



Briefing #10:  
**Surfing the  
Housing Pipeline**  
(or, measuring the  
demand-supply gap)

*Prepared by Tim Woods  
of IndustryEdge:  
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*“Timber supply may be the headline act – it’s the largest, widest spread and most observable component of the building process, but it only takes a couple of small items in short supply to slow up an entire build.”*

# Surfing the housing pipeline

(or, measuring the demand-supply gap)

From Tim Woods at [IndustryEdge](#)

Having recently outlined the bursting pipeline of housing work in the supply chain, we have been asked more than once – when will it end? That’s a fair question, but one that sees us duck the head a little because the truth is: we don’t rightly know.

It may be lucky there are few barbecues right now, because we suspect that like us, fabricators and everyone else in the housing supply chain would get pretty weary of being told what we have to do to fix the housing ‘problem’.

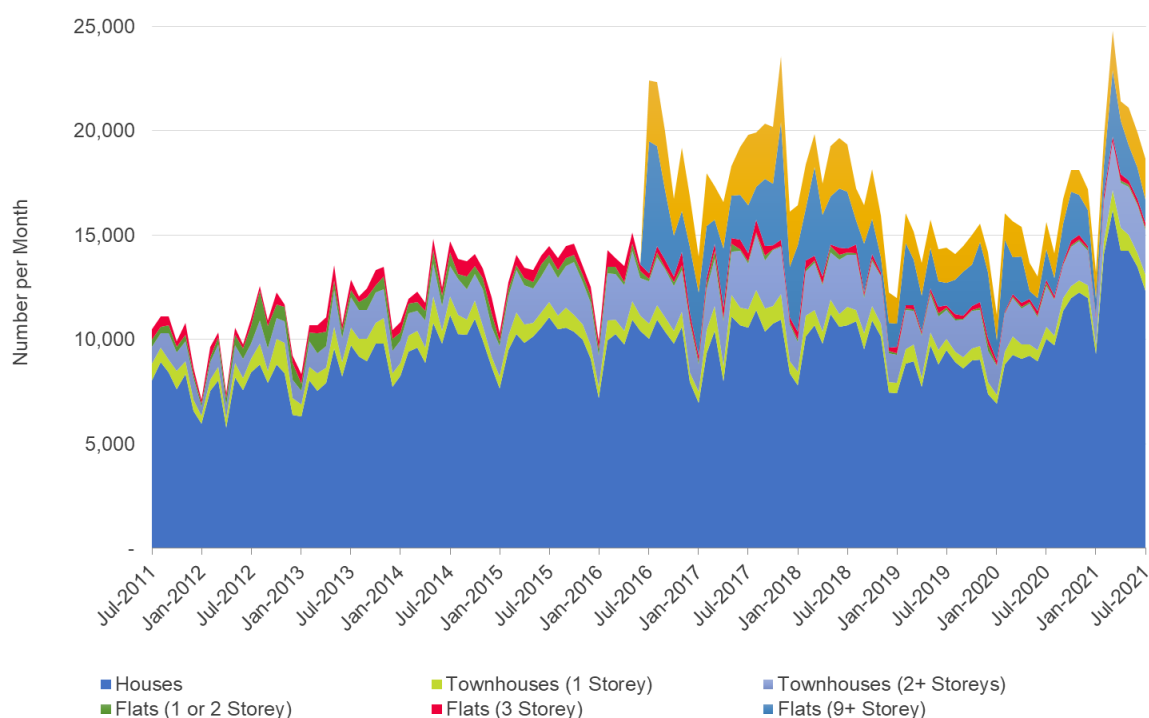
When we say, ‘well, it’s a bit complex, and I don’t have all the answers’, the incredibly simple solutions offered up by the favoured uncles and the always helpful younger siblings would all be wearing a bit thin by now.

So, no blinding solutions and insights are offered up here, but perhaps another steak for when the barbecues do return.

## Desperately seeking a quiet life

In July, Australia’s total monthly dwelling approvals fell for the fourth successive month, but at 18,651 dwellings, approvals were still up a whopping 19.3% compared with July 2020 and more than 29% higher than in July 2019. Look at the chart below and we can see that in historic terms, although 2020 was a trough, it was no disaster and 2019 was actually worse. We can also see current approvals are still toward the all-time peak achieved earlier this year.

**Australian Dwelling Approvals by Type: Jul '11 – Jul '21 (Number)**



Source: ABS, derived & IndustryEdge

Declining monthly dwelling approvals would, in other situations, be cause for concern, but softening approvals barely rate a mention right now.

In short, the reason no one is anxious about the monthly declines is annual approvals are near record levels and hit 223,069 dwellings year-ended July. It looks like approvals will peak year-ended August at about 225,000 dwellings.

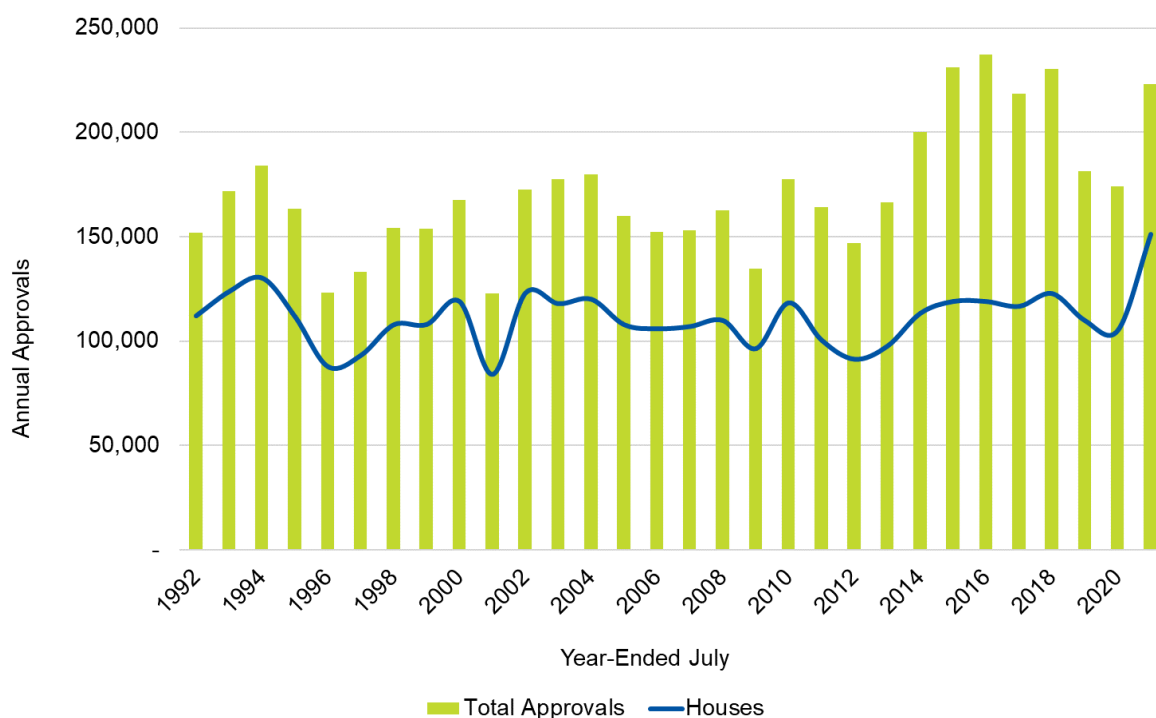
The record for annual approvals was the year-ended August 2016, when they hit 240,624. We will not reach that level this boom.

But back then, approvals of Houses had been growing steadily for about two years and peaked at just over 120,000. Let’s say that the share of the 2016 boom held by Houses was ‘joyously manageable’.

But fast-forward five years and the fastest ever rise in approvals is different in a lot of ways. The main difference is that while total approvals are below the record, the year-ended July saw approvals of houses at a massive all-time high of 151,151 separate approvals!

This is just less than 30,000 more houses approved over the last year than at any other time in history (even before we add in their close friends, the townhouses).

**Annualised Dwelling Approvals: Houses v Total: Jul '92 – Jul '21 (Number)**



Source: ABS, derived & IndustryEdge

So, as we discussed a couple of months ago, demand is so strong, the supply chain just doesn’t have enough materials, sufficient labour, or even an adequate supply of equipment to get the job done in normal timeframes.

It is a strange world when we wish there was less work in front of us!

The good news is that the softening in approvals will start to see some pressure come off relatively soon. But let’s not get ahead of ourselves, that timeframe is probably still a year away!



## How much wood can a... house take to build?

The supply chain that builds houses is one of the most significant elements of the Australian economy. Lots of businesses and jobs and money flowing from one person to the next. Housing is the economic lifeblood of the outer suburbs in particular.

But more than that, houses themselves bind us together, representing our desires, hopes and dreams. Housing is the language of modern prosperity and aspiration, and its seductive story has us so engrossed, the entire nation are experts. Just ask them – and it doesn't have to be at a barbecue either.

Who among us hasn't had the well-meaning but deeply clueless tell us about the timber supply 'problem' and offer up the obvious 'solutions'? Most of the so-called solutions are about as bright as dragging glaciers from Antarctica in a drought, but hey, what would experts like the nation's fabricators know?

As we have outlined in recent months, supply is not the problem right now: its demand (see table – p.2) that presents the challenges.

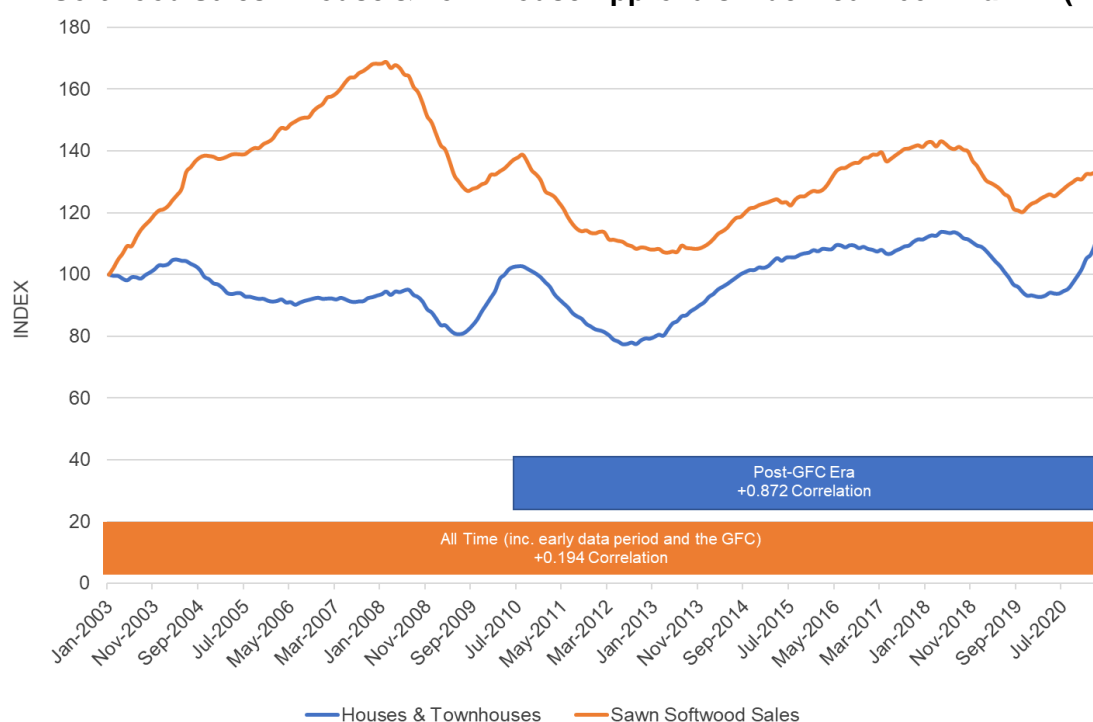
What is an issue, is predicting – or trying to understand, anyway – how much wood will be required to build-out this significant volume of houses.

In the world of supply chain analysis for the forestry and wood products industry, the Holy Grail of information is how much wood is required to build the average house. There is excellent work under way at FWPA on this topic, but meantime, we can get close to an answer.

At the outset, we need to be clear this is a short and simplified description of a supply-chain model, and we have prepared this in a way that does not undermine our intellectual property or our still-in-development main housing forecast model, which is more detailed. This simple model includes assumptions, which we have listed at the end of this analysis for those interested.

In July, we described the close correlation between Australia's approvals of Houses & Townhouses on the one hand and Australian produced Sawn Softwood Sales on the other hand. This is the chart, and it shows nicely the tight correlation between the two, post-GFC.

### Sawn Softwood Sales v House & Townhouse Approvals Index: Jan '03 – Mar '21 (INDEX)



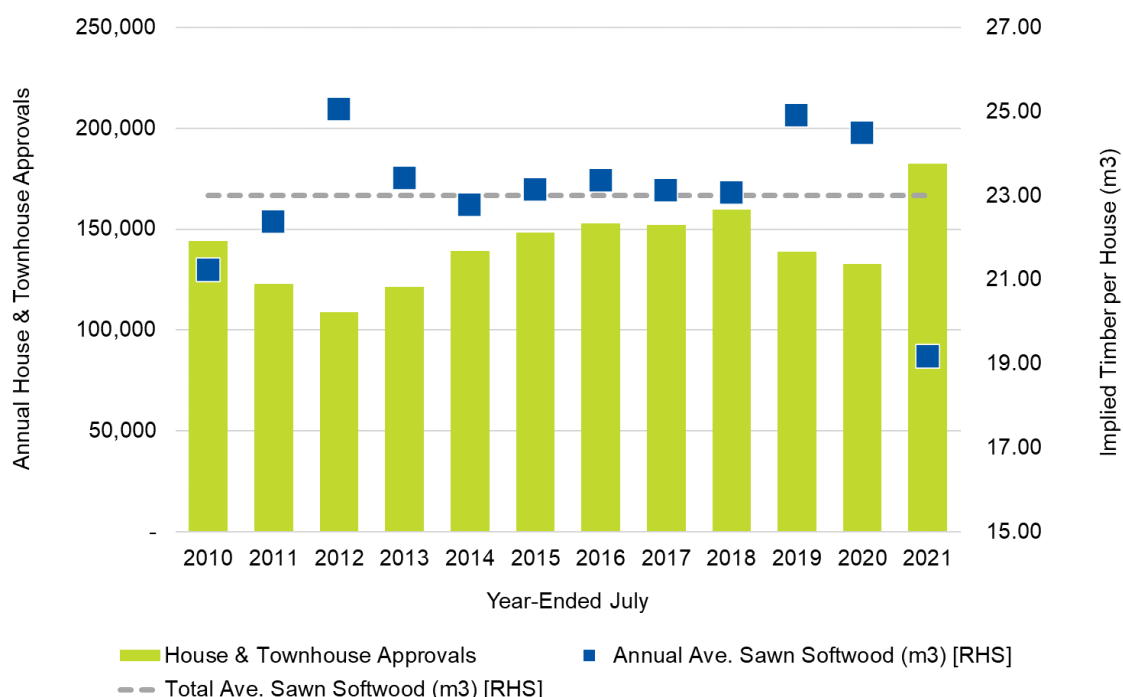
Source: FWPA, ABS, derived and IndustryEdge

So, we know that even if not all sawn softwood is used in houses and townhouses, a lot is, and there is a close relationship. That is, when houses and townhouses are approved, the Australian economy consumes a fairly consistent amount of sawn softwood, even if not only in those dwellings.

Adding in imports of sawn softwood – nearly all of which are for structural purposes and mainly framing – provides a ‘total volume’ of consumed wood.

So, in this case, we measured the relationship between house and townhouse approvals and total sawn softwood consumption. We find that for the period 2010 to 2021, the average amount of sawn softwood consumed per house and townhouse approval is 23 m<sup>3</sup>. Sure, there are lots of qualifications on this (it’s not all structural and it is not all used in housing and so on), but it’s a useful starting point, as we see below.

**House & Townhouse Approvals and Annual Average Sawn Softwood Use: YE Jul '10 – YE Jul '21**



Source: FWPA, ABS, derived and IndustryEdge

Note here that year-ended July 2021, annual approvals of houses and townhouses combined was an unheard of 182,414 dwellings.

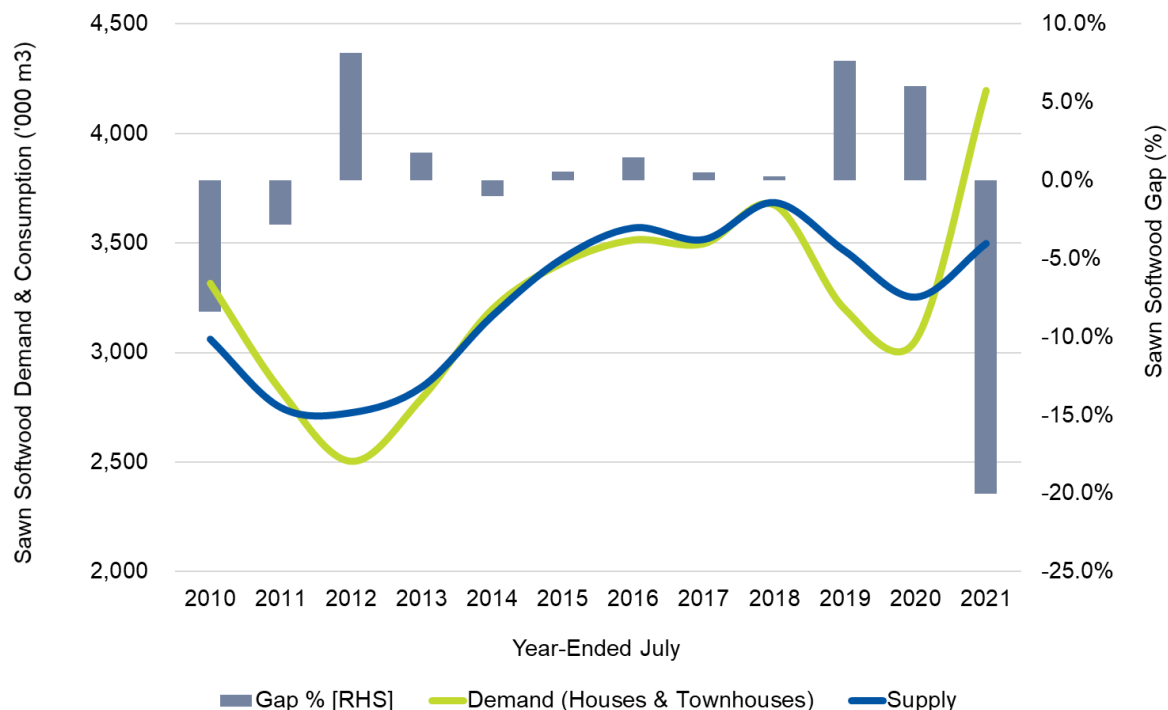
What the chart shows is that the average annual timber supply (the blue squares) is typically right on or very close to the number of house and townhouse approvals. When the blue squares are above the long-term average line (grey), there is nominal over supply. Below the grey line and it shows nominal under-supply.

It is no surprise to see that the average supply over the year-ended July 2021 was a little over 19 m<sup>3</sup> per house and townhouse approval.

So, for each approval, the nominal under-supply is around 4 m<sup>3</sup> of sawn softwood for the most recent year.

What does that look like? Again, nominally, and using this simple approach, the gap between demand and supply for the year-ended July 2021 is right on 20% of total supply.

## Sawn Softwood Demand, Supply &amp; Implied Gap: YE Jul '11 – YE Jul '21 ('000 m3)



Source: FWPA, ABS, derived and IndustryEdge

In reality of course, the gap is less than 20% of supply.

A couple of reasons it is less are that all these approvals are built in the same timeframe, with no overhang. The model also assumes there is no inventory at the start or end of the period (we know a year ago there was some and we can be pretty sure right now there isn't much at all!). There are other constraints, some of which are detailed in the assumptions at the end of this analysis.

### What does this tell us?

As we get closer to a period when the supply chain can draw breath and consider the genuine future, not just tomorrow and the next day, this analysis might play into our thinking.

Every time a house or townhouse is approved, the Australian economy will consume 23 m<sup>3</sup> of sawn softwood. As we have discussed previously, local supply is capacity constrained at around 3.2 million m<sup>3</sup> per annum, or using this analysis, equivalent to about 139,000 house and townhouse approvals. The rest must be supplied by imports.

At a headline level, when annual approvals of houses and townhouses are at that level, the market for sawn softwood will be tighter, as a minimum.

How long before annualised approvals of houses and townhouses fall back to the 139,000 mark? Well, we don't know, but certainly more than a year. After all, in July 2020 – before this incredible boom – annualised approvals were at 132,839.

It might be that the tight timber market will not dip into the more comfortable supply zone until some point in 2023. Unless there is another round of rampant fiscal stimulus that is, or if the hardware and other supplies that are under pressure cause significantly more delays.

Timber supply may be the headline act – it's the largest, widest spread and most observable component of the building process, but it only takes a couple of small items in short supply to slow up an entire build.

## Getting closer to a forecast of future wood demand

For those interested in these things, these approval and consumption data points are among the very best building blocks in supplying forecasts of future demand for sawn timber – especially over the period up to about a year ahead. That is a matter on which we expect to have more to discuss in coming months.

There are those who will argue more certainty is required than we have provided here. Understandably, businesses want precision that can provide certainty, from which businesses can plan and banks and investors can rely.

We agree.

Increased certainty of demand would be an important development in the establishment of a more mature timber and wood products market in Australia. To achieve that, there has to be more data available, direct from those who use the wood to build houses and townhouses. The largest user group?

Fabricators.

If combined, averaged and anonymous fabricator data was available on an ongoing basis, simple measures of how much wood is used to frame a house could be provided on a rolling monthly basis for up to one year ahead.

That would provide local producers, sawnwood importers, fabricators and their customers with information they could rely on to plan to meet their future needs.

That would be good for business – for yours, and for the entire supply chain.

What is more, when the family gather around the barbecue again, we might even have the answers!

### Contact IndustryEdge

+61 3 5229 2470

[info@industryedge.com.au](mailto:info@industryedge.com.au)

[www.industryedge.com.au](http://www.industryedge.com.au)

### Contact Tim Woods directly

+61 419 352 869

[tim@industryedge.com.au](mailto:tim@industryedge.com.au)

Assumptions used in this analysis:

- All approvals in the prior year will be built and historically, were built in each year;
- The average size of each dwelling has not changed over the time period of analysis;
- All the wood required to build was consumed over the same timeframe as the approvals;
- The mix of sawn softwood products has not changed over the time period of the analysis;
- All sawn softwood (locally produced and imported) is used in houses, over all time periods;
- No adjustments are made for inventory.