Fresh Economic Thinking

Submission to the Productivity Commission Housing Supply Regulation Inquiry

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The Terms of Reference for the 2026 *Housing supply regulation inquiry* begins with the statement "Australia has a housing shortage".

If this statement is true today, then it has been true for over a century.

An apparent shortage of homes led to many inquiries and investigations in the early decades of the 20th century. For example, the 1911 NSW Inquiry into Fair Rents argued that rental price changes then were "a consequence of a housing shortage caused by the low level of construction during and since the depression of the 1890s…" (Troy, 1992, p217)

While the shape of dwellings and cities have changed in the century since, the economics has not.

This submission focuses on one main point, which is the economics of the production of new homes. Understanding this economics can provide clarity on the question of why new homes are built and how regulation affects this.

Overly simplified and internally contradictory economic reasoning has been a shortcoming of many previous reports and inquiries on this topic, and indeed, of the economics discipline more broadly.

We hope that coherent applications of economic theory may help avoid another century of inquiries.

The PC's 2022 report

In August 2022 the Productivity Commission (PC) published its study report *In need of repair: The National Housing and Homelessness Agreement* (PC 2022). The report concluded (inter alia) that:

> Land-use planning regulations determine the number, type and location of new dwellings, which influences housing supply. (p74)
>
> Inelastic housing supply can reflect … regulatory policies such as land use and planning regulations that do not permit new developments. (p22)

The economic reasoning supporting these findings was significantly flawed, though this flawed reasoning is common even in academic economic analysis, and it is hence a useful starting point for this submission.

There were at least two issues—missing economic theory, and consequently a failure to grapple with landbanking and land pricing. These issues led to further confusion about density versus supply, zoning taxes, and feasibility.

Missing economic theory

Without coherent theory, data remains unexplained, and policy predictions are unreliable.

Chapter 12 argued that regulation reduces the elasticity of new housing supply. The PC explained its reasoning in Section 12.3:

1. "In many parts of Australia, there are zoning restrictions that limit higher density housing in certain areas and effectively cap the number of dwellings that can occupy that space"
2. "If these caps are binding (in other words, if developers would like to build more housing than the restrictions allow) prices increase and an inadequate amount of housing is supplied" (p467)

Point 1 correctly describes the effect of zoning. But Point 2 is unclear and illogical.

Point 2 is unclear because the words "would like to" and "inadequate" have no meaning in economics. These words do not explain why regulation affects elasticity.

Like many others, the PC has claimed that because density restrictions limit the site-level quantity (dwellings per land area) response to rising prices, they also reduce the market-level quantity response (dwellings per period of time across all locations at all densities).

This is wrong.

Zoning rules which limit housing quantity at site level need not bind at market level. This is because most sites feasible to develop into housing are not developed. Most sites where a change of use is profitable are rationally left in their current use. This is sometimes described as speculation or landbanking (see explanation below).

When prices rise, the same quantity response can occur via higher density development on a smaller number of sites or lower density development on a larger number of sites. Density restrictions generally do not restrict the quantity of new housing supplied across the wider market, i.e. the flow of new housing into the stock. That quantity is a market equilibrium. How regulation affects it can only be examined via a suitable theory of housing production (see below).

This reasoning is an example of the "fallacy of composition" – the assumption that what applies to the part applies to the whole.

The PC's argument in points 1 and 2 was evidenced by footnote 7, p467:

> Put another way, housing supply does not keep up with housing need. This is different to a 'shortage', because the market price demand does not exceed supply. However, there is considerable loss to society due to the government restrictions — this is discussed further in section 12.4

But this footnote does not support the argument. The word "need" has no meaning in economics, and the claim of a considerable (welfare) loss to society is an evaluative claim about the merit of policy, not a scientific claim about the effect of policy on market outcomes. This logically cannot support the scientific argument.

Points 1 and 2 plus footnote 7 constituted the entire theoretical explanation in that report of why planning regulations make housing less affordable. This explanation is evidently lacking.

Landbanking

The PC's 2022 report also dismissed landbanking as an important determinant of housing the rate of housing production. It did this without (a) coherently defining landbanking, or (b) explaining why the empirical phenomenon commonly known as landbanking occurs.

Since landbanking does not exist in the PC's apparent current understanding of housing production – i.e. supply/demand analysis not grounded in any underlying theory – it is understandable it sought to explain it away.

But with a clear definition and better theory, landbanking exists in economics (as in reality).

The PC defined landbanking as:

> developers release[ing] supply at a slower than socially optimal rate for higher prices, and long-run profits. (p468)

By resting the definition on the idea of "socially optimal" the PC in that report defined landbanking in evaluative terms, i.e. as a market failure, before arguing that this evaluative concept could not explain a scientific concept (low elasticity of supply). In Box 12.4, this unclear mish-mash of "is" and "ought" was used to dismiss the relevance of landbanking.

A clearer view on landbanking is the following:

1. A change of use on a site is feasible if the present value of future returns in the new use exceeds the present value of future returns in the current use.
2. Landbanking is defined as holding a site with a feasible change of use in the old use.
3. Landbanking as defined exists empirically (e.g. when vacant lots with zero current income are not developed).
4. Landbanking as defined is explained theoretically as a rational decision of landowners with an 'in-the-money' (i.e. positive return) development option not striking that option because the optimal time to do so has not arrived.

Landbanking is important in explaining housing production because it is the opposite of housing development. A site with a feasible change of use can either be developed into new housing or banked in current use. Housing supply only begins when speculation ends, in other words.

The incentive to bank land is that undeveloped land rises in value over time. This is set against the incentive to supply new housing (i.e. profit from development today). The return to landbanking is the opportunity cost of development. Landbanking is a necessary feature of housing markets.

Any coherent theory of new housing production is therefore also a theory of landbanking and land prices. You cannot understand one without the other.

This viewpoint emerges from a large field of economic literature the PC was evidently unaware of, known as the "real options" theory of housing development or "dynamic investment theory".

Examples of papers from this field include: Titman (1985), Capozza and Li (1994), Guthrie (2010, 2024), Murray (2020, 2022) and Lange and Teulings (2024). The analytical approach goes back to Hotelling's (1931) analysis of optimal resource extraction.

In this field, land development is treated as a timing choice (as well as a density choice). This field seeks to explain when land is developed (not just how densely it is developed). It also explains land prices as the value of the development option.

These models of timing choice predict that land is developed when most profitable to do so (not when first profitable). This occurs because development is irreversible, so preserving the option is valuable. Landbanking as defined in point 2 emerges as a clear prediction of this theory. Real options theory can therefore explain everyday observations such as land being held vacant in high-value locations in a way the supply/demand analysis in the PC's 2022 report cannot.

Several implications of taking a real options lens to housing production are explained below.

Density limits don't change market-wide intertemporal trade-offs

In the real options approach to housing production, there exists no clear theoretical reason for why and how density restrictions will reduce the market equilibrium rate of new housing production across all locations.

Since density restrictions reduce the profitability of development in both current and future periods, deregulation does not necessarily skew returns towards faster development, even if it may change the locations where development occurs.[1] In some models, the reverse is true: the option to increase density in future, as well as sell at higher prices, provides one additional reason why deregulation can delay development in some locations.[2]

Zoning tax metrics are meaningless

The real options lens on housing development also has implications for so-called "zoning tax" methods.

A growing body of studies claim that zoning regulations add to house prices. These studies do not claim that regulation increases the value that structures add to land. Rather, they explicitly or implicitly claim that zoning rules increase land prices. The claim is that due to regulations, land is priced above the underlying or free-market price it would otherwise trade at.

These studies suggest the price of land per dwelling built can be decomposed into two parts: (1) a free-market price of land, and (2) an increment above that level, sometimes called the zoning tax, reflecting higher profits for landowners developing land or selling land to a developer.

For example, the following papers make the following claims about the price of land in a free market, and therefore the right way to measure how much regulations are elevating the price of land:

1. Glaeser and Gyourko (2018) claim land should cost 25% of the building construction cost.
2. Glaeser and Gyourko (2003) as applied by Kendall and Tulip (2018) claim land should only cost the same per sqm as the price of a marginal extra sqm added to a slightly larger site.
3. NZ's Ministry for Environment (2017) claims land should only cost <33% of the house price.
4. CIE (2025) in Australia and Covec and McCagney (2016) and Treasury (2024) in NZ claim that land at the urban boundary should only cost the same as its value in agricultural use (see also the references in Murray and Helm 2025).
5. NZ's Infrastructure Commission (2023) claims that less-regulated land at every zoning boundary should only cost the same as more-regulated land over that boundary, i.e. that incremental use rights should have no value at any zoning boundary.

[1] Guthrie (2024), for example, finds the effect of density restrictions on the rate of new housing production to be ambiguous, i.e. depending on parameters.
[2] Titman (1985), Murray (2021). An important caveat is that any site-specific effects of policy will be partly offset by substitution to other sites.

In each case, the price increment above the posited free-market level is claimed to be a consequence of regulation making land more expensive than otherwise.

Importantly, none of these methods are based on any coherent theory of land prices and housing production grounded in real options reasoning. All of the methods and metrics are ad hoc, i.e. not consistent with any coherent theory of where land gets its value and how regulation affects that value.

The specific reasons each method fails to represent what it purports to can be teased out (as in Murray 2021a, 2021b, 2023 and Murray and Helm 2025). But the arbitrariness of the whole literature can also be seen from the fact none of the metrics proposed are derived from any theory of land pricing.

This means that the entire zoning tax literature is baseless and all results from it are meaningless.

In reality, land in free markets is priced according to the development residual in highest and best use (which may be a future use) not on any of the ad hoc (and mutually inconsistent) pricing rules listed above.

Put another way, there does not exist any "underlying (free market) cost" of land, and any attempts to identify it and attribute the excess price to policy are flawed from the outset.

The PC has previously relied on these zoning tax methods, and in PC (2025) claims:

> the distortionary costs of land use regulation [are] reflected in the price premium for land zoned for residential use as opposed to other purposes (p176).

Our view is that the PC should:

a) ensure that arbitrary, ad hoc "zoning tax" metrics for how regulation affects house prices are not relied upon in future work.
b) not treat price premiums as indicative of the value of distortions to real economic activity without explaining by way of a coherent theory of land pricing and housing production why the former measure the latter.

Feasibility is not measured by comparing all-in costs and prices

The meaning, causes and consequences of housing development feasibility matter for understanding where housing production occurs.

As is common, PC Chair Danielle Wood's essay in *Inflection Points* adopts the industry language of "feasibility" and "cost stack" without defining those terms or explaining their relevance to housing supply (Wood 2026). Wood states that:

> regulations add about $200,000 to the cost of a new house, and $90,000 to the cost of a new unit. That pushes a lot of potentially feasible developments into the 'doesn't stack up' column, leading to fewer houses being built.

Most of the $200,000 figure is the price premium of residential over non-residential land from PC (2025). In other words, the amount by which land is worth more because you can do more with it is claimed to be a cost of doing those additional uses.

This is logically incoherent.

If zoning land for residential use lifts its value by (most of) $200,000, this is because the risk-adjusted excess profit to a developer is (most of) $200,000 higher as a consequence. Identifying this as a cost of development makes no sense. Claiming that profits constitute costs and that higher profits mean development doesn't "stack up" (i.e. is rendered infeasible) is incoherent.

A clearer view of feasibility and housing production is the following:

1. A *change of use* on a site is feasible if the present value of future returns in the new use exceeds the present value of future returns in the current use.
    a. For example, a change of use is feasible if the development residual at today's optimal density exceeds the value in current use.
    b. This test requires subtracting from sales prices development costs *excluding* land acquisition, then comparing this residual to the income stream in current use.
2. A *development project* is feasible only if the sales price exceeds all-in development costs *including* land acquisition.
3. Land prices are equal to today's development residual *at a minimum*.
4. Land prices can exceed today's development residual when the option to delay development until a more profitable time has value.
5. Many feasible *changes of use* are not feasible *projects,* because the market is pricing the land above today's development residual due to expectations of higher future profits.

The situations in points 3 and 4 are illustrated in the third and fourth columns of the figure below.

The reason project feasibility is always marginal at best is that land prices capitalise expected development profits at the optimal time for development. The implication is that adding land prices to development costs and comparing the total to sales prices tells you nothing useful about the effect of regulation. When the "cost stack" includes land prices, which reflect market expectations of the profit from developing land, this method of comparison will always find development profits to be barely feasible (as in the third column above) or infeasible (as in the fourth column).

Under the misplaced assumption that land prices will remain constant, this method will also always find regulations and taxes to make the crucial difference, apparently tipping numerous projects from feasible to infeasible.[3] In this way, regulation and tax can be readily misunderstood as a barrier to housing production.

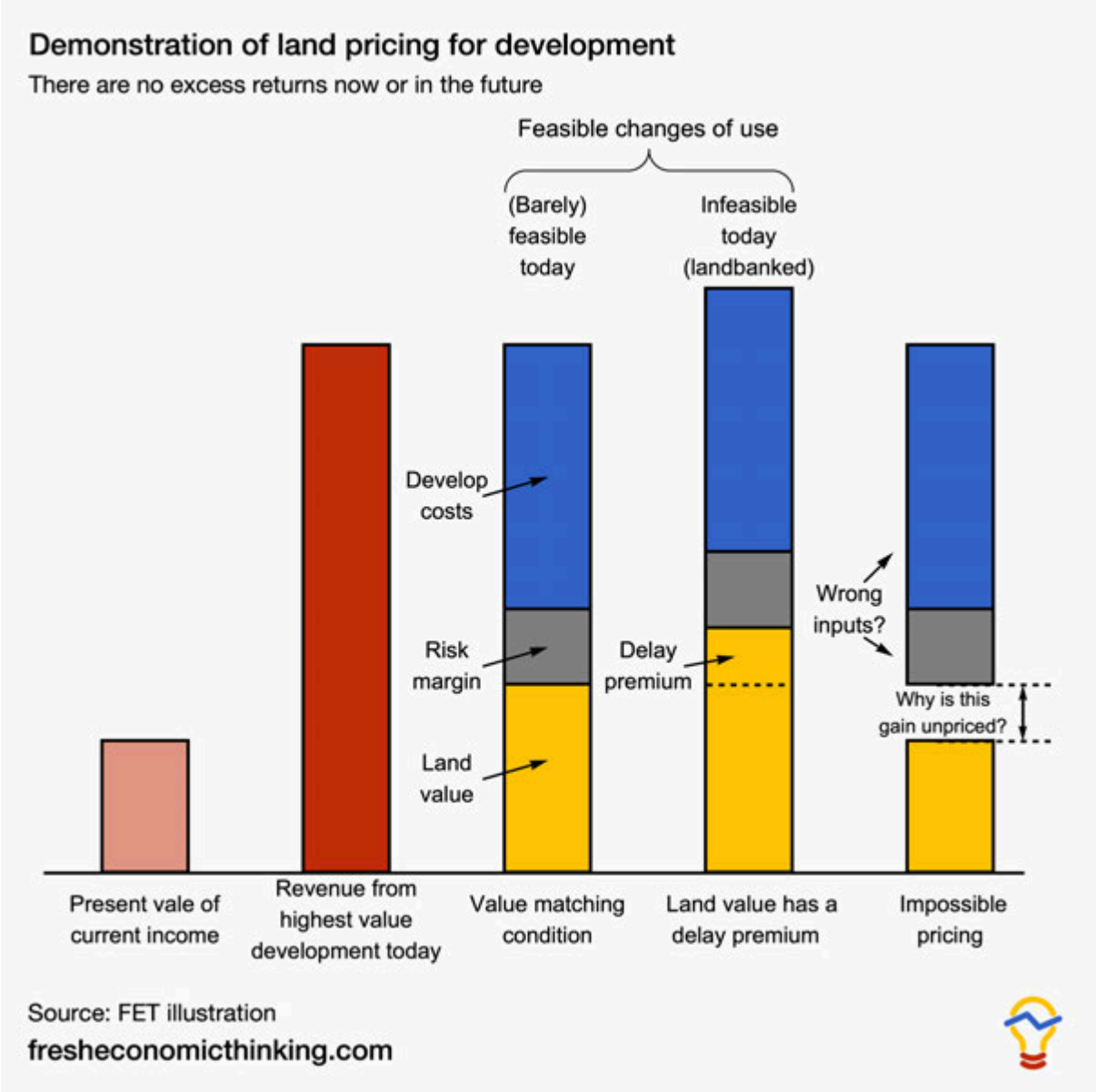
However the fact of inevitably marginal *project* feasibility does not mean regulations or taxes are making *changes of use* infeasible. That question can only be answered by comparing the sales price minus development costs *excluding* land acquisition to the income from the current use. The price premium for residential land cited by Wood and the PC (2025) bears no relation to this question.

A separate question is whether the reduction in the pool of feasible changes of use makes any difference to the rate of housing production.

This requires not just calculations of returns from alternative uses, but a theory of when and why new housing is developed. When there are many feasible changes of use which private developers choose to withhold from sale or development in any given year, reducing the size of the feasible pool will not reduce the rate at which new dwellings are supplied. This is the case for greenfields land, which is often released over 30+ year horizons, as well as much inner-urban land held vacant or in

[3] This is explained further in Helm and Williams (2026), Box 4.

low-value use. Changing rules on land use can certainly change *where* new housing production occurs, as intended, but it is not clear how it changes *how fast* new housing production occurs.



Conclusion

For this new PC inquiry into *Housing supply regulation* to break from a centuries-old inquiry tradition of misunderstanding why new homes are developed requires taking the leap into the economic theory of housing development as exercising a real option. This will mean that questions about how land gets its value and why land is banked instead of being developed can be coherently considered.

Many economically incoherent concepts such as the “zoning tax” pervade the literature. The development industry claims that feasibility is (a) a matter of project profitability not changes of use, and (b) feasibility somehow determines the rate of housing supply. Such concepts and claims hold back sensible economic reasoning about the production of new homes and how policy can change what new homes go where and in what form.

We see the PC’s task is to assess any costs of planning regulations against the benefits they provide.

The clear case for using planning regulation as a low-cost Coasian way to coordinate private behaviour and minimise local negative externalities, as has evolved in almost every successful city worldwide, needs to be a core element of this conversation. The potential cost to be set against this benefit remains to be understood by the PC (and other economists), and will only be understood via clear thinking about the economics of new housing production.

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