

MAKING APARTMENTS AFFORDABLE

MOVING FROM SPECULATIVE TO DELIBERATIVE DEVELOPMENT

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Summary

Urban planning policies in Australia presuppose apartments as the new dominant housing type, but much of what the market has delivered is criticised as over-development, and as being generic, poorly-designed, environmentally unsustainable and unaffordable. Policy responses to this problem typically focus on planning regulation and construction costs as the primary issues needing to be addressed in order to increase the supply of quality, affordable apartment housing. In contrast, this paper uses Ball's (1983) 'structures of provision' approach to outline the key processes informing apartment development and identifies a substantial gap in critical understanding of how apartments are developed in Australia. This reveals economic problems not typically considered by policymakers.

Using mainstream economic analysis to review the market itself, we find high search costs, demand risk, problems with exchange, and lack of competition present key barriers to achieving greater affordability of apartments and limit the extent to which 'speculative' developers can respond to the preferences of would-be owner-occupiers. The existing development model, which is reliant on capturing uplift in site value, suits investors seeking rental yields in the first instance, and subsequently capital gains, and actively encourages housing price inflation. This is exacerbated by lack of density restrictions, such as has been the case in inner Melbourne for many years, which permits greater yields on redevelopment sites. The price of land in the vicinity of such redevelopment sites is pushed up as landholders' expectation of future yield is raised. All too frequently, existing redevelopment sites go back onto the market as vendors seek to capture the uplift in site value and exit the project in a risk-free manner.

This paper proposes three major reforms, which together would enable development of better, more affordable apartments for housing consumers:

- Firstly, that the market for apartment development be *re-designed*, following insights from the economic field of 'Market Design' (a branch of Game Theory). A two-sided matching market for new apartments is proposed, where demand-side risks can be mitigated via consumer aggregation.
- Secondly, consumers should be empowered through support for 'deliberative' and 'do-it-yourself' (DIY) development models, in order to increase competition, expand access, and promote responsiveness to consumer needs and preferences. A 'Smart Housing Market' is proposed to broker the necessary connections and simplify the process.
- Finally, planning schemes need to impose density restrictions (in the form of height limits, floor space ratios or bedroom quotas, for example) in localities where housing demand is high, in order to dampen speculation and de-risk development by creating certainty. Restrictions on over-development on larger infill sites can be offset by permitting intensification of 'greyfield' suburbs. Aggregating existing housing lots to enable precinct regeneration with moderate height and density increases would permit better use of airspace thus allowing design outcomes that can optimise land use while retaining neighbourhood amenity.

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Apartment Development

Supply and affordability

The need for major Australian cities to move to more apartment living has been widely recognised in planning policy. Higher density development has long been promoted in metropolitan strategic planning as a means to accommodate population and household growth efficiently and to support well-serviced urban precincts. Apartment living is also recognised as a necessary part of transition to sustainability at regional scale.

Despite several important periods of apartment development in Australia's history, notably the years preceding and following World War Two, this form of housing has not been a major part of Australian urban life. Over the last decade, however, many places, including metropolitan Melbourne, have experienced a significant increase in apartment supply. For the first time, more apartment units are being built in the Melbourne metropolitan region than detached houses, although this recent spate of development has been building from a low base.

A sizeable part of new apartment supply is driven by the emergence of a global market for apartments as a channel for the transfer of international capital. In this context, the role of new housing production as an investment vehicle needs to be balanced carefully with addressing the housing needs of the local population and securing an appropriate housing legacy for future generations. To this end, new supply needs to be good quality, to cater to the diversity of housing need and be broadly affordable.

Housing price inflation, particularly in Sydney and Melbourne, has contributed to a serious decline in the number of low and middle income households able to purchase housing. In part, asset inflation reflects housing supply lagging well behind demand. The promotion of higher density housing as a component of urban consolidation policies, however, has delivered less supply than required and has failed to be affordable. It is also often criticised for poor design and quality.

Planning and other regulation is often cited as a significant cost driver for medium and higher density infill housing. The response in Melbourne has been a laissez-faire approach to planning in the central city and use of the Minister for Planning's call-in powers to expedite development proposals, with approval for considerable increases in height and/or density.

In this section of the paper, we adopt Ball's (1986) 'structures of housing provision' approach, to provide an outline of the apartment development process as it typically is undertaken in Australia. Again following Ball, we use a mainstream economics frame to then critique this delivery model, highlighting:

- The risk profile of vertical sub-division of land versus horizontal sub-division of airspace (thinking of apartments in terms of development typology rather than built form typologies)
- The role of project costs in determining project viability, but not market price
- Project margins and development finance
- The role of planning in fostering land speculation and thus contributing to declining housing affordability

- The costs associated with obtaining sales and the risk associated with uncertain demand and,
- The inadequacy of pre-sale contracts to mitigate settlement risk.

We argue that a significant problem for the supply and affordability of apartments relates to the current inability of the market to match supply and demand efficiently in order to progress an orderly and de-risked development process.

Apartment ‘provision’

The ‘structures of provision’ approach articulated by Michael Ball is used here to understand empirically and conceptually how apartments are *provided*, rather than simply *produced*.

Creating and building built structures invokes particular sets of social agents defined by their economic relation to the physical process of provision itself. Each historically specific set of social agents can be defined as a structure of building provision. By provision is meant the production, exchange, distribution, and use of a built structure. Involved may be a landowner, a developer, a building firm, building workers, financiers, building owners, and final users. (Ball 1986: 455)

To date policy analysis has focused strongly on production (the cost and availability of land, for example) and to a lesser extent on consumption (for instance, how growth in wages results in price inflation). These are important but do not tell the full story. Burke and Hulse (2010) identify the following housing sub-systems, which fit with Ball’s structures of provision approach, and capture conceptually the components of the housing system that assists with understanding the development process.

Production

- The nature and techniques of land ownership, land assembly and housing development;

Consumption

- The forms and methods by which households consume housing;

Exchange

- The practices and institutions which facilitate the sale, renting and use of housing; and

Management

- The practices by which the housing system is managed, including policy and planning at all levels of government (including regulation, taxation, transfer payments, borrowings, direct provision, etc.)

As we proceed, we highlight previously unexplored issues concerning the exchange sub-system, by examining the role of presales and settlement, and the management sub-system through land title and consumer law.

The development process

The first step in understanding why the market has failed to deliver affordable, quality apartments is appreciating that apartments have a structure of provision that is distinct both from both detached dwellings and other forms of multi-unit dwellings such as townhouses. The starting point is in understanding the difference between the horizontal and vertical sub-division of airspace. Horizontal subdivision creates horizontal layers in the airspace above the physical land, creating apartments for example. In contrast, vertical subdivision

maintains its links with the physical land subdividing the original lot into smaller land sub-parcels (such as for townhouses). The different subdivision type affects the size, complexity and risk of the development project and these factors intrinsically impact the structure of provision for apartments. We contend that it is access to finance (or lack thereof) and financial risk, which are the key differentiating factor in the structure of provision for apartments.

Projects comprising vertical subdivision, such as where townhouses replace a single house on a single residential lot, are generally small-scale projects that are constrained in size and value by the type of development finance small developers can access. In this subdivision development model, the underlying land value is used as security against borrowings and the quantum and characteristics of the loan reflects the undeveloped or raw value of the site rather than the total anticipated cost or value of the finished project. This means that the requisite construction loans are often secured against other assets of the borrower such as the family home of the small developer (Weaver and Kingsley 2001). The net asset backing of the small developer (the borrower) therefore limits how much can be borrowed and thus the scale of the project able to be undertaken.

Smaller scale projects are often seen as lower risk by financiers by virtue of the intrinsic (and realisable) value in the underlying land should the financier need to sell assets to recoup its loan, the project needing fewer buyers to generate the income to repay the loan, and the relatively short project time frames involved. These are uncomplicated loan structures, generally negotiated at a local bank branch level. This mainstream bank finance has replaced solicitor's funds used during the 1960s and 1970s for the building of flats (Burke 2012).

Projects involving horizontal subdivision, on the other hand, are by definition multi-storey complexes with apartments on each level. Titles to the apartments are created in a stratum, that is, in the airspace above the land by virtue of the construction of a building thereupon. Creation of a new airspace 'lot' is thus a much riskier process, and it is these additional risks that require further examination when considering firstly the structure of provision for apartments, and secondly when envisioning an alternative structure of provision from that which has existed in Australia for several decades.

When considering risks, we first consider why financiers introduce a wider range of security instruments to protect their funds in apartment development. The financier is concerned with the considerable financial gap between the raw value of the land and the total cost of developing the airspace. The long and often uncertain time period between project inception and completion makes this form of development a relatively high-risk financing venture. As with the smaller projects, the development site itself is used as initial security for the loan that is required to complete the project. However, the quantum and conditions of the development finance reflects the anticipated overall cost or value of the end project, thus allowing for a substantially larger loan and hence a larger project to be constructed.

Developers of apartment projects tend to have corporate business structures and a professional staff (Dowling 2005). Reflecting diversification out of the non-residential construction sector (Dowling 2005), these developers use building practices and technologies similar to those employed in commercial developments, using unionised workforces and operating with higher overheads and margins, reflecting economies of scale. The apartment developer

usually provides little personal security for the loans, with loans secured only against the project in many instances, or against other company assets (Weaver and Kingsley 2001). As Ball (1998: 1505) notes, it is the financier who bears most of the costs of failure whereas the developer 'reaps virtually all the gain...' if '...the gamble comes off'.

The 'gamble' here refers to the investment of millions of dollars of financier's funds to build an apartment building, in the hope that there will be willing buyers for those apartments upon completion. To mitigate this risk in Australia, research is used to forecast the strength of consumer demand for the apartments to be built, and 'pre-sales' are used by developers and financiers alike to confirm market acceptance of the product type and the price point on offer (Bryant 2012). Loan terms dictate that construction finance is not released until sufficient pre-sales are achieved to cover repayment the loan, which can be many months or years, often making it more time-consuming than statutory approval processes. Pre-sale campaigns are also expensive, comprising up to 10% of total project costs (Sharam *et al.* 2015).

The pre-sale process has been used as a risk mitigation measure for financiers and developers in Australia in the past few decades, enabling larger projects to proceed. However, and in addition to the considerable cost of obtaining pre-sales, the pre-sale contract is an imperfect security instrument for all parties involved. Larger developments typically take many years from inception to completion, with many critical hurdles along the way (Millington 2013; Rowley and Phibbs 2012). As such, a number of years can elapse between a pre-sale and settlement, which may correspond to a shift in market conditions and demand. Any apartments not pre-sold can represent a

windfall for the developer who takes the uplift in value in a rising market. But unsold apartments can also be a considerable risk, and slow post-completion sales can strip a developer of project profit in a falling market. Pre-selling for housing, as Burke and Hulse (2010) suggests, dampens property speculation but a significant proportion of apartments in Australia are not pre-sold, so speculation (on capital growth) is still a significant driver of projects.

Although a pre-sale contract theoretically binds the purchaser, purchasers are inclined to 'walk away' (losing their deposit, which in Australia is a maximum of 10% of the sale price) if the value of the apartment falls significantly between contract and completion, such as in a weak or falling market. This may occur particularly if mortgage lenders withdraw their offer of finance, with little practical recourse available to the developer. While legal remedy is technically available it is generally not cost effective. This 'settlement risk' is addressed by developers and financiers through a number of means, such as vetting purchasers to establish whether there is risk of default at settlement, restricting the purchase of multiple dwellings, and in some cases limiting the level of foreign investment (Burke and Associates 2010).

Apartment projects are also risky as they generally receive no positive cashflow for the duration of the project until completion, unlike greenfield or townhouse development, which can be staged to deliver incremental revenue. This characteristic of apartment development leaves both developer and financier highly exposed until the project is completed, the new titles created and pre-sold apartments settled. State-based legislation requires pre-sale deposits to be held in trust in order that buyers are protected in case the project fails. Consumer laws also provide some level of protection for pre-sale buyers from significant changes being made by the developer via minimum

disclosure requirements.

A further issue in relation to apartment development is its segmented markets. Most apartments built in Australia are aimed either at the luxury end of the owner occupier market (where greater margins are available) or at investors seeking rental yields in the short term and capital gain in the longer term. Both these market segments are strongly influenced by the geography and amenity of location, with landlords requiring a ready supply of tenants with capacity to pay, inclining them towards employment and entertainment rich precincts, such as the city centre. Tenants for investor stock seek ready access to employment or study nodes as well as entertainment locations so as to minimise transport and other living costs. Upmarket owner-occupiers seek water views, high neighbourhood amenity and so-called 'lifestyle' attractions. Developers are accordingly very conservative in regard to the type of product they will offer and the localities they target, as a means of ensuring sales (Kent 2011). Although public policy supports apartment development, its contribution to housing supply is mainly through large, generic towers, with investment low or non-existent in many locations, and with little contribution to providing affordable housing solutions to families.

Much of the risk around apartment development can therefore be said to be associated with being able to sell the completed product for more than the sum of the costs to produce it. 'Property development is not of itself 'real estate' but...a particular state of transition or change in form of real estate toward a different state with an associated change in potential or real value' (Drane 2013: 2). Old property rights are extinguished (for example, freehold land) and new ones created (for example, strata title) (D'arcy and Keogh 2002). This transformation is at the core of exchange in the structure of

provision for apartments, and through the pre-sale process is also at the core of the financier's risk assessment. Demand therefore needs to be well ahead of supply in order for the current pre-sale system to sufficiently de-risk an apartment development to the point where it can proceed. If financiers foresee a glut of apartments or if presales cannot be obtained, construction finance is withheld. Supply is therefore self-regulating unless easy credit is available. Outside post-property bubbles and recessions (when there is too little demand), locking in demand represents the key development risk. We contend that pre-sale contracts represent a sub-optimal solution to the problem of locking in demand. The pre-sale process is costly and time-consuming, contributing to rising apartment prices and the generic product produced in high amenity locations does not supply affordable housing solutions for families.

In this section we have outlined the existing structure of provision for apartments in Australia, which is different to the structure of provision for detached and other multi-unit housing. Apartment development is high risk, capital intensive and reliant on debt funding. Virtually all the capital must be expended before any revenues can be obtained. Demand therefore is critical and the timing of settlement is crucial to the profitability of projects. Finding buyers is often time consuming and is expensive, and signifies a search problem, an economic problem in need of a solution. Further, Australian consumer law dictates pre-sale contract conditions, which neither fully protect the buyer or the developer, whose interests can at times differ markedly. Something of a square peg in a round hole, pre-sale contracts do not address adequately the risk of default at settlement. This draws attention to demand as the key development risk, and to exchange as a highly problematic component of the structure of provision.

We have also highlighted management issues in the structure of provision, such as consumer law and property law. It is worth noting that the introduction of strata title enabled a new structure of provision, primarily because it created a legally defensible property right to airspace. Strata title nevertheless did not unleash large apartment development in Melbourne. The Transfer of Land Act placed a caveat on the pre-sale of strata title properties by requiring settlement occur within sixty days of the contract date. That is, projects had to be completed so quickly that pre-sales contracts could not usefully be employed by developer or financier. In the 1980s this requirement was amended to 180 days with the right to an extension, thus opening the opportunity for larger construction projects.

In the next section we provide an overview of development financing. This is included for two reasons. Firstly, because public policy debates indicate little understanding of the impact of financing and are hampered as a result; also because 'deliberative development', which we describe and advocate later in this paper, is required to confront the restrictions set by financiers before it can become a more mainstream phenomenon.

Development finance

Apartment development typically depends on access to specialist development finance. Development finance is a form of project finance; a specialised form of lending where individual credit risks are assessed and borrowing instruments are structured to deal with specific risks of the project (Weaver and Kingsley 2001). The barriers to access to development finance are associated with these numerous credit risks, the time and cost associated with mitigating those risks,

and the expected returns in recompense for having taken on and actively managed those risks. Access to development finance is therefore a significant hurdle to increasing the supply of housing (Bryant 2012; PCA 2012; Urbis 2012).

The complex nature of development finance and the multitude of credit risks assessed by lenders are detailed by Weerasooria (1998) and Weaver and Kingsley (2001). Developers face lengthy negotiation periods with potential lenders, involving extensive information exchange about every detail of the project and the borrowers themselves in order to establish the developer's credibility with the financier and to secure finance to be able to proceed with the project. The following are some of the types of credit risks that are addressed as part of the application process.

Appraisal of security to support the borrowing

Unencumbered security sufficient to cover the loan value is required, and financiers place fixed and/or floating charges (i.e. a legal right) over the assets offered as security. Security may be provided by way of first registered mortgage over the development site and/or any other properties or assets owned by the developer. Personal or corporate guarantees and/or lien may be required if other security on offer is insufficient. Personal guarantees may also be required of senior executives and/or the company directors. Typically, a charge is placed over the development company (which is often a special purpose vehicle established with its own legal entity separate from the development's sponsors) and all the supporting documentation for the project. This includes everything from architectural plans to the pre-sales contracts. Multipartite agreements are negotiated with builders and key consultants engaged on the project. This permits the financier to step in and complete a project if required.

Analysis of the borrower's capacity to repay

The borrower must repay the loan at the end of the project via one of two methods (or a combination of both) being: from the proceeds of sale, or via refinancing. Pre-sales to a value sufficient to cover repayment of the loan are generally required. These must be arms-length pre-sale contracts with full 10% deposits paid, and are discussed in greater length shortly. Financiers also analyse the developer's personal and business cash-flow position to assess its ability to service the loan and to cover cost overruns if required. Independent valuation of project income or project revenue to either service the loan or repay in full is also a requirement.

Appraisal of the borrower's financial strength

Due diligence is carried out on the borrower's assets and liabilities, including title searches to confirm ownership of the land and other assets offered for security. The overall level of financial gearing of the borrower and any associated entities is assessed, as is the lender's overall exposure to the borrower and its associated entities. Due diligence is also undertaken on the builder and key consultants. The builder must also demonstrate financial strength and show that it will not be over-extended by accepting the work.

Appraisal of the borrower's integrity

The financier will assess the business and personal character of management and key project personnel, as well as the track record or competence of the developer and key personnel in that specific type and scale of project, and the borrower's social and financial stability, honesty and reliability. This personal and professional assessment will also apply to the key contractors and suppliers associated with the project, such as consultants and the builder, to ensure all are good credit risks.

Analysis of key external and internal factors

The lender may conduct its own research into the market and economic conditions in order to assess the likely demand and supply factors that will impact the project over the period of the loan. Evidence of all statutory approvals is required prior to the release of funds for construction. This stage of development is typically funded by developer equity so the financier is not exposed to this particular risk.

Loan conditions, such as the loan to value ratio and pre-sales requirements will be a reflection of the financier's risk weighting for each of these criteria. Equity is generally sought and must be spent prior to debt funding being released. Equity demonstrates the developer's financial strength and reduces the risk accepted by the financier. Even where credit-worthiness can be established and finance approved, the release of funding hinges on the most critical part of the development process: obtaining the required pre-sales (Bryant 2012; PCA 2012).

The role of pre-sales in lending for apartment development is two-fold: it confirms market acceptance of the product type and product price on offer; and it is a form of security for the financier that the project has the capacity to repay its debts (Bryant 2012). Pre-sales de-risk the financier's exposure to the project by locking in the future revenue stream that will be used to repay the debt. Individual purchasers are vetted to establish whether there is risk of default at settlement. Depending on the regional market, and the developer, financiers may limit foreign investment. The sale of real property is not effective until the title is transferred and the balance owing is paid, which in the case of new development is when the building is

complete. The importance of obtaining pre-sales means developers are justifiably conservative about locations and product appeal.

Pre-sale requirement levels are dictated by the credit conditions of the day and the lender's risk appetite. In broad terms, if a developer is building 100 apartments, and the financier is providing 60% of the funding, the financier will require 60 of the 100 apartments are sold prior to releasing funding, in effect 'guaranteeing' the repayment of the loan, the interest and fees. The sale of the remaining 40 apartments must recoup the developer's equity and return on that investment (profit).

Pre-sale campaigns involve a significant investment from the developer – up to 10% of project costs – making it more expensive than the finance. Campaigns include: constructing and operating display units; marketing materials; real estate agents to handle sales; newspaper, magazine, internet, television and radio advertising; home shows and trade delegations. Because investors rather than owner-occupiers are the bulk of the purchasers, the 6% commission paid to financial planners is also a significant cost.

Some of the very large high-rise developers employ their own sales staff and maintain offices in key markets to avoid such high costs. Some developers are moving to soft marketing approaches, using social media and web-based advertising and recruitment, for example, to reduce costs and increase the cost efficiency of the campaigns. The latter suggests the market is moving in the direction of internet-based selling models. The cost of pre-sales is significant and is generally overlooked by both industry and policymakers advocating measures to make housing more affordable.

For purchasers, committing to buy 'off-the-plan' is far from risk free, reflecting the fundamental riskiness of developing volumetric airspace. Pre-sale involves the purchaser signing a contract of sale with the developer prior to the property having its own certificate of title or even having been built. Pre-sale requires the payment of a maximum 10% deposit by the purchaser and, in order to protect the purchaser, is held in a trust account. Australian Consumer Law now also requires all statutory approvals to be in place prior to commencing the pre-sales campaign. In the past, developers ran their pre-sales campaigns concurrently with obtaining approvals, saving them considerable time and hence money. If the final approvals altered the project, and the purchasers were dissatisfied, they had no recourse.

In short, pre-sales are a clumsy legal means of effecting a transaction that has a significant temporal delay before it can be finalised. This delay and the associated risk means there are considerable 'transaction costs' which are passed through to the consumer. It is also a process that generates negative externalities, such as speculation.

Finally, financiers expect developers to seek a return on the investment that is commensurate with the risks, typically a minimum rate of return (profit) of 20% on costs. On an annualised basis (the time value of money) this 20% return is modest (e.g. a four year project means 5% per annum). Actual profits cited were generally between 25% and 30% and sometimes higher. Very substantial profits can be made when prices and market conditions are rising, as developers are able to capture the uplift in land value, hence the role of speculation in property development. Peiser and Hamilton (2012: 13) referring to the US suggest that developers expect to earn 20% per year, but that only 3% of this is the margin they take on costs. The

remaining 17% accounts for inflation and the risk premium. The premium is the cost of poor coordination between the supply and demand sides of the market. The financier's requirement for a minimum level of profitability is important in the context of the supply of affordable housing. It means that if a commercial developer were to propose reducing their profit in order to provide more affordable housing, they would be unlikely to obtain finance.

The development finance fundamentals highlighted here help to explain why the inability to obtain development finance, particularly in the apartment sector, is cited as one of the key constraints to housing supply, despite strong demand fundamentals (Access Economics 2010).

Demand, supply and price

Economic theory tells us that strong demand for a commodity and high prices should result in new supply-side entrants and an expansion of supply of the commodity until demand is met and prices decline (Adams *et al.* 2008: 19). This understanding implicitly informs much of the debate on housing supply and affordability in Australia. Policy and market analysis almost invariably follows the assumption that if input prices for housing can be lowered, housing would be more affordable; hence the ongoing debate on taxation and planning regulation, and secondly, that new supply will lower prices.

This view assumes that housing supply comes onto the market on a cost plus (competitive) margin basis, whereas new housing stock in fact comes onto the market reflecting prevailing prices (Berry 2010; Wing, Norman and Orsmond 2012). Cost savings, such as those achieved through construction innovation or planning deregulation,

are not passed through to the consumer but accrue to the developer. There are two main reasons for this. Firstly, there is the oligopolistic structure of the development industry (Coiacetto 2009). Second is the impact of project timing.

Pre-sales lock in the price of the apartments subject to the pre-sale quota imposed by the financier, but the cost of the development remains subject to change, with cost overruns a risk at the construction stage. Accordingly, pre-sale buyers are unlikely to be the recipient of any savings (savings may be made by this stage but profits are still forecast rather than actual), or competitive discounting. This will be because, while financiers demand a certain level of pre-sales, the basis of their assessment of project viability will be an apartment price that delivers the forecast profit. If presales are slow and there is a looming glut financiers will withdraw their offer of finance and the project will not proceed until conditions improve.

If discounting of apartment prices occurs for apartments it is for those not subject to the pre-sale quota, and the discounting is intended to reduce the risk of having distressed assets. That is, to shift apartments in a slow market. Nevertheless, these apartments (in a rising market) embody uplift in value that pre-sales forego. It is logical, if not an imperative for speculative developers to retain any savings that may have been created in the development process through to the end of the process when their financial vulnerability is greatest. Where cost savings are important, however, is in terms of project viability (that is, in ensuring projects are financed and can proceed); but potential costs savings do not directly affect housing affordability under speculative supply conditions.

Increasing supply in order to reduce prices faces a fundamental problem. Speculative developers build housing assets in order to sell

them. To obtain finance there needs to be independent verification that sufficient demand exists that will enable a project to proceed and realise a minimum level of profit. When demand periodically slows, reflecting the boom-and-bust cycle that is a feature of property markets, production stops. Financiers switch investment classes and developers put their plans on hold. If the timing is particularly bad, and developers are left holding stock they cannot liquidate, the result may be bankruptcy. Over-supply of apartments (and hence heavy price discounting), when it occurs, is generally the result of an over-supply of credit (such as existed prior to the global financial crisis) and an unanticipated drop in demand. When credit is not so easily obtained, the system, while imperfect, is in effect self-regulating and is characterised by chronic under-supply.

The current economic problem is the failure to match supply and demand efficiently. The quest for an orderly and de-risked housing supply model should be an objective of public policy. In the next section we focus on the planning system. While we argue that planning is subject to too much attention in relation to housing affordability, the structure of provision analysis indicates that there are flaws in the planning system, which need to be rectified.

Apartments and planning

Victoria has a laissez-faire planning regime, especially in the central city area, which is designed to promote capital investment. Floor space or plot ratios have not existed as a development control tool in Victoria since 1999, and while building height limits apply in many areas, in practice these are treated in the application process as a negotiable factor. As the market has increasingly sought to invest in residential

products, one argument mounted by those with an interest in keeping restrictions on site yield to a minimum is that this helps keep apartments affordable. However, this policy has unintended consequences that fuel speculation to the detriment of affordable housing supply. Permitting greater yields on redevelopment sites pushes up the price of land in the vicinity, because the vendor expectation of future yield is raised, thus negating any cost saving for future projects. At the same time, existing redevelopment sites tend to go back onto the market as landholders seek to capture the uplift in site value and exit the project in a risk free manner (Woodcock *et al.* 2011).

Assuming these existing development sites are purchased by developers genuinely intending to build upon them, these new project proponents often find themselves with sites literally too risky and/or expensive to develop (Rowley and Phibbs 2012). With the increased yield potential capitalised into the land price, only an additional increase in apartment prices (that is, an increase in the capacity and willingness of consumers to buy) or decrease in construction or other costs will permit the project to be viable and gain finance. The larger scale of the development creates a further risk, as this potentially limits who will buy into it. Large apartment towers, for example, are highly reliant on specific tenure cohorts, such as student renters. This market has been described as having no 'natural buyers', in that only around 20% of apartments in large towers are purchased by owner-occupiers.

'Activity Centres' should attract apartment developers but the demand for their product at the price at which they can supply has often been insufficient in many nominated development zones (Newton and Glackin 2014). Nor are they going to compete with

small developers for suburban residential sites, as the margins are too slender. Only where yields can be increased significantly are they likely to be interested. The difficulty of encouraging or redirecting development to designated activity centres or preferred development zones was noted in the Melbourne 2030 Audit (p. 37), as was the problem of achieving a supply of more affordable housing (pp. 59-60). The result of the current structure of housing provision is that planning alone will not deliver desired built forms and uses. But it does have an important role.

While it may appear counter-intuitive, density restrictions in the form of planning controls that limit the yield available from re-development sites, such as height limits, floor space ratios or bedroom quotas, may be effective in dampening speculation and creating a positive environment for more deliberative housing development. In essence, planning controls can do the opposite of deregulation by creating certainty: certainty about what the site is capable of yielding. With greater certainty, risk is reduced and the project has an increased likelihood of obtaining finance and proceeding as proposed. Further, landowners will moderate their expectations of capturing any future uplift in value once the development capability of the site is known and fixed. The need for increased housing supply as well as affordability requires certainty in the planning process to remove speculation from the development process.

In 'greyfield' suburbs, restrictions on yield to prevent over-development can be offset by reconfiguring existing housing lots through aggregation (Newton and Glackin 2014) to enable precinct scale regeneration. Moderate height increases and better use of airspace can maximise design outcomes and optimise land use while retaining amenity. For example while two-storey terrace housing can

be sustainable and affordable, stacking dwellings on top of each other alleviates the need for internal staircases potentially permitting more dwellings without a corresponding increase in site coverage or density.

A new structure of provision, based on deliberative development and use of volumetric airspace can be the means of increasing affordable supply in the suburbs and in many activity centres. Indeed, existing developers may benefit from this new deliberative development model, transforming their business models to fee-driven service providers, rather than profit driven speculators and risk managers.

Practical and policy implications

The structure of provision for apartments has several implications of relevance to public policy objectives for planning and housing. As discussed, current urban development and housing supply models are not able to achieve the strategic redevelopment of 'greyfield' precincts required for regional transition to sustainable urban form (Newton 2010), while existing processes of residential intensification are both a cause and effect of declining housing affordability.

Market conditions required for development of brownfield land to be viable result in a number of unsustainable outcomes. Inner urban and waterfront sites—in effect 'global places' (Dovey 2005)—are developed intensively as high rise, high density and have high carbon footprints, while middle ring and outer urban sites are frequently under-realised in terms of dwelling yield, as land development models typical of greenfield sites prove the most viable and profitable.

There is also a disjuncture between the housing being supplied and the housing that is needed and current systems of provision are

unlikely to ameliorate this. Demographic trends in household formation have raised questions about the appropriateness of housing stock, both the existing and that which is being built, to suit future housing need (NHSC 2010: 20). It is also forecast that the ageing of the population will likely reveal a shortfall in housing that is both physically suitable and appropriately located to service a substantial cohort of elderly residents (NHSC 2010: 136 ff.; Major Cities Unit 2010: 98). In addition, it has been noted by some in the development industry that the dynamics of the housing market work against ageing home owners in many locations being able to take action themselves to secure more appropriate housing (Pradolin 2009).

A growing shortfall of well-located affordable housing meanwhile is widening the supply gap between the shrinking social housing sector on the one hand, and the increasingly costly (relative to income) owner occupied stock on the other, affecting new household formation (Chandler 2010: 4). The result is a substantial latent demand for housing that remains unmet while the development industry responds largely to demand from investors.

There are also implications for apartment design. Because much of the current supply of apartments is marketed to investors, this drives the commodification of apartments as 'products' tailored to suit specific 'price points' in the investor market. This in turn has the effect of focusing design innovation to the service of this end rather than to addressing creatively the housing needs of occupants or in response to strategic urban and housing issues. It also reduces the diversity of supply and puts pressure on apartment sizes.

A New Paradigm

Disruption and the sharing economy

Apartment developers commence projects assuming buyers will be found and are as such 'speculative'. Given the demand-side risk, speculative developers accordingly produce generic product, with intending owners and occupiers able to exert little influence over the market in terms of design, amenity or quality, unless at the luxury end of the owner-occupier market. However, where consumers themselves have collectively assumed the role of the developer they have been able to internalise the developer margin, thus making significant cost savings and achieving other collective ambitions, such as higher environmental performance and tailored designs.

This 'deliberative' development model, increasingly popular in Western Europe and not without precedent in Australia, typically delivers cost savings of 25-30% compared to equivalent speculative development. This compares extremely well to existing policy measures aimed at improving supply and affordability. Deliberative development can also deliver improvements in amenity, sustainability and urban design, making it compatible with a more deliberative planning process.

Deliberative development goes a significant part of the way towards addressing the need for presales and the cost and risk in finding buyers. We argue, given the savings and other benefits, deliberative development should become a new, competitive force for housing innovation in Australia. The innovation proposed here to achieve scale and equitable access for deliberative development can also address exchange problems at a more systemic level.

This is tantamount to a re-design of the market itself. Two-sided matching markets, in which two pools (one each on the supply and demand sides) that aggregate the actors on both sides of the market, and a formal market manager, are created to match supply and demand more efficiently. Formal membership shifts the task of finding pre-sales from one that is akin to looking for needles in a haystack to one that is more like shooting fish in a barrel. This two-sided matching market model is the basis of much of the new E-commerce, such as Uber and AirBNB. Known as the 'sharing' economy because it relies on cooperation as much as competition, the 'disruptive' nature of this type of innovation is often hailed as significant.

Re-designing the market for apartments

Earlier in this paper we outlined the key economic problem encountered in the development of property for apartments. Specifically, there is difficulty in coordinating supply and demand, with the vagaries of the demand side representing a very considerable risk. Finding buyers is both difficult and expensive. To complicate matters the requirements of Australian Consumer Laws, intended to protect consumers buying apartments off the plan, not only inadequately protect these consumers from changes the developer may seek to make after the pre-sale contract is signed but also fail to protect the developer if the buyer does not proceed to settlement. The market puts a price on these risks with financiers requiring projects seek a compensating level of return on capital. Typically, such returns are only possible if uplift in land value can be captured. These risks

reinforce the oligopolistic structure of the industry, narrow the type of product offered and the locations in which development is feasible.

These are costly economic issues identifiable using mainstream economic analysis. Mainstream economics is less useful, however, in offering a solution. This occurs because economics traditionally focuses on competition as the force that increases productivity. The Internet however has changed that, and the rise of the so-called 'sharing economy' as the term suggests hints at cooperation as a key strategy for enabling improved productivity in many markets, or in bringing new markets into existence. While the Internet provides the communications infrastructure to reduce search costs, the growth in computational power and the application of the principles of 'Market Design' theory have provided the backroom capacity and theoretical basis for new modes of exchange.

Market design

Market Design is a branch of game theory, a field of economics that examines the strategic decision-making of intelligent, rational actors. According to game theorists markets have 'rules of the game': if the rules provide the right incentives, economic actors, behaving rationally, will follow these rules in order to maximise profits. However, as rational actors they will also subvert the rules where the incentive to do so exists. In effect Market Designers recognise that markets exist within existing social structures, including for example political and legal systems. This differs from the neo-classical understanding of markets, which posits markets as without rules or 'free', and as perfectly competitive.

Game theory points to how rational economic actors respond to the incentives provided in specific scenarios, arguing that they will cooperate if there is an advantage in doing so (Myerson 1991). Game theory has become an important way of understanding monopolisation and collusion, with Market Design emerging as a means of fixing markets to promote competition, or 'creating markets where there were none' (Roth 2007: 1).

Market Design brings renewed attention to critical issues, which Milgrom (2011: 311-319) outlines as:

- Product definition – what is the commodity and how should it be defined?
- Messages – how do participants communicate within markets?
- Incentives – the trade-offs between the incentives provided for truthful reporting
- Linkages among markets – how trade in different goods are linked.

Product definition is important in the context of supply of affordable apartments. Currently, apartments are produced as commodities (with investors making up around 80% of sales), rather than as homes for owner-occupiers. This means investors are the target of 'messages'. Communication is largely one-way (there is much advertising) but few would-be owner-occupiers have the opportunity to communicate their preferences. As we have already mentioned and will return to shortly, lack of information disclosure and truthfulness is a multi-faceted problem. Finally, how trade in different goods are linked draws our attention to how apartment development is a means by which land speculation can be realised (reflecting how housing and land are commodified), and how this speculation is highly detrimental to housing affordability. These issues draw our attention to how this market is 'wrong', and why it needs to be 'fixed'.

Taking the understanding of markets as embedded in wider structures, Market Design posits markets as 'constructions' that have been designed and which have rules that evolve over time in response to the economic environment (Roth 2002). This presupposes that there is no single market design or construction. This too is a departure from neo-classical economics, which suggests a (simple) universal design.

For our purposes we focus on a specific design, 'two-sided matching markets':

One of the main functions of many markets and social processes is to match one kind of agent with another: e.g. students and colleges, workers and firms, marriageable men and women. [...] A market is two-sided if there are two sets of agents, and if an agent from one side of the market can be matched only with an agent from the other side. (Roth, n.d.)

Ideally in a matching market no agents should be left on opposite sides of the market that were not matched to each other but would both prefer to be. Marriage is the most often cited example of a two-sided market. Just as matchmakers are used to connect potential marriage partners, two-sided matching markets rely on a market manager or clearinghouse to coordinate agents on both the demand and supply sides (Roth 1984). Matching markets differ from the neo-classical understanding of markets through having this 'visible hand' of the market, which plays a key role in aggregating the agents on both sides of the market who are required to formally hold membership of the market itself. In effect, the market has a boundary. This explicit membership and aggregation into a demand-side pool and a supply-side pool resolves the critical issue of the search. In many matching markets the actual matching is dependent on algorithms to process

preferences to make the matches. The algorithms required for this process started being developed well before the advent of the Internet (with the most significant contribution by Gale and Shapely (1962)). The insights of their work were progressed to create a matching market in live-human kidney donation (in the mid 2000s) and intern placements in the US (in the early 1990s) and are currently being investigated for kidney donation programs and child care placement in Australia (Centre for Market Design 2014)

For a properly functioning two-sided matching market there are three prerequisites: 'Thickness', 'Safety' and a lack of 'Congestion' (Roth 2007; Gans 2012). The first, thickness, refers to the need for a large number of buyers and sellers so that satisfactory outcomes for both sides of the transaction are enabled. Essentially there must be plenty of activity to make membership worthwhile. The second condition is that the participants must be safe. Success is highly reliant on both buyers and sellers having the confidence and incentive to reveal or act on the information they hold. 'When a good market outcome depends on disclosure, as it often does, the market must offer participants incentives to reveal some of what they know'. That is, people need to believe 'transactions will actually take place on the terms agreed' (Gans 2012). Finally, the market needs to avoid congestion. Transactions need to be conducted efficiently and quickly, 'giving participants enough time – or the means to conduct transactions fast enough – to make satisfactory choices when faced with a variety of alternatives' (Roth 2007: 2).

The Internet, computers and algorithms have been critical in achieving the requisite efficiencies to avoid congestion in newly emerged markets such as Uber, the peer-to-peer car ride service that matches people seeking a lift to those offering one. The issue of safety

is critical, both in terms of the monetary aspects and also for personal safety, and property protection for services such as AirBNB. But neither of these services would be successful without large, active memberships that ensure services are available whenever demanded (thickness).

A Smart Housing Market

Returning to apartment development, lack of information and information disclosure is an impediment to the proper functioning of the market:

In real estate and construction...information is often relatively poor quality and expensive, if not impossible, to acquire...knowledge is fragmented and information in many real estate and construction contexts is asymmetric between parties to negotiations and exchanges, in the sense that one person or agency knows something that another does not and often has no incentive to reveal what it is...it can be said that real estate and construction processes are associated with much private knowledge rather than with a prevalence of public information that is available to all at low cost. Information and its lack consequently are likely to have considerable impacts on the organisation of activities.' (Ball 2008: 13-14)

Creation of a formal matching market for new apartments (what we call a 'Smart Housing Market' (SHM)) would require buyers and developers to reveal their information, not just to identify matches but also to establish reputations that can foster trust between the parties. Indeed a SHM would permit information being accessible to the market that is not currently obtainable, for example, buyer indication that they will be actively looking to purchase in two years time.

Tactical withholding of information exacerbates problems associated with pre-sales, rendering the pre-sale process unsafe. The buyer, as a rational agent, has strong incentives in certain circumstances to avoid settlement, and the developer is incentivised in some circumstances to abandon projects (such as when finance is withdrawn). If both buyer and developer were more certain that settlement would take place as agreed, much of the development risk would be removed. Greater disclosure, and more attention to consumer preferences would enable better alignment of interests.

What would constitute thickness in a SHM? Experimental economic analysis by market designers would need to be undertaken to ascertain the requisite number of buyers, sellers and transactions needed to ensure participants are more satisfactorily served than by the current model. As housing is often purchased only once or twice in a lifetime there would be a high dependency on recruiting new buyer/members, who presumably would be attracted by the superior outcomes obtained by previous buyer/members. It is easy enough to envisage the SHM being successful if a large majority of the existing market actors participated. However, how small could it be, and is there room for competition? These questions cannot be answered here.

Congestion in relation to the SHM is less likely to be a result of inadequate information and communications technology than for those markets where there are a high number of transactions. Client relationship management would be central and would probably need to be relatively individualised and hands on. Development by definition has significant timing issues and buyers would still probably need to wait for the right opportunity (and even be subject to ballots where there is over-subscription) and then wait for project

commencement and completion. Rather than being a highly automated system a SHM is likely to be a hybrid of technological interactions and human engagement. Even where there are not a great number of transactions, the need to deal directly with buyers and sellers could result in delays that mean there is drop out. The benchmark however is the current system, which offers very little choice to buyers.

The potential for aggregation of buyers to provide savings and greater choice has been recognised by the market and is the thinking behind internet-based services like Citiniche, a housing supply/demand aggregator recently established in Melbourne. Founder Ivan Rijavek (2013) argues development risk and costs can be reduced and affordability improved by matching housing demand to supply in a more direct way. Citiniche is however a tentative step and it remains to be seen whether it will achieve these aims.

We have examined the economic problems associated with the current apartment development model, which manifest as high search costs, elevated risk and inadequate competition. Mainstream economics is well able to identify such problems. However, it is when Market Design is applied that the significance of these problems is concretely revealed. Whilst unexplored within housing studies, and the social sciences more generally, Market Design provides the underlying transformative economic framework for the many new business models that have emerged since the advent of the Internet. Just as mainstream economics commonly forms a theoretical foundation for social science inquiries, Market Design can be expected to add depth to both empirical and theoretical understandings of the structures of housing provision.

Deliberative development

Housing supply innovation requires economic actors who are able to commit to the supply of affordable housing and the most obvious candidates are consumers themselves. 'Deliberative development' is where a group of intending owner-occupiers becomes the proponent of an apartment development in place of the developer. Such 'self-build' apartments, can deliver better quality and design of housing, together with cost savings (Lloyd *et al.* 2015). Deliberative development in Germany has demonstrated consistent savings and better housing product (Ring 2012). In Germany, 'self build' or *Baugruppen* projects have been delivering apartments at around 75% of the market cost for many years (Lloyd *et al.* 2015; Ring 2012). Unlike speculative-based developments, these dwellings are tailored to suit the diversity of households involved and embody other collective ambitions, such as higher environmental performance.

Once the development is completed, individuals have title to their own dwelling with common property managed by the equivalent of an owners' corporation (deMaddalena and Schuster 2005). Architects specialise in providing design services, project management and support for collective decision-making. Some German governments actively facilitate deliberative development by designating state-owned land for development in this way, and subdividing appropriately sized lots in brownfield redevelopment precincts (de Maddalena and Schuster 2005).

In Australia, there is one publicly evaluated example of deliberative development (undertaken in Fremantle, Western Australia), which demonstrated cost savings similar to the German cases (Dolin *et al.* 1992). Completed at the same time as a conventional speculative

development next door, the property value of the deliberative development has since far outstripped the value of the neighbouring speculative apartments (Geoffrey London 2012, personal communication). A more recent study, examining whether deliberative development would be able to obtain development finance, noted the limited extent of deliberative development in Australia to date reflected considerable financial barriers, but concluded these barriers could be addressed if support was provided, with the community housing sector being one logical collaborator to overcome equity and loan security requirements (Sharam *et al.* 2015).

Deliberative development overcomes both the search problem and the inadequacy of the pre-sale contract in confirming commitment to proceed. As development cooperatives or syndicates, deliberative development requires that buyers become project proponents, so the group must be formed and formalised as a legal entity prior to land acquisition. In the absence of a SHM, it is likely these groups would reflect existing affinities, interests, or social status. This in turn is a social process that acts to bind the members together and increases their commitment to the project. Further, as households seeking a home, they are psychologically invested in the project, unlike investors who mainly seek capital growth and, as indicated, are willing to forfeit deposits if the financial returns of their purchase look shaky at the point of settlement. Moreover, as proponents, deliberative developers are required to provide equity rather than a pre-sale commitment, although financiers view this contribution as though it were a pre-sale (Sharam *et al.* 2015). Speculative developers in Australia, on the other hand, are required to hold pre-sales deposits in escrow, so these deposits are not regarded as equity. Each member of the deliberative development cooperative is legally liable for the cooperative so has

the incentive to ensure the project is successful. Members, rather than walking away from projects, would need to sell their share in the cooperative. Again, aggregation, through having a waiting list of buyers, provides some degree of insurance when members need to make unplanned exits from schemes.

Innovation in financing

As indicated earlier, deliberative development also requires financing. We found that development financiers are willing to consider such projects but their financing parameters, for equity and security in particular, make it difficult currently for moderate-income households to pursue the deliberative model.

We found that financiers would expect deliberative development proponents to contribute between 25% - 40% equity to a project, would impose a loan to value ratio (LVR) of 65%, and require the project to deliver a 20% profit on costs. Provision of security is a difficult issue, as non-home owning households tend to have few assets they can use as security. Financiers were very concerned about reputational risks if the bank were forced to foreclose on a project. More optimistically, the financiers view such a project as having 100% of pre-sales (Sharam *et al.* 2015).

An LVR of 65% has implications for the equity requirement. Assuming a total cost per apartment of \$400,000 and a hypothecated profit margin of 20%, a market valuation upon completion would need to be at least \$480,000 ($\$400,000 \times 120\%$). An LVR of 65% therefore suggests the financier would lend \$312,000 ($\$480,000 \times 0.65$) of the forecast \$400,000 construction cost per apartment, thus requiring an equity contribution of \$88,000 per apartment. The minimum equity

contribution in this case (25%) would be \$100,000. A deposit for a mortgage is 10% or less so this equity requirement and LVR represents a significant barrier. The need to reference market value (reflecting the probability dwellings could be quickly sold on if the banker had to step in) pushes projects to locations with higher land value, thus undercutting affordability.

Financiers suggested the introduction of a guarantor, such as government, would result in a more favourable LVR and thus lower the equity requirement threshold. An alternative to a government guarantee would be access to other asset rich balance sheets. Community housing organisations (CHOs) were identified as a possible provider.

CHOs in Victoria, for example, build and manage social housing for low to moderate-income households. At June 2013 the Victorian community housing sector held \$2.5 billion worth of assets with interest bearing debt of only \$309 million (DTF, 2014). Gearing is modest as revenue is limited by the requirement to provide affordable rent. In short, the sector is asset rich but income poor. Therefore the balance sheet of a CHO could be used, effectively on a fee for service basis, as security for obtaining finance for deliberative developers, either via a financial guarantee provided to bankers or the CHO borrowing on the behalf of the deliberative developers. This would overcome the critical problem deliberative developers have of providing sufficient collateral. Fees generated by the CHO from this activity could be used to support social housing development and/or services.

Member-owned banks (as funders of social housing) were particularly supportive of CHOs playing this role, and could foresee mixed-tenure developments (combining deliberative development and social

housing) with the deliberative development 'pre-sales' reducing the development risk. In this way, mixed social housing/ deliberative developments would reward private house owners willing to have social housing tenants as neighbours, with lower housing costs. This could also mitigate some community opposition to social housing provision, and would achieve the social diversity desired by mixing tenures. Government or philanthropy could establish a guarantee in the form of a revolving social investment fund to support this type of development.

Social impact investors are another potential source of funds. While their lending criteria are likely to reflect those of mainstream development financiers, the remit of social impact investors includes social returns on investment. The central issue here becomes risk mitigation rather than the cost of finance.

Practical and policy implications

Fostering deliberative, owner-initiated apartment development could usefully serve two broad housing and urban policy objectives:

Expand and diversify the market for apartment living

- Lower the entry threshold for home ownership by avoiding some of the costs associated with the current supply-driven market (up to 25%), making housing more affordable
- Offer a greater variety of dwelling types to prospective home owners, including the possibility of family-friendly apartments, and enable consumers to make genuine choices

- Enable greater housing diversity within each development through opportunities for the individualisation of dwellings and tenure mix
- Present a viable option to 'age in place' through downsizing affordably in a broader range of locations

Better manage urban growth

- Enable residents and local communities to become agents of urban consolidation and change, not just its opponents, by increasing housing densities in established residential areas by choice rather than imposition
- Improve the design quality of apartment development by removing the short-term sales and profit imperative from the development process, allowing use values and other demand-side factors to more directly influence outcomes
- Help build community and create 'places' by putting urban change into the hands of people who will have an on-going stake in the liveability, sustainability and success of their neighbourhoods

Without state support, deliberative development projects currently face significant barriers. In order to obtain development finance the project proponents need to demonstrate expert project management and provide evidence of a good construction track record. Consulting project managers and/or architects can take on this role of coordinating the various consulting professionals in the absence of the developer. In Australia these professionals work for developers on a fee for service basis and could do the same for the development cooperatives. Likewise, appropriately experienced and credentialed construction and/or project management firms could be engaged on a fee for service basis.

Important in all this is the role of the 'market manager' who oversees the smart housing market and in effect brokers the relationships between the parties involved. To hold the trust of those parties and to ensure delivery of the public benefits that a deliberative development process makes possible, this role is best served by being situated with a not-for-profit entity.

Conclusions

Following the insights of Market Design, the economic inefficiencies of the traditional pre-sales process can be overcome by aggregating buyers. This would also provide the opportunity to deliver more tailored housing products. The quest for affordable, quality apartments requires economic actors who are willing and able to commit to the supply of such housing and the most obvious candidates are consumers themselves. This understanding has informed international deliberative development groups which have established a credible track record of reducing the cost of new apartments while delivering quality, sustainable homes attractive to owner-occupiers.

This paper has had two main objectives: firstly, to make explicit the current structure of provision for apartments in Australia. This is in order to reveal economic problems not typically considered by policymakers or innovators in the pursuit of solutions for Australia's urban housing policy dilemmas. These insights are just as relevant for many other countries outside Australia. Secondly, this paper proposes innovation in terms of how we think about attracting and managing demand for housing by making explicit linkages between Market Design theory and the traditional structure of provision for apartments in Australian cities. In so doing, it describes a pathway from the current, near exclusive, reliance on speculative development to increase housing supply towards a more deliberative development process better suited to the delivery of policy goals and meeting local housing needs.

While the intention here has been to find a way of delivering apartments that are more affordable and of a better standard, the implications may yet be more profound, with the prospect of more orderly development practices serving to dampen speculative booms and busts. This research seeks to make a contribution to debates about affordable housing and sustainable urban development and proposes a practical step towards delivering much needed reform to housing provision in Australia.

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