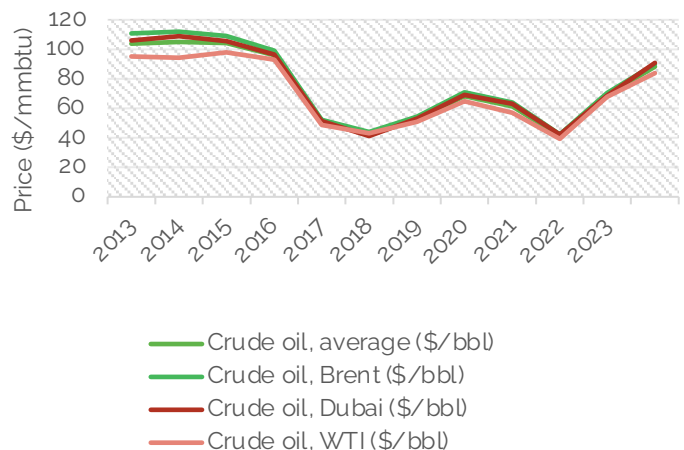
Crude oil faced renewed selling pressure in March as global recession risks have once again raised concerns. In late March crude oils prices dropped 13.55%, its largest drop since February 2020. A sign of the fear which engulfed markets in early March from the continuing banking sector fallout. This decline was a further sign of the ongoing pessimism around potential demand concerns and recessionary risks resurfacing. In late March the Saudi Energy Minister Prince Abdulaziz bin Salman reiterated the need to stick by the OPEC decision in October 2022 to cut production by 2 million bpd until the end of 2023. However, given the recent decline in prices speculation continues to rise as to how low will OPEC wish oil prices to go before stepping in once more.

March will also see Russia cut output by 500,000 bpd and further slash oil exports from its western ports by up to 25%, as mounting Western sanctions drain its revenues. The world's second-largest oil exporter will seek to redirect its shipments of crude as well as refined products to countries such as China and India that have not sanctioned Moscow over its invasion of Ukraine. The International Energy Agency sees China accounting for almost half of this year's 2 million bpd growth in global oil demand, which could overtake supply after the first half and push producers to reconsider their output policies

Crude Oil Price from February 2022 to February 2023



Crude Oil Price from 2013 to 2023



Data from The World Bank

COMMODITIES SUMMARY CONT'

Gas

Energy market are expected to experience another year of sluggish growth and rising prices in 2023, according to the Economist Intelligence Unit (EIU). However, governments around the world are set to implement a range of measures to curb the worst of the growing energy crisis including the US's Inflation Reduction Act (IRA) and the Australian Federal Government's Powering Australia plan that focuses on creating jobs, cutting power bills and reducing emissions by boosting renewable energy.

Demand remains subdued as European Union sanctions on oil and gas exports from Russia came into full force in 2023, forcing the demand elsewhere to increase and subsequently placing upward pressure on prices. Russia, the world's largest exporter of fossil fuels, had already begun withholding gas supplies to Europe months ahead of its invasion of Ukraine in 2022 and the invasion only exacerbated the tight supply.

As Europe, which consumes a quarter of its energy yearly from Russia, seeks to replace Russian gas, it has forced up US, Australian and Qatari ship-borne liquefied natural gas (LNG) prices. This, in turn, has impacted domestic supply.

In 2022, the ACCC identified that the big gas exporters are prioritising European and Asian markets over the domestic market. In 2023, the ACCC forecasted 1299 PJ of gas would be exported under long-term contracts with overseas buyers with the ACCC Chairman Gina Cass-Gottlieb stating that: "increasingly, LNG exporters have diverted most of their excess gas to overseas spot markets, with as much as 70 per cent of the excess volume going overseas in recent years."

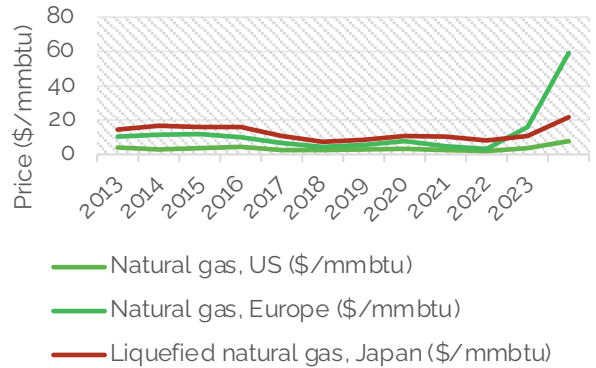
The 'export parity netback' price for domestic contract pricing is around \$10 per gigajoule. However, overseas contract pricing, which was on par with domestic pricing, has now jumped to \$40 since the invasion. It has reached a level that domestic gas users are not willing to pay. To cushion the blow, governments have begun to step in through direct assistance or by limiting consumer prices and then paying energy providers the difference.

In Australia, the government announced four key measures to address the impacts of price increases due to global energy pressures on families, small businesses and manufacturers. This includes a promising 12-month emergency gas price cap, to be set at \$12 per gigajoule on new wholesale gas sales by east coast producers.

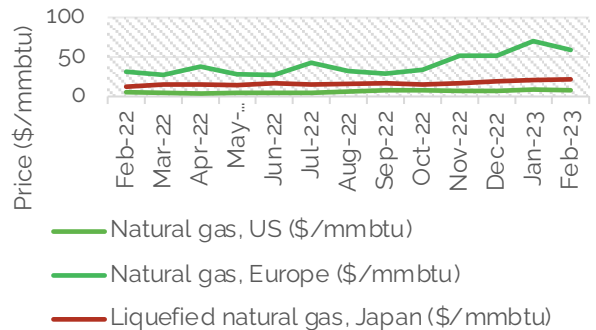
Further, Prime Minister Anthony Albanese reinforced the commitment made by the Energy Minister to implement the Capacity Investment Scheme. This will unlock around \$10 billion of private and public sector investment in clean, dispatchable storage and generation.

Ultimately, this scheme is designed to ensure a reliable and affordable electricity supply and reduce Australia's exposure to high coal and gas prices over the medium and long term.

Natural Gas Prices from 2013 to 2023



Natural Gas Price from February 2022 to February 2023



Australia isn't the only country working to promote energy security. For example, both the EU RePowerEU and the United States IRA contain major initiatives to develop energy efficiency and promote renewable energies.

2023 will not be an easy year for the global energy market or major gas projects, with increasing volatility showing no signs of stabilising and Australian government policy requiring key gas producers to adopt international best practice baselines for the carbon dioxide in their new fields



COMMODITIES SUMMARY CONT'

Fertiliser and Salt

Fertiliser is the latest commodity experiencing a parabolic price increase, increasing over 30% since the beginning of 2023 and exceeding the previous record set in 2008. These high prices are as a direct result of the ongoing war in the Ukraine and the associated trade repercussions on supply. Russia is a key exporter of nitrogen, phosphate and potash fertilisers and whilst trade with Russia has not ceased completely global supply has decreased as importers and vessel charterers minimise their interaction the country.

Gas is also a key input for fertiliser production, particularly urea (the most popular nitrogen fertiliser in global agriculture). Accordingly, Europe's nitrogen capacity is heavily exposed to rising natural gas prices. High gas prices have resulted in a curtailing of production in regions such as Europe, further constricting an already tight market. In addition, sanctions in Belarus have significant implications for the potash market. Combined with Russia they contribute around 40% of traded volumes annually.

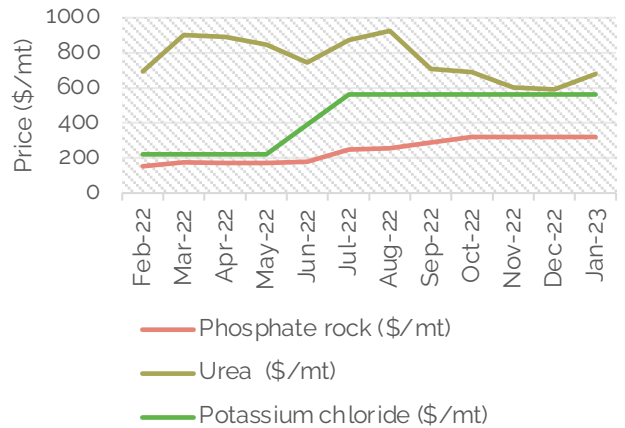
In Australia and Southeast Asia region, the demand for urea annually is approximately 2Mt and 24Mt respectively. Historically Australia has imported nearly all its urea, with approximately 70% from the Middle East and China. However, tensions around supply have been mounting for several years following China's announcing an export ban in August 2022 and Russia restricting nitrogen and phosphate fertiliser exports for several months even before it invaded the Ukraine.

Over the past 2 years, nitrogen fertiliser prices have increased significantly, together with while phosphate and potash prices. Whilst Australian farmers have benefitted from high agricultural commodity prices, helping to partly offset high input prices, demand destruction is increasingly likely due to high prices and supply shortfalls.

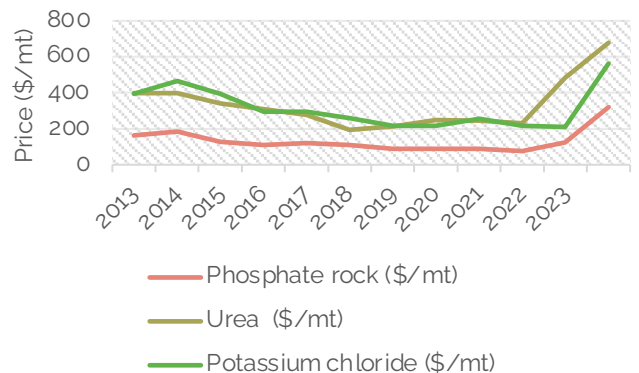
Fertiliser/plant nutrition is one of many variables in farming systems and a prolonged period of fertilizer underapplication will impact longer term yields. Given the already tight grains and oilseeds market, and the importance of both Russia and Ukraine in those markets, food price inflation is an increasingly prominent risk.



Phosphate Rock, Urea and Potassium Chloride price from February 2022 to February 2023



Phosphate Rock, Urea and Potassium Chloride price from 2011 to 2022





OTHER PILBARA NEWS (INVESTMENT, LEGISLATION, GOVERNANCE & COVID

Infinity Mining Ltd: critical minerals exploration in the Pilbara

Infinity Minerals (a Queensland based company with tenements in WA), is currently exploring its Tambourah South project in the East Pilbara. The company is installing a new, advanced geophysical method to map several hundred metres of subsurface and to create 3D data visualisation to help focus its exploration activities. Infinity is searching for pegmatite-hosted lithium, rubidium and rare earths mineralisation, with a goal to find out where lithium-caesium-tantalum (LCT)-rich pegmatites identified at surface may have grown at depth.

Pilbara Minerals Technology Investment in its Pilbara based Pilgangoora Project

Pilbara Minerals has signed a 12-month contract with leading mining technology company Plotlogic to improve identification and delineation of ore and waste materials at its Pilgangoora Project located 120km from Port Hedland. This investment will potentially lead to increased production of lithium at the mine and it is a strategic decision that will assist the company following the Greens agreement to passing the Federal Government's Resources Emissions Reduction Plan.

The Pilgangoora ore body is one of the largest hard rock lithium deposits in the world and is considered strategically important within the global lithium supply chain. Its operation consists of two processing plants, the Pilgan Plant located on the northern side of the Pilgangoora area (produces a spodumene concentrate and a tantalite concentrate) and the Ngungaju Plant located to the south and produces a spodumene concentrate.

Federal Government's Resources Emissions Reduction Plan

Other changes agreed to as part of the deal include increasing transition support to decarbonise industries including steel, cement and aluminium from \$600 million to \$1 billion.

The Federal Government agreed to provide "hard-to-abate, value-added" manufacturing companies softer annual emissions reduction rates of as little as 1 per cent to 2 per cent, compared with the general safeguard facilities average of 4.9 per cent.

BHP Proposed Iron Ore Expansion in the Pilbara

In Mid March 2023, BHP's iron ore asset president Brandon Craig outlined BHP's plan to increase production in WA (*Business News Success and Leadership breakfast*). BHP has previously flagged plans to bump up iron ore production from 300 million tonnes per annum to 330mtpa. Mr Craig did not expand on the costs associated with this increased production but said it would be in the billions if the company were to build a mining hub.

Mr Craig advised that *"It sounds like a small increment to go from 290 to 300 to 330 million tonnes, but the capital works involving in doing that is pretty significant.*

We would have to invest some multiples of billions of dollars around port and rail infrastructure and the same for developing new mines. Either we have to do something near one of our existing mines like Yandi or potentially build an entire new hub. If we go down the routes of hubs, that's multiple of billions of dollars.

Mr Craig further advised that *"BHP had started conducting studies on the proposed production increase noting that in the next two years we'll make decisions in terms on where we're going to go. The WA State Government had been supportive to the resources industry but there had been some issues in the efficiency of the approvals process. If I want to go and build a new mining hub, it would take me approximately eight years from start to finish to work through the studies, engineering, the construction but also the various approvals that needs to take place. We've reached a point now ... where it's the approvals and regulations that are becoming constrained to how fast we can actually execute our projects".*

US Inflation Reduction Act (cont' from p1)

The IRA contains close to \$US400 billion (\$596 billion) worth of subsidies, tax breaks and other incentives to encourage investment in renewable energy and climate change measures. The has resulted is a surge of capital, people and innovation both within the United States and to the US. Australian industry is responding to the IRA by stating that:

"Australia urgently needs to bolster its national competitiveness given many of the big trends under way won't be the country's "friend" without the right responses. That's unlike the changes Australia has navigated successfully previously, including its natural advantages in agriculture and resources like iron ore and coal and gas. We are competing head-to-head with other countries. Even in resources, we don't have the advantage that we have in these other commodities. So, this focus on competitiveness, productivity, the policy settings that will attract capital, I think are going to be even more important in the future" (Aust Business Summit)