Clinging on

Half-Year Australian Construction Market View

June 2023

Overview

Prospects for the Australian economy are now sitting on a knife edge, with inflation continuing to increase in the first half of this year but with growing expectations that headline interest rates could be near their peak. However, even though 2022 proved to be a good year for construction, demand is still expected to fall sharply in 2023 due to a sharp decline in project commencements last year. Despite the prospect of a deteriorating market, confidence remains high due to an unprecedented pipeline of work over the next few years.

A less negative outlook…

GDP grew by 4.7% in the second half of 2022 which was an increase on the first half of the year. This built considerable momentum resulting in increasing sentiment and prospects. As the table below shows, the latest forecast from the RBA has not significantly worsened – in overall terms – from the February 2022 forecast, although it has declined. The RBA is still anticipating GDP growth in 2023, albeit at a slower rate. However, CPI remains at an elevated level for 2023, although this is a lot lower than that experienced the previous year.

June inflation forecasts from Westpac were a little more bullish, suggesting CPI will fall to 4% by the fourth quarter. Most of this improvement is driven by global rather than Australian factors – particularly a significant easing in energy pricing pressures.

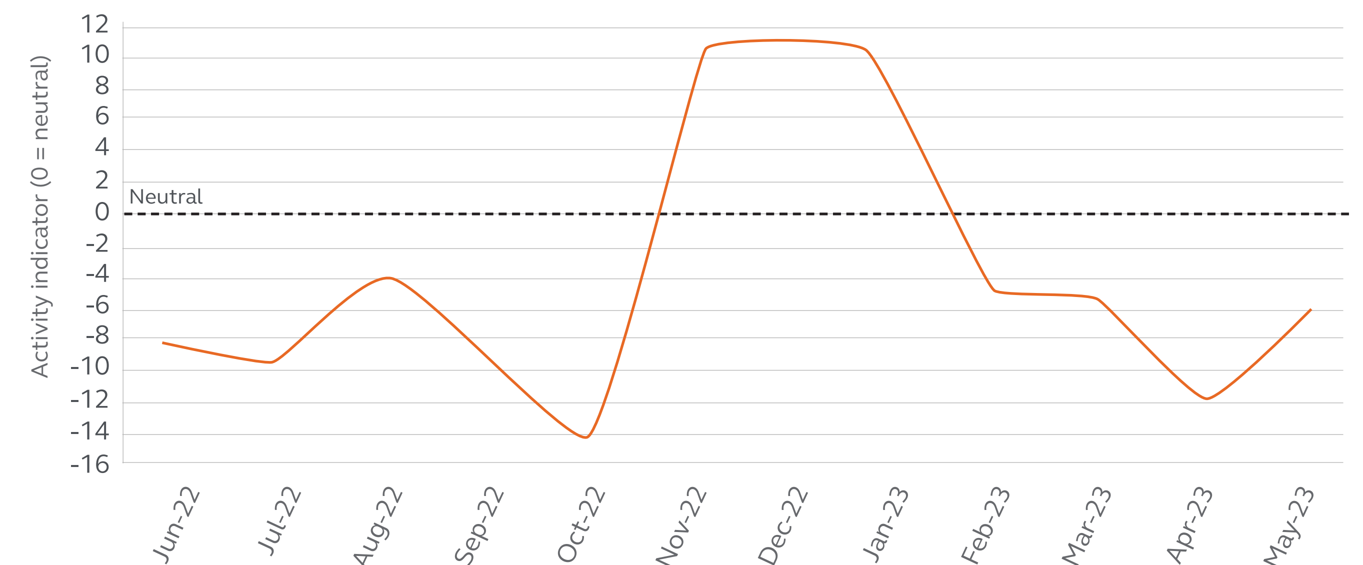
However, Australian prospects in 2023 can still be considered as getting less worse rather than significantly better. The latest business investment projections are also disappointing considering that it is still below the pre-pandemic baseline.

	RBA Dec 2022	RBA Feb 2023 Forecast	RBA May 2023 Forecast
GDP	2022: 2.7%	2023: 1.6% 2024: 1.6%	2023: 1.2% 2024: 1.7%
CPI	2022: 7.8%	2023: 4.8% 2024: 3.2%	2023: 4.5% 2024: 3.2%
Wage Price Index	2022: 3.3%	2023: 4.2% 2024: 4.0%	2023: 4.0% 2024: 3.8%
Unemployment	Q4 2022: 3.5%	Q4 2023: 3.8% Q4 2024: 4.3%	Q4 2023: 4.0% Q4 2024: 4.4%
Business Investment	2022: 3.1%	2023: 3.7% 2024: 3.0%	2023: 2.3% 2024: 1.9%

Poor investment prospects together with a stubbornly tight labour market are the key reasons why the RBA now believe that Australia's economy will not be able to grow at a rate above 2% without the risk of higher inflation. This lower threshold for sustainable growth implies that it will be very difficult to increase earnings and the tax base in the medium term. Indeed, the RBA predicts that real terms Australia GDP will still lag pre-pandemic levels in 2025.

For the construction sector, contradictory data suggest high levels of uncertainty. On one hand, the latest ABS data paints a picture of slowing demand and activity. Arcadis internal survey evidence also reveals examples of projects being delayed by a range of factors, with reducing scope, business case re-evaluation, increasing construction costs and re-phasing all featuring regularly.

By contrast, the Australian Industry Group Performance of Construction Index reported that decline in construction eased by 5.8 points but still remained in contraction (-6.6), with constructors reporting that slowing new orders in previous months has also begun to drag down employment as well. Supply chain disruptions and labour shortages have eased for the time being but remain a problem in the longer term. Constructors have struggled to complete ongoing works due to these supply side constraints. This aligns with the current ABS data regarding a reduction in project starts. Supply side constraints, especially a shortage of skilled trades, continue to inhibit activity but there are now signs of material supply chain pressures easing.



Source: Australian Industry Group Performance of Construction Index (PCI)

House building the main casualty in 2023?

Australia's housing market suffered its largest annual decline since 2008 last year as sharp interest hikes sapped buying power and put off investors. The national Home Value Index fell 5.3% in 2022, which is its first decline since 2018, according to CoreLogic. However, the latest February data indicates a sharp reduction in the rate of decline and lower listing volumes (fewer properties being put on the market for sale) are helping protect the market from further downward pressure.

The Index of Consumer Sentiment for Australia, published by Westpac and the Melbourne Institute, fell by 7.9% from 85.8 in April to 79.0 in May – holding near historical lows as high inflation, rising interest rates and economic uncertainties continue to weigh heavily. However, it is widely anticipated that once interest rates peak (which may not be far off) and once inflationary increases settle (which has hopefully already happened) consumer confidence will return.

According to the latest ABS data, total dwelling commencements fell by 21.2% for the year up to the September 2022 quarter. Given that housing accounts for about 60% of building output, such a contraction will have a substantial impact on material and labour supply chains. Therefore, a continued slowdown in new build housing remains the most likely scenario in the coming months. This is worrying considering that there is currently a significant housing affordability crisis across the country.

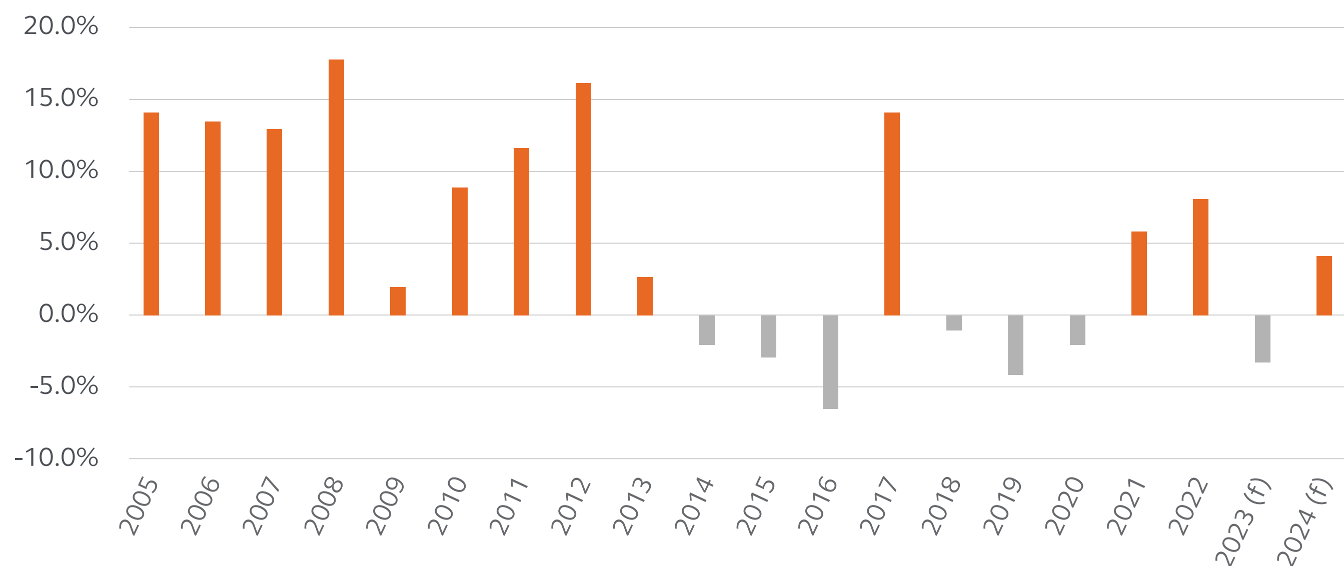
Doubling down on construction dip

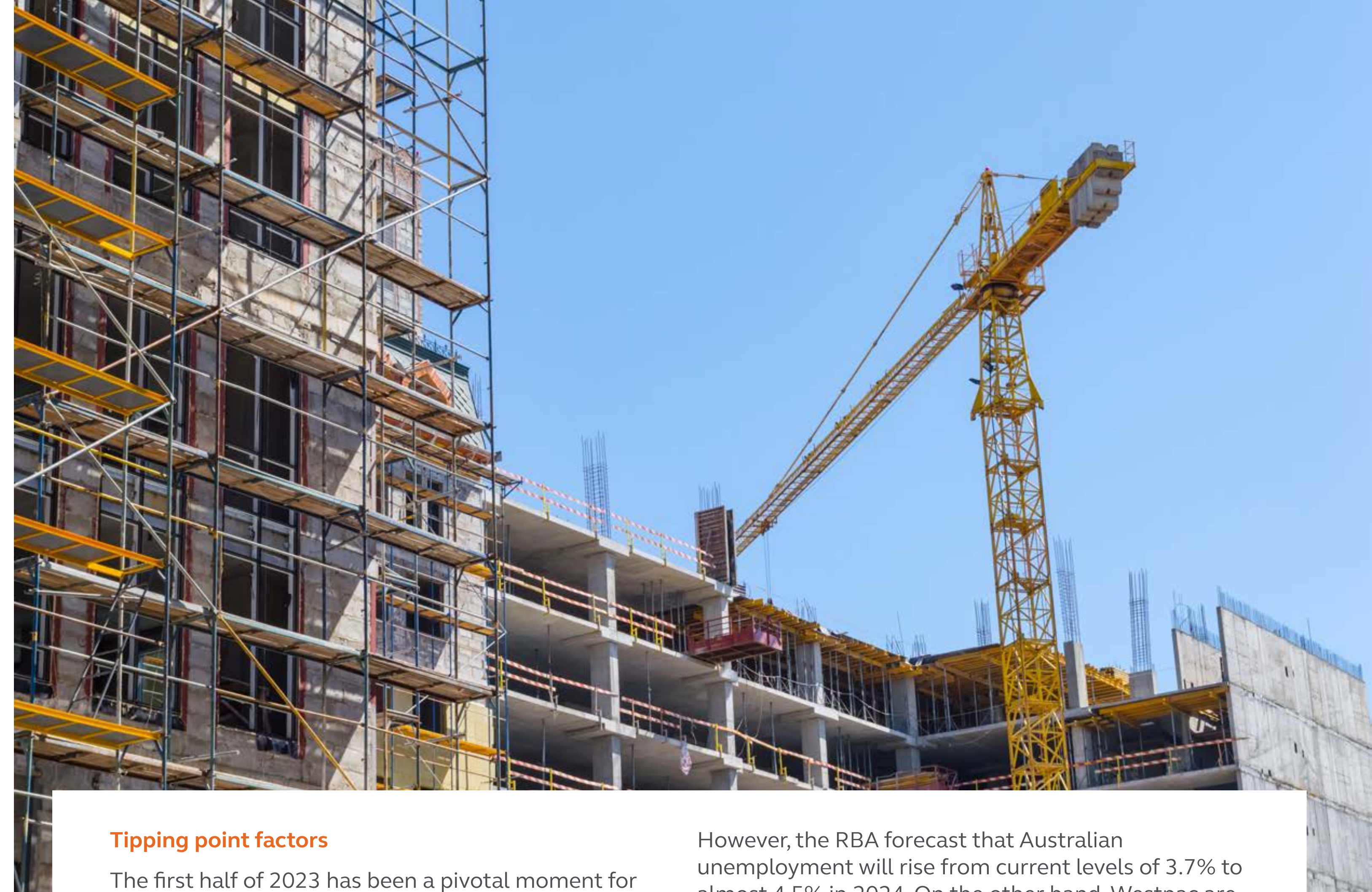
While the latest data from the ABS indicates that construction output grew significantly between 2020 and 2022, the reduced number of project-starts last year coupled with a growing number of project delays, points to a reduction of total construction output by about 3.5% in 2023. However, this is expected to be short lived due to the level of procurement activity that is currently underway. The Australian construction industry has struggled to build consistent momentum since the collapse of the natural resources boom. Trying to predict the wider effects of a slowdown, regardless of how temporary, is currently difficult due to the resilience of markets in the second half of 2022.

By contrast, aside from the infrastructure sector, where long-term investment programs will see further growth, there will be other sources of expansion in 2023. In the public sector, the $10Bn Capital Expansion Program that was launched earlier this year by Queensland Health will absorb most, if not all, labour capacity in the market. On the back of this, a further $7Bn has been committed for the 2032 Olympic and Paralympic Games assets – notably the rebuild of The Gabba and the construction of the Brisbane Indoor Arena at Roma Street.

This additional investment creates a strong pipeline of work for Queensland, which has been sorely missed during much of the last decade. But this won't happen overnight, and it will obviously take a period before this investment starts to impact construction output. This slow start means that public non-residential spending should increase quite rapidly beyond 2023, but will not be enough to offset falls elsewhere.

Growth in Total Construction Output





Tipping point factors

The first half of 2023 has been a pivotal moment for Australian construction and the wider economy. Poor policy decisions by the RBA and the government could condemn Australia to a 'hard landing' and a deeper slowdown. By contrast, for construction, the current mood could result in a faster bounce back in workload. The table below shows a range of factors which could influence the direction of travel from here.

The labour market, for instance, is expected to remain relatively tight over the next few quarters, with the potential to keep inflation higher for longer.

However, the RBA forecast that Australian unemployment will rise from current levels of 3.7% to almost 4.5% in 2024. On the other hand, Westpac are forecasting steeper rises in the employment rate to more than 5% by 2024.

What is clear is that the 'tipping point' scenario is yet to materialise, with ABS data on output and new orders remaining resilient through to the end of 2022. Given that there has not yet been an emphatic reversal in actual workload, there is a downside risk that construction inflation could be more persistent for longer if demand levels remain healthier than expected.

	Positives	Negatives
Economy	• Faster reduction in inflation and interest rates. • Improved sentiment leads to increased investment. • Lower unemployment than forecast. • Budget is growth and investment positive.	• Investment levels lower than forecast. • High interest rates trigger hard landing. • Energy price volatility causes higher inflation.
Construction Sector	• Workforce growth and productivity improvements. • Lower energy prices result in less material cost inflation. • Faster throughout of government investment.	• Cuts in public sector capital budgets. • Planning – delays triggered by reforms to both housing and national projects. • Distressed debt impacting projects. • Stretched market with capacity issues and labour / skills shortages.

In focus:
Around the states

While there are many factors impacting the construction industry across Australia, each state continues to face local challenges as well as opportunities.

Queensland: Everything, everywhere, all at once

- In 2022, Queensland was the top of the leader board for the biggest increases in construction cost at 14.4% for the year. This is a list that no one wants to top. A significant increase in workload, fuelled by the post-COVID recovery, put substantial pressure on supply chains and a tightening labour, with the energy crisis literally adding more fuel to the fire.
- Labour and skills shortages are now showing signs of biting hardest in Queensland, with demand for skills significantly outstripping supply. This is across the whole of the state but is becoming much more pronounced in regional areas. According to Infrastructure Australia, there is an anticipated shortfall of almost 8,500 construction workers per month over the course of 2023, based on modelling for major public infrastructure works. We anticipate that the shortfall will be higher than this as we move into 2024 and beyond.
- The housing crisis continues to deepen due to significantly fewer residential project commencements last year, loans for new build homes falling to record lows and many projects now being put on hold as rising construction costs continue to bite. The Queensland Government has previously committed to build more than 5,000 public housing dwellings over five years. Last year only a fraction of this target was delivered, with just 130 homes being completed.

However, the recent announcement that the Queensland Government will halve land tax obligations and scrap the Foreign Land Tax Surcharge for eligible Build to Rent projects is a welcome one. It is hoped that these changes will spur on a new wave of housing construction – however, elevated construction costs will continue to remain a challenge.

- House builders are under increasing financial pressures and perhaps more so than commercially orientated builders. Between January and May this year, 1,086 construction related businesses became insolvent, accounting for more than 26% of business insolvencies across Australia during the same period. This almost equals the number of companies that became insolvent in the last five months of 2022. The collapse earlier this year of Porter Davis is a huge blow to the industry, leaving 1,700 partially built homes across Victoria and Queensland. This only serves to highlight the deep-rooted issues that are impacting the industry. The plight of Porter Davis is one example – there are countless others.
- The Queensland Government has recently released to market a $10Bn Capacity Expansion Program, which will deliver more than 2,500 additional hospital beds over the next six years. This includes a new $750M Queensland Cancer Centre, new hospitals in Bundaberg ($1.2Bn), Coomera ($1.3Bn) and Toowoomba ($1.3Bn), as well as expansions at 11 sites across Queensland (~$4.5Bn).

It is currently anticipated that most of these assets will be delivered by the end of 2027 and it is widely expected that this program of works will absorb, and overtake, any capacity that is currently available within the market.

- The Federal and Queensland Governments have recently confirmed ~$7Bn of funding for several projects associated with the 2032 Olympic and Paralympic Games. These include:
  - The redevelopment of The Gabba Stadium - $2.7Bn.
  - The construction of a new 17,000-seat Brisbane Arena - $2.5Bn.
  - The construction of several new and upgraded venues - $1.9bn.
- While this is welcome news for the 2032 Games, as well as the future legacy of the region, the risk now is ensuring that all the above can be delivered on time and on budget. It remains to be seen whether the Queensland Government’s decision to deliver these assets internally, within departments, is inspired or reckless. The principal danger is whether there is sufficient capacity, as well as capability, within the market to deliver these key assets.
- All the above creates an interesting dilemma for Queensland. After a decade of relatively low construction activity – or at least a level of activity that has adequately supported the available capacity across the State – Queensland is now moving into an extended boom period.

Our assessment indicates that the current Health program will likely absorb any capacity in the market, whether that is labour or skills, for at least the next four years – particularly at the Tier 1 and Tier 2 level. It is likely that there will be an overlap between this program of works and the commencement of construction associated with the assets for the 2032 Games – so we may well see government departments compete for contractors and resources. With a dire need to support the residential market, and to start building homes for an increasing population, creative thinking is needed on how to deliver a substantial pipeline of work over the next decade. It really is a situation of 'everything, everywhere, all at once'.

New South Wales: All change at the top

- The election of a majority Labor government in New South Wales will lead to a shift in the state’s infrastructure priorities. Some of the more notable ones are below:
  - Legislating the state’s existing decarbonisation targets of achieving net zero carbon emissions by 2050 and 50% reduction in carbon emissions on 2005 levels by 2030.
  - Cancellation of the proposed $6Bn Beaches Link project and a deferment of funding for the Great Western Highway Upgrade tunnelling projects.
  - A $1.1Bn funding package for road upgrades across Sydney and regional NSW over the next three years.

- » An additional $200M allocated to the Parramatta Light Rail Stage 2 project.
  - » Funding of $155M to progress business cases for two new Sydney Metro lines.
  - » An additional $300M allocated to the Transport Access Program to increase accessibility and safety across the rail network.
  - » An additional $700M allocated to the currently planned Rouse Hill Hospital.
  - » Delivery of 100 public pre-schools co-located within public primary schools.
- As in other states, labour shortages continue to bite across New South Wales, with regional areas particularly affected. This is forcing contractors to pay premium prices to attract suitably skilled workers to deliver their projects. A recent change in Federal Government policy to increase the ceiling for the permanent Migration Program to 195,000 is a welcome one – but is it sufficient to solve the labour and skills crisis?
- According to Infrastructure Australia, the projected demand from public infrastructure alone is anticipated to be at least 130,000 workers in New South Wales alone in December 2023. And yet supply is only anticipated to be at circa 72,000 – a little more than half of what is required. General construction labour will account for 23% of the overall demand shortfall.
- According to the ABS, non-residential construction prices increased by 8.9% last year. Housing construction prices also rose by 16.3%, providing further evidence of the significant cost pressures that the industry is currently facing. Where contractors are able, these costs are now being passed on to clients. However, in many cases contractors are unable to pass these costs on due to the nature of the contracts that were agreed prior to the pandemic. Our recent Construction Market Sentiment Survey suggests that 53% of respondents had absorbed up to 10% of realised escalation risk and that 47% of respondents had absorbed between 10% and 25% of additional costs.
- This paints a relatively bleak picture, which only gets bleaker when you consider industry insolvencies, with New South Wales sadly leading the way. 934 construction-related companies went out of business last year, accounting for 42% of the total number of construction-related insolvencies across the country. According to the latest insolvency data from the Australian Securities Investments Commission, this trend has continued in 2023. At the end of the first quarter, there were reportedly 276 business failures in New South Wales, accounting for 42% of the total number of construction-related insolvencies across Australia.

Victoria: Slowing down, but not for long

- Construction market activity continues to remain relatively high following an extremely busy period last year. However, labour and skills shortages are now becoming prevalent and the higher cost of borrowing are proving to be the main challenges in 2023. Following a gradual decline in private sector spend at the end of the last year we are now seeing signs of a slow-down in construction activity during 2023.
- However, any such slow-down will likely be short lived as public sector spending remains elevated and is likely to increase further. Labor secured another term in government last November and public infrastructure spending is anticipated to increase significantly across health, transport and residential sectors.
- According to Infrastructure Partnerships Australia, the current infrastructure funding of $85Bn represents a commitment of $1.8Bn per month for the next four years. It remains to be seen how this volume of work can be delivered, particularly considering the stress and strain that the construction industry is currently under. It is anticipated that the Victorian labour force will need to grow by at least 15% by 2024. This growth will be driven by the ongoing delivery of major road and rail projects, including Suburban Rail Loop.
- In addition to this the Victorian Government plans to deliver eight new or redeveloped hospitals, equating to $6.5Bn, by 2029. These projects will need to be delivered at the same time as another 35 hospitals that will be delivered across Australia. According to Infrastructure Partnerships Australia, the growth in the social infrastructure sector in Australia will cause labour demand to grow by more than 120%.
- To combat the growing housing crisis, the Victorian Government announced at the end of last year a $5.3Bn investment in their "Big Housing Build" to create more than 12,000 new social and affordable dwellings over the next four years. At least 25% of this program will be invested across regional Victoria, creating a strong pipeline of work but will continue to exacerbate regional capacity challenges.
- On the ground, we have seen signs that contractors continue to reduce their tender validity periods to offset material and labour price escalation. In many cases, contractors are declining competitive fixed-price tenders in favour of more open-book and collaborative procurement methods, such as Early Contractor Involvement and Two-Stage tenders.

Where clients press forward with lump sum tenders they are often unable to obtain their first-choice tender list – and sometimes only receive one or two prices. Contractors are also feeling the squeeze from their established supply chains and often have difficulty in gaining adequate trade coverage.

Western Australia: No end to short-term turbulence

- Of all the states covered in this Market View, Western Australia is the most turbulent, partly due to its heavy reliance on the resources sector. The global demand for commodities in 2022 kept the local economy particularly buoyant. However, at the end of 2022, several key public and private sector projects were put on hold (or slowed down) because of global supply concerns or funding pressures. It is anticipated that some, if not all, of these projects may come back online within the next 12-18 months.
- Offsetting this, the Western Australia Government is projected to spend $10Bn on public infrastructure during 2023 – with much of the expenditure focused on major transport and social infrastructure. We therefore anticipate that tender pricing in the infrastructure sector will remain largely uncompetitive.
- It is a markedly different scenario in the building sector where there is some capacity in the market. Therefore, we have seen signs that tender pricing has been largely competitive and nowhere near the elevated levels experience in 2022. However, we anticipate that, as momentum is built towards the start of 2024, demand for construction skills and labour will significantly increase, while labour and materials supply will remain largely constrained. It is likely, therefore, that tender pricing will become much more volatile as we move to the end of the year.
- A key concern remains the financial stability of the construction supply chain. Several contractors are still tied to various fixed price contracts and have been subjected to substantial cost escalation. With no contractual mechanisms to offset price increases in the market, it is a question of how much cost can contractors absorb. It is anticipated that there will be further business failures throughout the year, unless clients and contractors can come to agreements that are 'best for project'.
- Only Western Australia and Queensland were faced with domestic border closures during the pandemic. However, unlike Queensland, Western Australia also suffered from labour and skills leaving the state, therefore worsening the skills shortage crisis. The state government has taken a different tack and is actively driving an aggressive campaign to attract overseas workers and talent to fill the gap in supply.

The Arcadis forecast

Australia's construction markets continued to be resilient throughout 2022. While construction output did not achieve previous levels it was the most consistent it had been since 2018. This is despite several headwinds including the Ukraine War, rising energy costs and soaring interest rates. These headwinds have finally started to take their toll, with a slow-down in 2023 clearly occurring. But what does the forecast look like beyond this?

2023 will be quieter than 2022

Construction output in 2022 continued to grow and build on the recovery that started at the end 2021. This was the highest level of output (8.3%) since 2017 (13.9%) but was still some way from hitting the same level. The total construction workforce also increased marginally last year by circa 1.8% (circa 21,000 workers), easing fears of an acceleration of the sector's own great resignation. This good news story developed against the backdrop of pessimistic forecasts from many bodies, including the Reserve Bank of Australia.

However, a very different scenario has started to emerge since the start of this year. Looking in more detail at the output data for Q4 2022, the early signs of market challenges are plain to see, but perhaps not emerging as quickly as expected. The sectors that grew most strongly in 2022, including new build housing and industrial, all saw activity falling in the final quarter. Furthermore, market fundamentals for the housing sector are looking relatively poor in line with reducing sentiment for 2023. Housebuilder expectations around project starts are extremely cautious.

However, the RBA's recent decision to lift interest rates for the twelfth time in just over a year has resulted in a significant drop in consumer confidence following a surge of positivity in April 2023, when rates were held for the first time. According to Westpac, consumer confidence jumped by 9.4% to 85.8 in April, followed by a sharp decline of -7.9% in May.

Despite this recent volatility, all signs are pointing to a slow-down in overall construction activity during 2023, particularly when compared with the recovery-fuelled activity of 2022. According to the latest ABS data, building commencements in 2022 fell by 17.9% when compared to the previous year. The residential sector has been hit the hardest in terms rising construction costs and rising inflation has resulted in loans for new build homes falling to their lowest levels. However, there is a growing pipeline of government spend across Australia, making any slow-down relatively brief.

Dominance in public spending

As we continue to move through 2023, government spending across Australia is anticipated to increase significantly – particularly in key sectors such as transportation and social infrastructure. Health is becoming a dominant sector across several states – with the largest investment recorded in decades.

The anticipated demand will far outstrip current supply in terms of labour and skills, meaning that it will be difficult for private sector clients to compete.

Housing crisis is set to deepen

Rapidly rising inflation is having an adverse impact on the housing sector. The cost of borrowing is now at its highest level in more than a decade and, due to rising construction costs, developers have struggled to get projects to stack up. The combination of increased costs and less investment has seen apartment construction slow down considerably. In addition, the recent collapse of several house builders, including Porter Davis which has placed 1,700 projects in jeopardy across Victoria and Queensland, only serves to highlight how dire the situation is becoming.

Surging population growth and a reduction in supply will only exacerbate the predicted shortfall of homes in the next five years. The National Housing Finance and Investment Corporation (NHFIC) predicts that 268,000 more people will migrate to Australia between 2022 and 2024 than it predicted in its February 2022 report. The reduction in supply has substantially increased the predicted housing shortfall from circa 60,000 to more than 100,000 by 2027.

With the private residential sector slowing down there is an immediate need for Federal and State Governments to pick up the shortfall particularly in terms of social and affordable housing. However, the Federal Government's proposed $10Bn Housing Australia Future Fund, which would have seen the delivery of more than 30,000 new social and affordable homes over five years, is currently stalled in negotiations following strong opposition as it was felt that the legislation did not go far enough.

Current skills and labour shortages are just the beginning

The growing skills and labour shortage is not confined to just one or two states – it is an endemic problem that will get far worse before it gets better. It is anticipated that 470,000 construction workers will be required to enter the industry in the next five years to meet projected demand, according to the latest Infrastructure Australia Market Capacity Report. There is no silver bullet to this issue, but the first step should be for clients, including government, to fully understand the scale of the issue – as well as the potential impact on project budgets – and cut their cloth accordingly. Longer term, a more aggressive campaign to attract overseas talent and skills is needed, increased investment to attract school students into the industry, as well increasing diversity and female participation at all levels and throughout the construction supply chain.

Pay and productivity

Two years ago, in our July 2021 Construction Market View – *Window of Opportunity* - we ran a special feature on improving labour productivity in a post-COVID market. In the UK, construction productivity increased by 2% in the post-COVID environment, indicating that the construction sector was using its skilled labour better and providing extra capacity to absorb growth.

Sadly, this has not been the case in Australia.

Overall, the labour force has remained relatively static at approximately 1.15 million workers, even as real term output increased last year. Since the end of the pandemic productivity has continued to decline and was 1.8% lower in 2021 than in 1990, as highlighted by the Australian Constructor's Association report published in November 2022 – *Disrupt or Die.*

It is therefore clear that, due to declining labour productivity, construction is unable to counter current inflationary pressures.

Construction earnings are notoriously difficult to track due to high levels of self-employment. However, average earnings were up by 3.8% in the year. In practice, construction wage inflation has been no higher than the wider economy. The data suggests that despite the booming workload, there has not been an inflationary premium for construction in 2022.

Looking forward, we assume that the growth of the labour force will lag growth in output and demand and labour scarcity will continue to be a problem. Finding ways to materially affect and improve productivity will play a crucial role in reducing labour market pressures.

The beginning of the end for materials price inflation

Sky high material prices have been the major factor driving construction cost inflation since the beginning of the V-shaped recovery in 2021. Thankfully, there are now clear signs that this inflationary pressure is subsiding. With wholesale energy prices lower than they were in 2022, inflationary pressure will ease even if energy remains three times more expensive than the long-term trend. While current data suggests that there are still some material capacity and availability concerns, there are signs that many of these issues are now being resolved.

However, there are still some downside risks, particularly related to commodity prices that are back on an upward trajectory after a soft 2022. Iron ore is up by 41% from a price trough in October 2022. Copper is up by 11%. Price hikes are not expected to reach the peaks seen in 2021 and 2022, however the re-opening of Chinese real estate markets adds a further complicating factor. Whilst market signals are positive for 2023, contractors and their clients are going to need to stay alert with respect to short-term price fluctuations.

Cost escalation forecast

The economic outlook has declined somewhat since we prepared our last forecast in October 2022. The headwinds that formed our view that markets would slow have now been realised. House builders are now adjusting to the new reality by making staff cuts and major infrastructure clients have been reprofiling their investment programs in line with inflated costs and fixed budgets.

The forecast now has three major components:

- Input cost inflation affecting labour and materials will continue to result in higher construction costs, even as workload falls in the short term.
- Due to issues with regards to capacity and supply chain depth, regional areas will carry higher levels of inflation compared to metro areas based upon current and future workload.
- Inflation trends impacting infrastructure and buildings will continue to diverge, with infrastructure being affected by materially higher inflation than buildings.

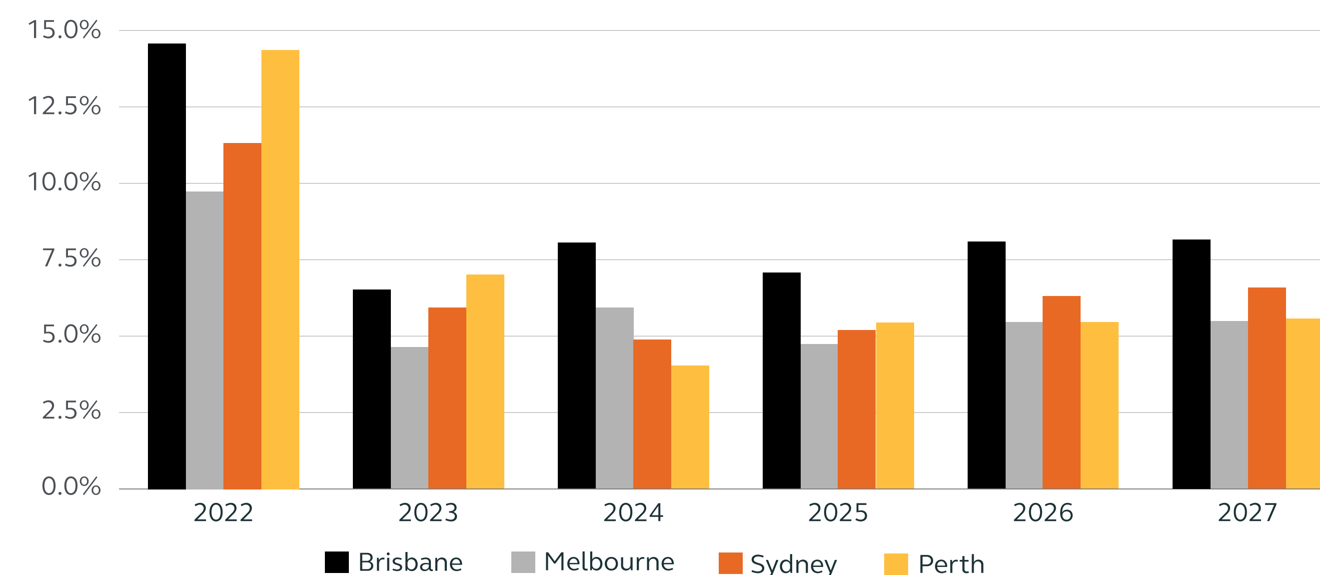
On the demand side, the duration of the current slowdown remains difficult to predict, with activity in the first half of this year being relatively subdued. However, despite this slow down we do not anticipate a reduction in input price pressures to help mitigate inflation in the second half of 2023 and beyond.

- We have extended our forecast for Buildings and Infrastructure through to 2027. In reviewing our projections for Infrastructure, we have now, for the first time, provided individual forecasts for Heavy Civil and Rail Infrastructure.
- Looking forward to 2026 and 2027, we set-out long-term inflation expectations across all sectors in recognition of the likely upward pressure on labour markets and earnings.
- 2022 Buildings cost escalation has been updated in line with the latest ABS data. Broadly, actual cost escalation was significantly higher than what was previously forecast.
- We anticipate that Buildings cost escalation in Brisbane will start to significantly outstrip other cities due to a combination of a shallow supply chain, reducing capacity and a heavy pipeline of work associated with social infrastructure, transportation and 2032 Games assets.
- Buildings forecasts for 2023 have largely been **retained**, except for Perth whose cost escalation forecast has reduced slightly from our previous forecast.
- Buildings forecasts for 2024 and 2025 in Brisbane and Melbourne have been **increased** due to the anticipated increase in workload associated with government expenditure.
- With the Labor Party now in control of State and Federal Governments across Australia, trade unions are beginning to show signs of pushing boundaries when it comes to worker pay rises. It is currently anticipated that wage increases from August 2023 could peak at 25% over the next three years (excluding allowances and penalties). This anticipation has significantly impacted forward-look assessments.

Inflationary Factors	Deflationary Factors
Peak levels of workload	Structural deflation after 2022 peak
Legacy energy cost inflation	General economic slowdown
Core inflation	Order book replacement in commercial and residential sectors
Labour and skills shortages	Lower fuel costs
Wage increases due to trade union pressures	
High cost of risk transfer	
Commodity markets	

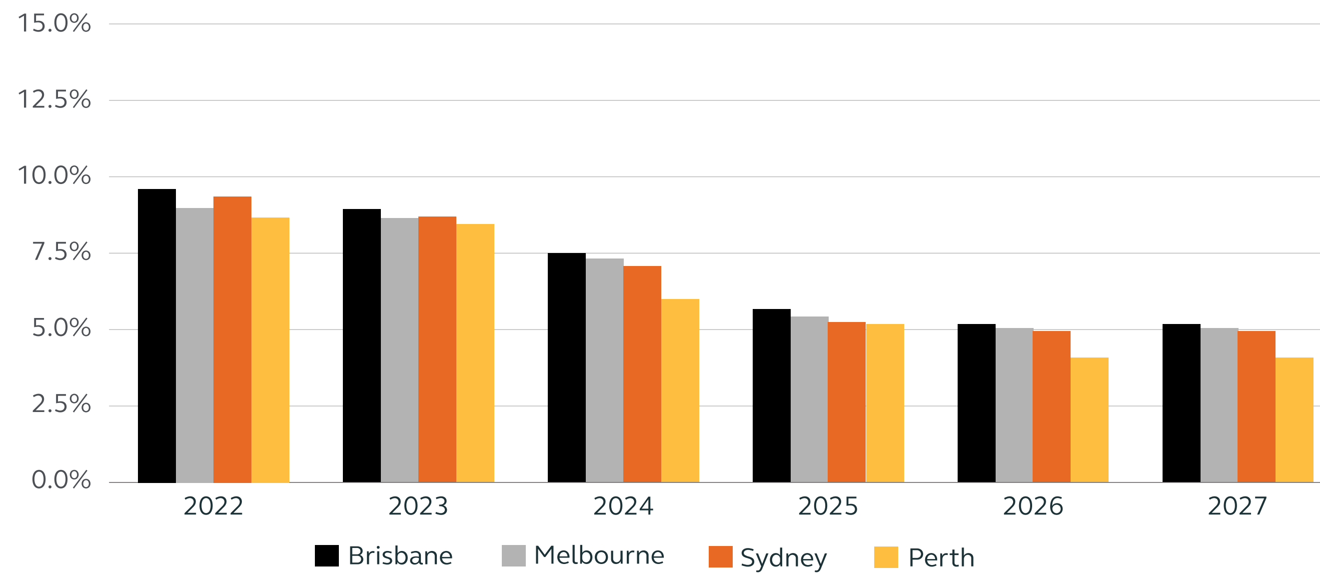
Arcadis Buildings Cost Escalation Forecast

	Brisbane	Melbourne	Sydney	Perth
2022	14.4%	9.8%	11.6%	14.3%
2023	6.9%	4.8%	5.9%	7.2%
2024	7.8%	6.0%	5.0%	4.4%
2025	7.2%	4.9%	5.2%	5.4%
2026	7.9%	5.4%	6.4%	5.5%
2027	7.9%	5.4%	6.4%	5.5%
Total	**52.1%**	**36.6%**	**40.5%**	**42.3%**



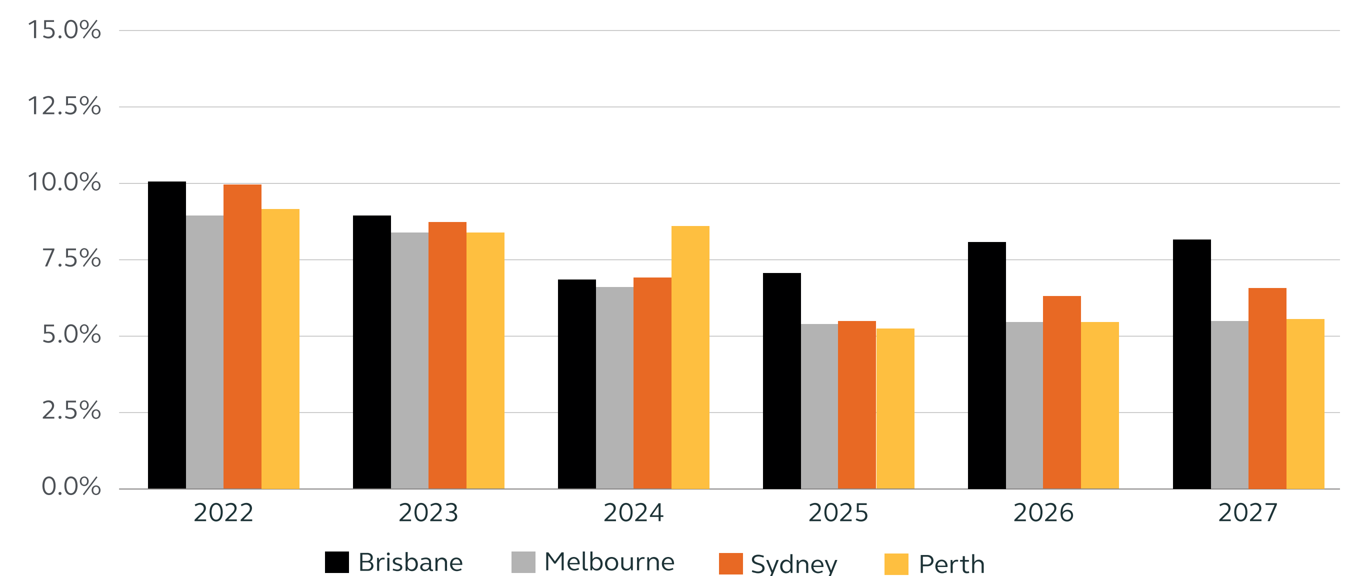
Arcadis Heavy Civil Infrastructure Cost Escalation Forecast

	Queensland	Victoria	New South Wales	Western Australia
2022	9.8%	9.4%	9.6%	9.2%
2023	9.3%	9.0%	9.1%	8.8%
2024	7.5%	7.2%	7.1%	5.9%
2025	5.8%	5.6%	5.4%	5.0%
2026	5.1%	5.0%	4.9%	4.2%
2027	5.1%	5.0%	4.9%	4.2%
Total	**42.6%**	**41.3%**	**41.0%**	**37.3%**



Arcadis Rail Infrastructure Cost Escalation Forecast

	Queensland	Victoria	New South Wales	Western Australia
2022	10.1%	9.2%	10.0%	9.3%
2023	9.2%	8.5%	9.1%	8.5%
2024	7.0%	6.8%	7.1%	8.2%
2025	7.2%	5.5%	5.8%	5.3%
2026	5.5%	5.5%	5.5%	4.2%
2027	5.5%	5.5%	5.5%	4.2%
Total	**44.5%**	**45.6%**	**43.0%**	**39.5%**



Zoom into:

The tension between cost and price in the construction industry

All the indicators are pointing to a slowdown in construction activity during 2023. In this feature we highlight why conditions this year are different and why construction prices are unlikely to fall as demand slows down.

The relationship between prices and costs

This doesn't mean that the relationship between prices and costs won't change. Indeed, our forecasts for inflation in 2023 assumes that contractors and their supply chains will continue to absorb an element of continuing cost pressure – however, this is unlikely to be at the same level as 2022 or previous years. With construction margins still wafer thin, at around 1.2% for the Top 10 according to ASIC data, principal contractors are clearly concerned about the impact of a downturn and what this might do for competitive conditions.

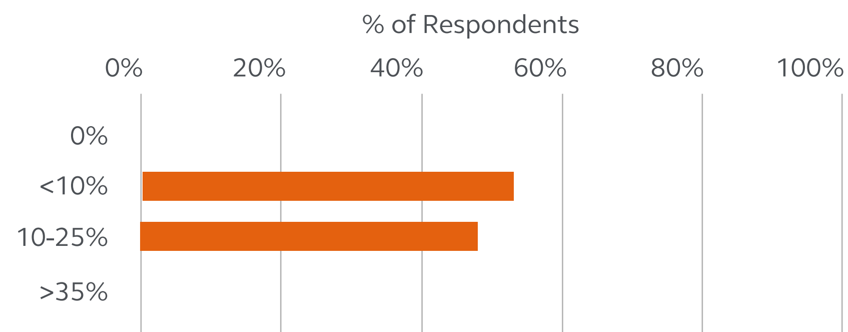
Construction price increases have historically kept pace with general inflation. Prices stagnated during the worst of the pandemic and construction inflation only really kicked-in during 2021. Considering the significant increases of last year, with prices rising on average by about 12.5%, the construction sector is now outstripping CPI. On this basis alone, a reversal in the construction market would be welcome.

Clearly, not all sectors are equally affected. Housebuilders have, up until relatively recently, been able to readily absorb construction cost inflation because house prices were moving even faster. Similarly, on many infrastructure projects contracted on a Target Cost basis, employers have shared some of the exposure through pain/gain mechanisms.

By contrast, principal contractors in the building sector, focused mostly on commercial, industrial, and public sector schemes, will have seen the most pressure exerted, which has been compounded by an increasingly busy bidding environment. Inflationary pressure has largely been absorbed within the supply chain and over the past 18 months, with 43% of respondents confirming in our recent Construction Market Sentiment Survey that they had absorbed between 10% and 25% cost escalation on projects last year (see chart below).

We asked respondents how much cost escalation had they absorbed on their projects once all contractual mitigations had been implemented (i.e. scope adjustments, contract variations, extensions of time etc).

Responses indicate that builders have absorbed significant levels of escalation in some cases (and as much as 25%).



We are now seeing an increasing divergence in the way in which inflation risks are managed by contractors and their supply chains:

- General contractors in the building sector subcontract most work and as a result, their exposure is linked to arbitrage, risk management and change management. Markets have been extremely challenging over the past 18 months because it has been so difficult to secure fixed prices. One of the drivers for sky-high inflation will have been increased allowances for unpriced risk. In a market where material suppliers and labour have been able to trade on scarcity to push for higher prices, competitive pressure on margins and management costs has been high and these have been trimmed back in competitive bidding. Profits for 2023 and beyond will be hard won.
- In client-led joint ventures, where client and contractor partner with each other and have an equal share in both input costs and outturn revenues, the benefits of open book contracting and aligned incentives have come to the foreground. Teams have had to work together to redesign schemes, reprocure packages, adjust the financial model and/or secure additional funding to deal with cost pressures. The subcontract supply chain will have also come under pressure to find solutions to enable projects to move forward. Working as a JV has been very challenging, but they have functioned well because of a high level of transparency. This has created trust and supports informed, optimal decision-making.
- Vertically integrated contractors (or builder/developers) have a very different model, relying on the inhouse resourcing of many core construction elements such as structure, envelope and MEP. The high level of control and visibility that these contractors have over their cost base has enabled them to compete very effectively during the past couple of years when markets have been relatively unstable. Delivery using inhouse resources also means that some procurement and overhead/margin costs can be absorbed. However, the integrated model concentrates a lot of single point of failure risk onto the main contractor, and if inflation risks aren't fully hedged, projects could become challenging to deliver. Integrated contractors have expanded their markets very successfully over the past two to three years and their performance in the downturn will be a real test of the resilience of the business model.
- Infrastructure contractors also have a lot of inhouse resource, particularly directly employed operatives, and common commercial models provide a greater level of protection for contractor teams, albeit often at the expense of the client's budget. Early Contractor Involvement (ECI) for example involves a trade-off between value-adding input into design and planning on the one-side, and competitive pressure on the other. In a highly inflationary market, the supply chain is likely to have secured the better part of the deal through inflation protection, which is reflected in our infrastructure TPI for 2023, which is 40% higher than for the buildings sector. Looking forward, we are seeing further moves to manage risk, either through the adoption of fluctuations, which is more common in infrastructure, or through 'carve-outs' of inflation risk from elements of the Target Price.

Regardless of the model adopted, inflation is being absorbed somewhere in the chain – all the way from self-employed labour to the client in a JV or through pain/gain share mechanisms. As markets get tighter in 2023 and beyond, the level of absorption will increase and alongside that, so could the commercial stress.

Given the growing volume of work in the market, contractors (particularly those that operate in the vertical building sector) are being far more selective in the projects that they are bidding to try and improve their financial positions. This is leading to some clients, with poor reputations for relations with contractors, struggling to find contractors to bid for their projects. Given increasing certainty around the government project pipeline in New South Wales and Victoria there is now a movement of resources underway from these markets to Queensland and the growing energy transition sector, as these markets are perceived to be more stable and offer better returns.

This analysis highlights that construction markets are increasingly varied, meaning that commercial pressures are applied in very different ways. With energy and labour costs still likely to be significant cost drivers in 2023, such variation in practice and procurement means that clients and their advisors will need to think even more carefully about how their bid strategy will share the cost and price tension across the wider project team.

Spotlight on:

Is a manufacturing-led approach the solution to construction's productivity woes?

The modular and prefabrication markets in Australia are growing rapidly and are expected to reach $7.2 billion by 2025. Manufacturing-led solutions offer several benefits over traditional construction methods. So, what are the barriers to adoption and how do we raise the bar?

Carrying on is no longer an option

The construction industry plays a vital role in driving economic growth and development in Australia. However, the sector faces numerous challenges including labour shortages, cost overruns and project delays. But none of this is new.

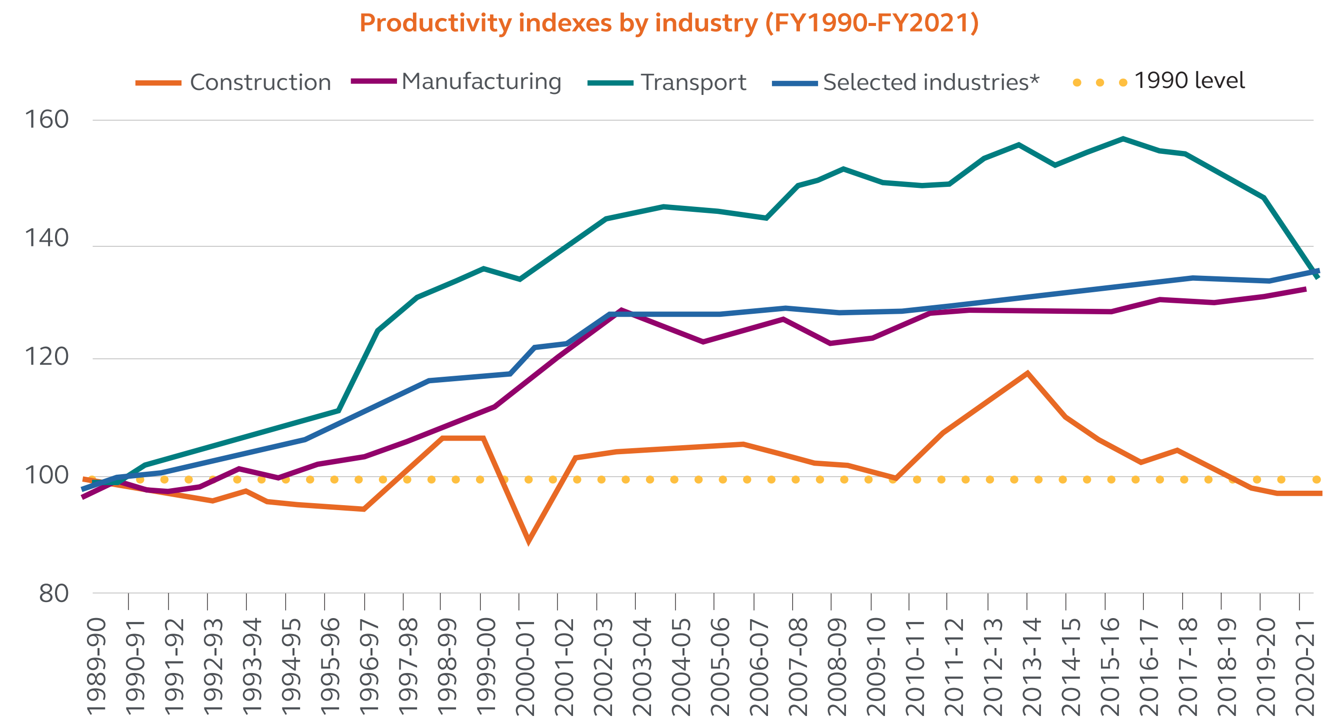
According to the Australian Constructors Association 2022 report – *Disrupt or Die* – almost every industry has advanced while Australia's construction industry has gone backwards. Construction productivity is lower today than it was in 1990. This is being compounded as the industry is also seen as being out of touch with the next generation of workers who, broadly speaking, no longer view it as an industry of choice.

In 2016, a UK report entitled *Modernise or Die*, laid bare the underlying issues of a construction industry that was in dire need of reform. Declining resource resiliency, an increasingly inelastic labour pool and a structural decline in competence and capability - as well as skills and learning - had all been exacerbated by the very delivery models that the industry had moved towards to be flexible.

All this combined had created a self-fulfilling prophecy of declining productivity. Does any of this sound familiar?

To address these issues, the adoption of modular construction and prefabrication methods is starting to get significant attention and there has been a promising rise in the adoption of these solutions in recent years. This shift can be attributed to several factors, including advancements in technology, increased demand for sustainable and energy-efficient buildings, the need to overcome traditional construction limitations and rising construction costs.

Notable projects across the country exemplify the success of modular construction and prefabrication. The La Trobe Tower in Melbourne and the Clement Canopy in Brisbane are excellent examples of high-rise buildings constructed using prefabricated components. These projects demonstrate the versatility and efficiency of modular construction, showcasing the potential to accelerate construction timelines and reduce costs.



Source: Australian Constructors Association

Barriers to widespread adoption

Despite the advantages, the widespread adoption of modular construction and prefabrication in Australia faces several barriers. These include:

1. **Industry perception:** The construction industry is known for its resistance to change and traditional practices. The perception that offsite construction is inferior or lacks quality often deters industry stakeholders from embracing modular methods.
2. **Skilled labour shortages:** The shortage of skilled labour in the construction industry hinders the adoption of modular construction. The existing workforce may lack the necessary skills to operate and manage the complexities of offsite manufacturing processes.
3. **Supply chain challenges:** Establishing a robust and reliable supply chain for prefabricated components requires coordination and collaboration among manufacturers, suppliers and contractors. Currently, the fragmented nature of the industry poses challenges in streamlining the supply chain effectively.
4. **Regulatory and planning frameworks:** Existing building codes and regulations were primarily developed for conventional construction methods, creating obstacles for the approval and adoption of modular construction. Overcoming these hurdles requires collaboration between industry stakeholders and regulatory bodies to update and adapt the frameworks.

Is modular construction more cost effective?

Modular construction has the potential to be cost-effective compared to traditional construction methods, although the cost dynamics can vary depending on several factors. In addition, clients often misunderstand that potential savings and cost efficiencies are rarely realised on the first project or investment. Here are some of the key considerations regarding the cost of modular construction:

1. **Economies of scale:** Modular construction often involves the repetitive production of standardised components in a factory setting. This allows for economies of scale, as the same components can be mass-produced, leading to cost savings in materials and labour.
2. **Reduced construction time:** One of the primary advantages of modular construction is the ability to simultaneously manufacture components offsite while site preparation occurs. This can significantly reduce overall construction time, leading to cost savings in labour and financing. Shorter construction periods also reduce the risk of cost overruns.
3. **Efficient resource utilisation:** Factory-controlled production in modular construction enables better resource management and reduces waste. Materials can be precisely measured and cut, minimising the amount of unused or discarded materials. Moreover, the controlled environment minimises the impact of weather-related delays, further reducing costs.

4. **Labour efficiency:** Modular construction relies heavily on assembly line-like processes, where skilled workers specialise in specific tasks. This specialisation improves labour efficiency, reducing labour costs compared to onsite construction, where various trades may be involved simultaneously.
5. **Transportation and site installation:** While transportation costs are involved in moving modular components from the factory to the construction site, these expenses are often offset by the reduced onsite labour requirements and quicker assembly times. However, for remote or inaccessible locations, transportation costs may increase and need to be considered.
6. **Design and engineering:** Modular construction requires early involvement of design and engineering teams to optimise the manufacturing and assembly processes. While this may incur additional design costs upfront, it can lead to long-term savings by minimising changes and rework during construction.

It is important to note that the cost comparison between modular construction and traditional methods can vary depending on the specific project, location, design complexity and the level of customisation required. In some cases, modular construction may have higher upfront costs due to factory setup and design considerations. However, when considering the overall project lifecycle, including factors like reduced construction time, improved quality control and potential for faster return on investment, modular construction can be cost-competitive or even more cost-effective than traditional construction methods.

Solving the construction sector's productivity challenges

Modular construction and prefabrication have the potential to revolutionise the construction industry, addressing the sector's productivity challenges. Here's how:

1. **Enhanced efficiency:** Offsite construction allows for simultaneous activities such as manufacturing components and site preparation, leading to reduced project timelines. The controlled environment of factories enables better quality control, minimising rework and project delays.
2. **Skilled workforce development:** The adoption of modular construction presents an opportunity to upskill the existing workforce and attract new talent. By providing training and education programs that focus on offsite manufacturing techniques, the industry can bridge the skills gap and meet the growing demand for skilled labour.

3. **Improved safety:** Factory-based manufacturing reduces onsite risks associated with weather conditions, working at heights and hazardous environments. By minimising onsite construction activities, modular construction enhances safety standards and reduces the occurrence of accidents.
4. **Sustainable and innovative solutions:** Prefabrication allows for the use of sustainable materials and building practices. Factory-controlled production reduces waste and enables better recycling and reusability of materials.

   Furthermore, modular construction fosters innovation, encouraging the adoption of emerging technologies such as Building Information Modelling (BIM), automation and robotics.

The time for adoption is now

Modular construction and prefabrication hold significant promise for the Australian construction industry. Despite the existing barriers to widespread adoption, the benefits are too substantial to ignore.

Through collaboration between industry stakeholders, policymakers and regulators, these innovative methods can be embraced and integrated into construction practices.

By overcoming the hurdles, Australia can unlock the potential of modular construction, accelerating project timelines, reducing costs and addressing the sector's productivity challenges. The time is ripe for the construction industry to embrace modular construction and prefabrication, ushering in a new era of efficiency, sustainability and innovation.

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