



Turner & Townsend



A CostWeb Report

How much should we allow for escalation 2008-2018?

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Abstract.

Organisations running long term construction projects need to allow for escalation of construction costs. This paper is a guide to potential cost escalation over the next ten years in the major capitals. After a long period of strong construction costs the market has changed, with costs falling. Construction costs follow the main construction cycles and can increase and fall over a ten year period. By making assumptions about the main drivers of construction costs, and the construction cycles between now and 2017 we have produced forecasts of annual escalation.

1 Introduction.

Nobody can foresee the future. We can only take the things that we have observed in the past and try to apply them to the future. But construction cycles give us useful clues to what may happen. First we need to understand how a construction cycle occurs: -

- Builders and developers see an opportunity for a particular type of development, because vacancy rates are low, and rents are increasing. So they rush headlong into building.
- Whilst the demand is strong and good margins can be made more building is undertaken. Speculators enter the market, bidding up the prices. Large profits are made. This we call a boom or an upswing.
- People now think the upswing will last for ever. They rationalise, "It's different this time". At some point the demand becomes saturated. But because projects take a long to complete building still carries on. The market becomes oversupplied.
- Rents and prices of finished product then fall. Projects are cancelled. Developers are left with unsold stock and go bankrupt. The cycle collapses. This we call a bust or a recession.

Construction cycles typically include commercial construction, residential construction, civil and infrastructure, and mining. Cycles of industrial and retail construction tend to be less well defined, and are less reliable indicators of construction costs.

The period between booms may be 5-7 years in the case of housing or up to twenty years in the case of CBD high-rises. These cycles don't usually occur together. Some lead some follow. One region may be booming in one sector another not. When several cycles coincide in a region costs of construction go up because projects compete for a limited supply of labour and building materials.

Construction cycles form the basis of this document. We have tried to predict when they will start and end in each region. We have also looked at what else might drive construction costs including the overseas and local economies. We think that the Global Financial Crisis will end, inflation and interest rates will both increase again, and somewhere in the next ten years the economy will be back to boom-time conditions. At the point construction costs will be increasing strongly again.

But that is all we have done, so **here is the disclaimer**. This paper and its conclusions are only as good as the fool who wrote it so please go easy on him. Unforeseen disasters and developments can quickly undo all of the opinion, speculation and assumption contained herein. However we hope it helps!

2 Construction Cycles.

2.1 Residential Construction

Currently the residential sector is in a cyclical downturn as indicated by housing approvals and commencements. Medium and high density projects are being hampered by lack of finance and poor feasibility. At the high- and luxury- end of the market prices are falling, as the diminished wealth effect of the global financial crisis is being felt. The Government's first home owners grant and boost schemes are helping to stimulate demand for new houses and for lower cost established housing, but not enough yet to push the sector into recovery.

A US-style housing price meltdown seems unlikely. The US massively oversupplied their market for housing. Conversely Australia has a growing housing shortage. Approvals and commencements are indicating that this shortfall will grow in Australia over the next 3 years.

Most of the Australian states last had a residential upturn in 2003-2005. The Sydney boom finished earliest. Based on Sydney's growing dwelling stock deficiency a pick up in residential construction is overdue. New South Wales is forecast to have a shortage of 50,000 homes in 2009 and 64,000 by 2010.

Across Australia the shortage of houses will grow to 100,000 houses by 2012, setting the stage for a residential recovery. As the economy recovers and general confidence improves, house prices will start to increase again. Investors will be attracted by increasing rents and low interest rates and eventually medium-high density residential construction projects will start as credit frees up. During the early years of next decade most states should experience a strong cyclical expansion of residential construction.

Generally residential building cycles can be 5-7 years. There may be two cycles in the period to 2017. Firstly we see a revival in the residential sector from 2011-2012. Experience dictates that this sector is likely to overshoot by 2013, then slowdown from 2013-2015, followed by another recovery to 2107.

2.2 Commercial Construction

In contrast to residential building cycles commercial construction cycles tend to be much longer. For example both Perth and Brisbane were close to the peak of a CBD office building cycle in 2008 with numerous high-rise projects underway.

The strong local economies and high interstate and overseas migration in the run up to 2008 increased the number of white collar jobs, particularly in the minerals sector taking up all available office space. As a result numerous commercial projects were under consideration.

With the Global Financial Crisis and the downturn in minerals investment many of these white collar jobs are no longer required. Many CBD projects have been cancelled or deferred as demand for office space shrinks.

Generally the external shock created by the Global Financial Crisis has stymied CBD investments that would have proceeded in this cycle. The extent to which the completing round of CBD projects will oversupply the market is unclear, however in Perth and Brisbane some moderate oversupply is likely. This is in stark contrast to the 1991-93 downturn when the market overbuilt substantially in most centres and took 15 years to recover.

Growth in the BRICS economies and a recovery in mineral demand from China will help lift commodity prices again by early next decade. A recovery in mining investments is likely, especially in the energy sector, which will boost the demand for office space once more. We may see an early recovery in the commercial sector, with some of the deferred projects proceeding in a relatively orderly fashion from 2011 onwards.

2.3 Civil, Infrastructure and the Stimulus Package

During the nineties and the first half of this decade infrastructure was relatively neglected by state governments. Recently as the Australian economy has grown it has become evident that something needs to be done about congested roads, port bottlenecks, water shortages, and ageing hospitals and schools.

With the Global Financial Crisis government sees infrastructure as a key plank of recovery. All state governments currently have very aggressive capital works budgets with big projects in the pipeline covering roads, tunnels, water, energy, ports and public transport.

In addition the government announced the stimulus package in early 2009 which included investment in school buildings and community housing. These projects are designed to be “shovel-ready”, in order to keep the construction sector active and preserve jobs that might be lost during the downturn in private sector construction.

To date the stimulus package is proving effective in retaining construction jobs, and keeping the sector active with relatively low value work. The government sector will be a key factor in Australia’s recovery.

Much of this work is long term and will continue well into next decade. Up to 2009 construction costs for these projects were a moving target however the downturn provides some opportunity for cost savings.

Back in 2008 state governments had strong revenues. However the downturn has impacted revenues by reducing mining royalties and stamp duties. Whilst government funding may be available for infrastructure projects state governments are now forced to raise money by borrowing or from federal government grants. Potential PPP partners are difficult to secure given the current credit crunch in financial markets. As a result some projects could be pushed back or shelved making this cyclical expansion longer.

2.4 Mining and Energy Construction

Up to 2008 mining construction was putting a strain on construction costs especially in regional areas. Severe trade skills shortages and high wages were attracting tradespersons to the mining areas thus contributing to the overall increase in labour costs in construction.

With the downturn and subsequent shelving of many minerals projects the skills shortage situation is easing, construction costs are flat, and the high wage jobs are harder to get.

Lower commodity prices have put an end to many of the marginal mineral projects which will now be shelved until prospects recover. Waiting in the wings are several huge energy projects in the Liquefied Natural Gas (LNG) Sector. These projects are based on the North-West Shelf, Darwin, and Gladstone in Queensland. Any one of these projects will boost the demand for skilled labour considerably to the extent that construction costs could increase.

Even with the global downturn the prospect that some of these projects will proceed is high, because the prospect for strong export earnings is very good, and the projects tend to lock in 25 year supply agreements before commencing construction. Now that competition from other sectors for construction resources has reduced, LNG construction costs are easing, and the window of opportunity is there for this industry to proceed to construction.

3 How the forecasts were produced.

The forecasts use models developed as part of Turner & Townsend's CostWeb research. The variables used in the model include

- CPI and Interest rates
- Economic growth
- The state of the various construction cycles – commercial, residential, civil and infrastructure, and mining.
- Labour shortages
- The overall level of construction activity anticipated in the economy
- Building material costs

We have a good idea of how much construction costs are increasing at the moment in each region. By considering the variables above we have attempted to show what the likely impact is on construction costs over time.

In making forward predictions for these variables we have taken into account what we know about the various construction cycles and what factors in the local economy are likely to induce a cyclical change. We have included a table of macro-economic assumptions that have assisted us to do this.

One thing is for sure. Construction costs will remain flat during the downturn and increase once recovery is underway and the level of activity picks up. The economy will recover and boom will follow bust as surely as day follows night.

We will update the models and this report as more information comes to hand.

4 Conclusions

4.1 Construction costs have bottomed out.

Construction costs peaked in most regions in the third quarter of 2008. Since then construction costs have fallen up to 10% depending on region. Most construction cost falls have come about as the result of increased competition forcing main contractors and sub-contractors to reduce margins.

Building material costs have not fallen except for those materials exposed to commodity prices, ie structural steel, copper cable, aluminium claddings, petroleum based plastics. A fall in the exchange rate has increased the cost of some imported manufactured items, such as plumbing products, lifts and escalators, tiles, electronics and imported machinery. Wages are still increasing and the enterprise wage negotiation system will prevent wage falls except where sole subcontractors are prepared to work for less.

The government stimulus package, wage increases and building material costs are placing a floor under construction costs. From mid 2009 only modest falls will occur and in most cases flat costs will be the norm until 2010-11. Thereafter construction costs may start to increase, slowly at first. We think that a residential upturn is coming again starting in NSW by 2011-2012 with the potential to push up construction costs.

The mineral sector will recover and the energy sector is poised to take-off. The demand for skilled trades will pick up in these sectors and this will feed through to higher construction costs in the middle of the period.

By 2015-16 another cyclical slowdown could occur as the various cycles run their course. However this is unlikely to have as dramatic an impact as the current downturn.

Over the next ten years construction costs will not increase as quickly as the last ten years. The following chart compares annual construction cost increases over the two periods.

	1980-2008	2008 -2018
Sydney	5.5%	3.3%
Melbourne	5.4%	2.9%
Brisbane	5.7%	3.3%
Perth	5.7%	3.1%
Adelaide	4.6%	3.8%

As can be seen the next ten years promise slower growth in construction costs with most increases coming in the period from 2012.

5 Macro-Economic Assumptions

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Western economies	sub-prime crisis and weak housing	sub-prime crisis and weak housing	sub-prime eases	housing/finance and services improve	housing/finance and services improve	housing boom turns down	housing boom turns down	Commercial improving	steady growth driven by BRICS	steady growth driven by BRICS	steady growth driven by BRICS
BRICS economies	Strong	Cyclical slowdown	Cyclical slowdown	Cyclical slowdown	Recovery	Recovery	strong	strong	strong	strong	strong
CPI assumptions	4.5%	3.0%	2.0%	2.5%	3.0%	2.0%	2.0%	2.5%	3.0%	3.0%	3.0%
Interest Rate assumptions	9.5%	6.5%	5.5%	6.5%	8.5%	7.0%	5.5%	5.0%	6.0%	7.5%	8.5%
Growth assumptions	3.7%	1.9%	2.2%	2.9%	3.1%	3.0%	2.0%	1.8%	3.0%	3.5%	4.0%
Australian \$	strong	weak	weak	strengthening	strengthening	weaker	weaker	strengthening	strengthening	strengthening	strengthening
Population growth	strong	strong	easing	easing	easing	weaker	weaker	increasing	increasing	increasing	easing
Skills shortages	severe	easing	easing	easing	increasing	increasing	easing	easing	increasing	increasing	increasing
Baby boomers			preparing to retire	preparing to retire	preparing to retire	retiring	retiring	retiring	retiring	retiring	retiring
Mining investment	strong	strong	weakening	weakening	weakening	normal	normal	increasing	increasing	strong	flat
State capital works	strong	strong	strong	weakening	weakening	weakening	weakening	normal	normal	normal	increasing
Employment	full	weakening	moderate unemployment	moderate unemployment	close to full	moderate unemployment	moderate unemployment	moderate unemployment	close to full	close to full	close to full
Services, manufacturing, tourism	Damaged by high AU \$	Damaged by falling demand	Damaged by falling demand	improves with weak\$ and increasing demand	improves with weak\$ and increasing demand	improves with weak\$ and increasing demand	easing as \$ increases	easing as \$ increases	easing as \$ increases	easing as \$ increases	easing
Commodity prices	high	weak	weak	weak	increasing	increasing	increasing	increasing	increasing	flat	flat
Building material prices	increasing	falling	bottoming	flat	increasing	increasing	flat	flat	increasing	increasing	increasing

6 Escalation Forecasts

6.1 Brisbane Forecasts

Sector	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
CPI	4.5%	3.0%	2.0%	2.5%	3.0%	2.0%	2.0%	2.5%	3.0%	3.0%	3.0%
Interest Rates	9.5%	6.5%	5.5%	6.5%	8.5%	7.0%	5.5%	5.0%	6.0%	7.5%	8.5%
Growth	3.7%	1.9%	2.2%	2.9%	3.1%	3.0%	2.0%	1.8%	3.0%	3.5%	4.0%
Overall level of construction activity	↔	↓	↓	↔	↗	↗	↔	↔	↗	↗	↗
Commercial construction	↗	↘	↘	↔	↗	↗	↔	↔	↔	↔	↗
Residential construction	↘	↘	↔	↗	↗	↔	↘	↘	↗	↗	↗
Civil, and Infrastructure	↔	↗	↗	↗	↔	↔	↔	↔	↔	↗	↗
Mining	↗	↘	↘	↔	↔	↗	↗	↗	↔	↘	↘
Shortages of skills	↔	↘	↘	↘	↔	↔	↗	↔	↔	↔	↗
Building material costs	↗	↘	↘	↔	↔	↔	↗	↗	↗	↗	↔
Construction cost outlook Jan-Dec	1%	-1%	2%	4%	5%	4%	4%	4%	6%	6%	6%
Index in January (January 2008 =100)	100	101	100	101	105	110	114	119	123	130	138
Annual compound growth rate (suggested long term escalation 10 years)											3%
5 year compound growth rate (suggested escalation 1 Jan 2008 - 1 Jan 2013)											2%

6.2 Brisbane Commentary

2008	At the start of 2008 all construction sectors were strong except residential. High interest rates deterring residential. Building material price increases especially steel and reo during 2008.. Strong exposure to mining causing skills shortages. Government announces record capital expenditure plans. Dollar collapses during late 2008. Sentiment crashes at year end as fallout from the credit crunch deters projects.
2009	Severe repercussions of the credit crisis. Many commercial projects stopped dead. Dollar crashes and imported building materials increase 25%. But commodity prices fall on world markets helping to keep steel and copper down. Contractors' nervousness to secure jobs increases competition and tender rates fall. Easing interest rates. Government stimulus package.
2010	Construction stays below full capacity as credit crisis runs its course, and joblessness rises. Confidence starts to recover slowly. Residential housing is encouraged by low interest rates, and improved affordability. Government capital works projects maintain momentum. Building costs remain down and bids remain very competitive.
2011	Residential construction cycle takes off as jobs outlook finally stabilises. Financial markets start to ease and larger residential project become more attractive to developers.
2012	Full on residential boom creating cost increases in labour rates. Commercial may experience a second wave as the 2008-9 expansion was killed of by the credit crisis of 2008-9.
2013	Residential cycle peaking and starting to fall away as affordability overshoots again. Pick up in commodity prices leading to more investment in mining and mothballed projects are re-started. Chinese demand recovering. Energy projects underway
2014	Slowdown in the residential sector being offset by a recovery in the mining and engineering as China boom picks up steam again. Tourism and education doing well. Rise of Chinese, Indian and baby boomer tourist phenomenon. Mining and energy keeps some momentum
2015	Mining and Commercial construction are doing well again and expanding. Residential is now dragging the domestic economy down.
2016	Building material costs are increasing again as overseas demand strengthens. Retirement of the baby boomers is causing skills shortages.
2017	Residential gathering strength. Commercial and mining will remain generally flat but strong commodity demand pushing up building material costs again
2018	Residential strong. Commercial and mining will remain generally flat but strong commodity demand pushing up building material costs again

6.3 Sydney

Sector	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
CPI	4.5%	3.0%	2.0%	2.5%	3.0%	2.0%	2.0%	2.5%	3.0%	3.0%	3.0%
Interest Rates	9.5%	6.5%	5.5%	6.5%	8.5%	7.0%	5.5%	5.0%	6.0%	7.5%	8.5%
Growth	3.7%	1.9%	2.2%	2.9%	3.1%	3.0%	2.0%	1.8%	3.0%	3.5%	4.0%
Overall level of construction activity	↘	↓	↔	↔	↗	↗	↔	↓	↗	↗	↗
Commercial construction	↔	↓	↔	↔	↔	↗	↗	↗	↓	↓	↔
Residential construction	↓	↓	↗	↗	↗	↘	↔	↔	↗	↗	↗
Civil, and Infrastructure	↔	↔	↗	↗	↗	↘	↔	↔	↔	↔	↔
Mining	↔	↘	↘	↔	↔	↔	↔	↔	↔	↔	↔
Shortages of skills	↔	↘	↘	↔	↔	↔	↔	↔	↗	↗	↔
Building material costs	↗	↘	↘	↔	↗	↗	↔	↔	↗	↗	↔
Construction cost outlook Jan-Dec	1%	-1%	2%	4%	5%	4%	4%	4%	6%	6%	6%
Index in January (January 2008 =100)	100	101	100	101	105	110	114	119	123	130	138
Annual compound growth rate (suggested long term escalation 10 years)											3%
5 year compound growth rate (suggested escalation 1 Jan 2008 - 1 Jan 2013)											2%

6.4 Sydney Commentary

2008	High AU\$ and banking crisis still hurting local economy. Interest rates and low affordability preventing residential building. Reinforcement and steel increases push costs up during the year but fall again at year end. Credit crunch damaging project finance. Start of aggressive state capital works program.
2009	Severe repercussions of the credit crisis. Many commercial projects stopped dead. Confidence and sentiment take a severe blow at the start of the year. Construction costs easing mostly through squeezed contractor margins. Low interest rates and first home owners boost giving new residential a kick-start but it is still early days. Government stimulus package - Building The Education Revolution- providing a much needed boost to private builders.
2010	Confidence improves. NSW no longer basket case state. Momentum in residential sector picking up as affordability improves and confidence recovers. Financial and services sectors showing signs of recovery.
2011	Residential cycle strengthening as stimulus work tapers off. Medium and high density projects under consideration. Tradeables -banking, finance, services, education and tourism looking positive. Hotels, universities some high rise under consideration as economy improves.
2012	Commercial and Residential in synch. Tradeables based economy improving. Inflation increasing and some early signs of overheating.
2013	Housing affordability worsens and residential weakens. Major capital works finishing, but services sector very strong.
2014	Cyclical slowdown in residential, Some commercial underway. Retail sector strong as the result of built up home equity. Services and tourism strong. Spill over of HQ functions from minerals sector.
2015	Modest cyclical slowdown in all sectors. Unemployment increases. Retirements increase as baby boomers savings recover.
2016	New residential cycle starting spurred by low interest rates. Skills shortages hangover from increased retirements.
2017	Residential cycle picking up strongly. Skills shortages worsen. Building material cost inflation starting again.
2018	Residential booming. Skills shortages worsen. Building material cost inflation starting again.

6.5 Melbourne

Sector	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
CPI	4.5%	3.0%	2.0%	2.5%	3.0%	2.0%	2.0%	2.5%	3.0%	3.0%	3.0%
Interest Rates	9.5%	6.5%	5.5%	6.5%	8.5%	7.0%	5.5%	5.0%	6.0%	7.5%	8.5%
Growth	3.7%	1.9%	2.2%	2.9%	3.1%	3.0%	2.0%	1.8%	3.0%	3.5%	4.0%
Overall level of construction activity	↔	↔	↑	↑	↑	↑	↔	↓	↗	↑	↑
Commercial construction	↔	↔	↔	↗	↗	↗	↗	↑	↓	↓	↔
Residential construction	↔	↔	↔	↗	↑	↑	↘	↓	↗	↑	↑
Civil, and Infrastructure	↑	↑	↑	↔	↔	↘	↔	↗	↑	↑	↔
Mining	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Shortages of skills	↔	↔	↔	↔	↔	↑	↔	↔	↑	↑	↔
Building material costs	↑	↔	↔	↔	↑	↑	↔	↔	↑	↑	↔
Construction cost outlook Jan-Dec	-4%	-1%	3%	4%	6%	6%	2%	3%	5%	6%	6%
Index in January (January 2008 =100)	100	96	95	98	101	108	114	116	119	125	133
Annual compound growth rate (suggested long term escalation 10 years)											3%
5 year compound growth rate (suggested escalation 1 Jan 2008 - 1 Jan 2013)											1.5%

6.6 Melbourne Commentary

2008	Most sectors moderate to strong. High Aussie \$ and banking crisis still hurting local economy. Little exposure to mining boom, although economy seems to be coping nicely. Interest rates and low affordability preventing residential. Reinforcement, concrete and steel increases nudge costs up. Start of state capital works program. Costs escalate steadily until July then Global Financial Crisis brings costs back down sharply.
2009	Credit crisis fallout continues. Low inflation and low interest rates. Government stimulus program keeping some momentum. First home owners boost scheme and low interest rates kick-starting residential but it is still early days. Lack of finance is holding back commercial development but Melbourne is riding out the GFC better than elsewhere.
2010	Unemployment caused by underinvestment in manufacturing is worsening and having a detrimental effect on confidence. Momentum in residential sector picking up slowly as affordability improves and interest rates stay low. Financial and services sectors showing signs of recovery.
2011	Recovering from the Global Financial crisis and business investment is starting to improve. Residential recovery underway with investors back in the market
2012	Residential cycle now strong. Tradeables -banking, finance, services, education and tourism look positive. CBD offices, hotels, retail projects under consideration.
2013	Housing affordability worsens and residential weakens. Major capital works programs finishing.
2014	Cyclical slowdown in residential, civil and infrastructure construction. Some commercial still underway. Unemployment increasing. Construction costs ease.
2015	Cyclical slowdown in all sectors. Unemployment increases. Baby boomer retirements increase.
2016	New residential cycle starting spurred by low interest rates. Skills shortages caused by excessive retirements.
2017	Residential cycle picking up strongly. Skills shortages worsen. Building materials cost inflation again as overseas commodities demand picks up.
2018	Residential sector strong. Skills shortages worsen as population ages. Manufacturing, retail and tourism buoyant

6.7 Perth

Sector	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
CPI	4.5%	3.0%	2.0%	2.5%	3.0%	2.0%	2.0%	2.5%	3.0%	3.0%	3.0%
Interest Rates	9.5%	6.5%	5.5%	6.5%	8.5%	7.0%	5.5%	5.0%	6.0%	7.5%	8.5%
Growth	3.7%	1.9%	2.2%	2.9%	3.1%	3.0%	2.0%	1.8%	3.0%	3.5%	4.0%
Overall level of construction activity	↑	↓	↓	↔	↑	↑	↑	↔	↔	↔	↑
Commercial construction	↑	↘	↘	↓	↓	↔	↔	↗	↗	↔	↔
Residential construction	↓	↓	↓	↔	↔	↗	↑	↘	↓	↔	↗
Civil, and Infrastructure	↑	↔	↑	↑	↑	↔	↔	↔	↔	↗	↗
Mining	↔	↘	↘	↗	↗	↗	↑	↑	↑	↔	↔
Shortages of skills	↑	↔	↔	↔	↗	↗	↗	↗	↗	↗	↗
Building material costs	↑	↔	↑	↔	↗	↗	↔	↔	↗	↗	↗
Construction cost outlook Jan-Dec	0%	-3%	0%	3%	5%	6%	7%	5%	5%	5%	3%
Index in January (January 2008 =100)	100	100	97	97	99	105	111	119	124	130	136
Annual compound growth rate (suggested long term escalation 10 years)											3%
5 year compound growth rate (suggested escalation 1 Jan 2008 - 1 Jan 2013)											1%

6.8 Perth Commentary

2008	Booming minerals based economy. Strong commercial CBD projects based on low vacancy. Severe skills shortages. Strong capital works budget. Housing severely unaffordable and residential construction collapsed. Energy shortages. High rate of increase of construction costs comes to a halt by year end.
2009	Severe repercussions of the credit crisis with many prospective minerals projects shelved as finance dries up and commodity prices plummet. LNG and energy remain promising but long term. Several commercial projects stopped dead, although a number of CBD developments still continuing with risk of oversupplying the market. Construction costs now falling as competition to win work comes back. Housing severely unaffordable and a downwards correction is evident with negative consequences for sentiment.
2010	Commercial office supply coming on-stream, but oversupply is discouraging further investment. House price correction continuing despite low interest rates, and delaying recovery. Infrastructure still strong. Some large scale LNG projects progressing to execution. These have the potential to create localised skills shortages. Finance improving and encouraging demand from China providing some encouragement to minerals. Construction costs still drifting down.
2011	Resource sector still simmering buoyed on by improving commodity prices but not a boom. Huge LNG projects offsetting a slowdown in infrastructure and stimulus expenditure.
2012	Start of residential upswing, later than other states. Mineral investment is expanding again as previously shelved projects are resurrected by improving commodity prices and easier access to finance. Trade skills shortages are worsening as residential and mineral construction both quite strong, providing an up tick to construction costs.
2013	Residential strong. Infrastructure and mining starting to weaken as investment falls and projects complete.
2014	Residential peaking and becoming unaffordable again. Mining investment has now become "business as normal".
2015	Residential in cyclical recession. Commercial has now absorbed previous oversupply and some projects are proceeding. Mining strong and providing good royalties to the state government which is being reinvested as infrastructure.
2016	Modest slowdown across all sectors. Baby boomers retiring as their savings recover, leading to some skill shortages in engineering, management and trade skills.
2017	Severe skills shortages from retiring baby boomers. Migrant program strong. Mining buoyant but not booming. Early stirrings of another residential cycle.
2018	Residential sector recovering. Mining buoyant but not booming

6.9 Adelaide

Sector	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
CPI	4.5%	3.0%	2.0%	2.5%	3.0%	2.0%	2.0%	2.5%	3.0%	3.0%	3.0%
Interest Rates	9.5%	6.5%	5.5%	6.5%	8.5%	7.0%	5.5%	5.0%	6.0%	7.5%	8.5%
Growth	3.7%	1.9%	2.2%	2.9%	3.1%	3.0%	2.0%	1.8%	3.0%	3.5%	4.0%
Overall level of construction activity	↑	↑	↑	↑	↑	↑	↔	↓	↓	↑	↑
Commercial construction	↔	↔	↔	↔	↔	↗	↗	↘	↔	↔	↔
Residential construction	↗	↔	↔	↗	↗	↑	↘	↘	↔	↗	↑
Civil, and Infrastructure	↔	↔	↗	↗	↔	↔	↔	↔	↔	↔	↗
Mining	↔	↔	↗	↗	↗	↗	↑	↑	↔	↔	↘
Shortages of skills	↔	↔	↔	↔	↑	↑	↑	↔	↔	↔	↗
Building material costs	↑	↔	↔	↔	↔	↔	↔	↔	↑	↑	↔
Construction cost outlook Jan-Dec	-1%	3%	4%	5%	6%	6%	5%	3%	4%	5%	4%
Index in January (January 2008 =100)	100	99	102	106	110	116	123	130	134	139	145
Annual compound growth rate (suggested long term escalation 10 years)											4%
5 year compound growth rate (suggested escalation 1 Jan 2008 - 1 Jan 2013)											3%

6.10 Adelaide Commentary

2008	Residential strengthening based on relative affordability and early pickup in mining, defence, and education expenditure. Exploration phase of minerals boom. Global Financial Crisis impact less severe than other mineral states but some impact on manufacturing. Construction costs end up flat for the year.
2009	General slowdown from GFC but office vacancy rates still falling with little risk of oversupplying the market. Residential performing better than elsewhere. Government stimulus keeping construction relatively buoyant. Drought impact on local economy.
2010	Mining exploration phase moving to investment phase, but lack of finance is still a deterrent. Government stimulus package effective at retaining construction work. Early signs of a residential upswing.
2011	Mining exploration phase moving to investment phase with some large projects moving to construction. Naval frigates and Olympic dam are key to recovery. Rebound in investment adding to non-residential construction. Residential improving with low interest rates.
2012	Adelaide improving in all sectors. Skills shortages worsening. Major projects mopping up skills. Demand for offices and accommodation increasing.
2013	All sectors quite strong. Major projects increasing the demand for skills across the board. Residential and commercial continuing to strengthen in line with major projects.
2014	Commercial sectors now in cyclical slowdown, causing a weakening of construction costs. However mining is proving to be resilient, keeping a floor under house prices and keeping the demand for residential strong
2015	Residential cycle likely to have run its course. Mining, education and government expenditure steady
2016	Residential cycle likely to have run its course. Mining, education and government expenditure steady
2017	Skills shortages from retiring baby boomers. Minerals projects investment running out of steam.
2018	Skills shortages from retiring baby boomers. Minerals projects investment winding down as projects move to operational phase. Another residential cycle underway.