# URBAN LAND SUPPLY, GOVERNANCE AND THE PRICING OF LAND

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## ABSTRACT

Recent metropolitan strategies for Australian capital cities propose to curtail outward urban expansion and increase the density of existing urban areas while generally retaining low densities on new outer urban greenfield developments. The use of urban growth boundaries (UGBs) has probably been the most controversial element of these strategic plans. Central to this controversy have been competing positions of the impact of UGBs on land price and housing affordability, in particular the claim that UGB's increase the cost of housing by limiting the supply of new land for housing or by imposing costs through bureaucratic planning procedures.

The claim that UGBs raise land price has been a critical factor in influencing government decisions to increase the supply of land on the fringes of Australian cities. All Australian state governments have demonstrated sensitivity to this claim and receptivity to developer advocacy. Yet the expansion of outer urban land supply contradicts a fundamental intent of metropolitan strategies, that of growth limitation. In this paper we review the purposes of UGBs and their potential impacts on land price, drawing from an international literature. We examine evidence of land price trends and their relation to UGBs drawing from a sample of detailed land price data, using Melbourne as a case study. Within this analysis of the potential for and evidence of price impacts of the UGB, we review Melbourne's policy framework, including the ongoing revisions to the city's UGB. We argue that an understanding of the impacts of UGBs by Australian governments is essential when considering policy responses and that a better understanding of the potential uses of UGBs would lead to policies more consistent with the stated intent of metropolitan strategies.

## Introduction

Competing positions on the impact of planning regulation on land price and housing affordability have been central to the controversy over urban land price, in particular the claim that land use planning increases the cost of housing by limiting the supply of new land for housing. The introduction of urban growth boundaries (UGBs) by most Australian state governments has caused particularly controversy over whether these boundaries are limiting land supply and increasing the price of land. In turn, claims about the impacts of UGBs on land price are a critical factor in influencing government agendas and policy responses to land supply and the rate of land release for new development.

The ongoing government provision of land on the fringes of Australian cities demonstrates the sensitivity of governments to the claim that UGBs affect land supply and price, their receptivity to advocacy on this issue, and their ideological commitment to neo-liberal principles applied to housing markets. Yet the continued expansion of UGBs contradicts a fundamental intent of metropolitan strategies - that of growth limitation and diversion of growth to established metropolitan areas. In this paper we examine evidence of land price trends in Melbourne and their relation to the UGB using a sample of detailed land price data. Within this analysis of price impacts of the UGB, we review Melbourne's policy framework, including the ongoing revisions to the city's UGB. We argue that an understanding of the impacts of UGBs on land price is essential when considering policy responses and that a better understanding of the potential uses of UGBs would lead to policies more consistent with the stated intent of metropolitan strategies.

There is almost no reliable Australian research on the relationship between UGBs and land price (see Gurran, 2008). Differing urban circumstances, the consideration and weighting given to different variables, and underlying value positions contribute to

differential findings. The key variables in studies of UGB impacts on price are land supply, residential density and the rate of land release. These variables are interconnected. Government policies, such as housing subsidies, taxation policies and interest rates influence demand and affect prices (Colebatch, 2003). Other variables which can influence land price are transport provision, pricing mechanisms (such as congestion pricing), urban form particularly whether cities are monocentric or polycentric and locational factors such as distance of land from city centres (Grimes and Liang, 2009), land banking by developers or land owners, social factors such as income, population and dwelling density, and amenity factors affecting locational decisions (such as coastal or riverine areas). High continuing demand for housing, purchasing power, population and economic growth, flexible lending policies, the first home-buyer grant and increased local council requirements have underpinned the rise in land and construction prices (DSE, 2003). Demand for housing has been driven partially by Commonwealth taxation policy mechanisms such as negative gearing and capital gains tax (Productivity Commission, 2004). Many claims about the impacts of UGBs appear to not adequately control for the price influence of such variables.

Land supply within a UGB is the sum of land available for development on designated greenfield sites (typically on the urban fringe) and redevelopment in the existing metropolitan area (on brownfield sites, within activity centres or dispersed across a metropolitan area), multiplied by urban density. In addition, metropolitan land supply is often augmented by land available for dwelling construction in satellite towns or regional centres used by commuting users of metropolitan services. UGBs and green belts therefore may not significantly restrict the available land supply even if metropolitan supply is limited - provided that the density of development is increased and a regional approach is taken to land supply. For example, the London metropolitan and green belt boundaries have hardly changed for over 50 years but extensive links have been forged with regional centres.

**Melbourne's UGB and its critics**

The Victorian government first introduced a UGB in 1971 in Melbourne's third strategic plan, *Planning Policies for the Melbourne Metropolitan Region*. In this plan, the Melbourne and Metropolitan Board of Works provided for a population of five million people by 2000, to be located in seven urban growth corridors separated by green wedges (MMBW, 1971). The Melbourne UGB has existed therefore, albeit in a non-legislated form, for almost 40 years. Wale (2003) argues that the 1971 plan tried for the first time in Victoria to change landowner expectations and eliminate land speculation in rural areas. Four statutory non-urban zones were put in place to prevent the introduction of any urban related uses. These zones "removed urban expectations from major portions of the Metropolitan planning area" (MMBW 1977, 12).

The 2002 metropolitan plan, *Melbourne 2030,* therefore did not in effect 'introduce' a UGB, but altered the means of protection from the use of statutory planning tools to legislative control. Initially the UGB was reaffirmed only as policy without any statutory implementation. However, in May 2003, the government passed the Planning and Environment (Metropolitan Green Wedge Protection) Act which required parliamentary ratification for any change to the UGB outlined in the 2002 policy.

The reaffirmation of the UGB in *Melbourne 2030*, aroused extensive criticism by landowners and developers for three reasons. Firstly, legislative protection notionally increased the difficulty of amending the UGB by requiring the approval not only of local councils, planning panels and the planning minister, but of both houses of parliament. Legislative protection led to the perception that the government would not or could not extend the boundary.

Secondly, the Kennett government between 1993-1999 introduced a neo-liberal model of governance which reduced the role of government and increased the influence of private land markets. This neo-liberal model led to the introduction of a standardized, deregulated planning system, a rejection of strong policy directions and an emphasis on development facilitation (Buxton, Goodman and Budge, (2005). A legislative UGB aroused antagonism from those who expected that a deregulatory approach to land use planning would continue. Thirdly, critics of urban consolidation opposed as a matter of principle the compact city model inherent in the introduction of a legislative UGB. Cox (2005:57), for example, surmises that:

> Australian urban areas have adopted so-called 'smart growth' or 'urban consolidation' policies that ration land…Rationing raises prices and rationing land raises house prices. Urban areas that have avoided land rationing policies have retained far more affordable housing.

Gleeson and Lowe (2000), argue that property interest groups have pursued a systematic campaign against planning and land regulation in Australia. Development groups were quick to attribute the neo-liberal restructuring of Victoria's planning system in the mid 1990s to their lobbying against prescriptive planning. For example, the Property Council (1996) interpreted the introduction of the neo-liberal planning structure as follows:

> Rob Maclellan, Victorian Planning Minister, gave the property industry an early Christmas present announcing a bold package to streamline the State's Planning System. By adopting 90 per cent of the proposals in the Property Council's blueprint – *Planning for Change*, Victoria has secured its reputation as the nation's leader in planning reform….the package simplifies Victoria's development control system [and] members can expect reduced approval times, lower holding costs and greater flexibility for developers.

From 2003, a range of Australian critics argued that housing affordability was reduced by regulatory planning costs and higher land costs caused by UGBs limiting the supply of land (Productivity Commission Inquiry, 2004; Menzies Research Centre, 2003; Moran, 2005; Cox, 2005). This claim ignores the long standing existence of the Melbourne UGB prior to the legislated UGB in 2003. Birrell and Healy (2003) argued that "supply constraints are likely to emerge from the Bracks' Government's decision to artificially restrict development on the suburban frontier". Birrell et.al (2005:8) claimed that the UGB included in *Melbourne 2030*, "contributed to the sharp price increases for broadhectare land within the UGB" because it caused developers to lose interest in land outside the UGB and compete for remaining land parcels within the UGB. The HIA (2008:2) claimed that "the UGB and its rigidity has significantly contributed to the higher cost of land for new housing. This flows directly to a reduction in housing affordability". Early in 2003, the Urban Development Institute, the Housing Industry Association and other development groups and commentators claimed that the introduction of the Melbourne UGB in 2002 led to a 30 per cent increase in the price of land on the urban fringe (Millar, 2004; Underwood, 2003). Moran (2005: 26) alleged that:

> The Melbourne 2030 Strategy has essentially replaced zoning as the determinant of costs. Soon after the UGB was introduced, land bought inside it, say, around Whittlesea, was selling at some $600,000 per hectare where previously before the boundary de facto rezoned it as housing it cost $150-200 per hectare.

Moran (2006:4) summarized this claimed causal connection between planning systems, government induced land shortages, and land price increases:

> Planning systems are in place across all Australian urban areas. Invariably, they reduce the quantity of land that is available for conversion into housing. These restraints are accompanied by others which restrict the development of shopping centres, prevent subdivisions of rural land and often require developers to expend resources on features that their customers might not value as highly as they cost…If Australia were applying the liberal systems to development that prevail in Texas for example,

> a house/land package price would at least halve. Australia's ration-induced high prices for new developments on the periphery lift prices throughout the city.

The former Prime Minister, John Howard, repeated this claim almost verbatim during a debate on land pricing in 2007 as part of an attempt to blame states for a lack of services and alleged price increases for outer urban land. The "Great Australian Dream" campaign by lobby groups in Australian against planning, on the grounds of housing affordability outcomes, is described in more detail by Smith and Marden (2008).

Criticism of urban limitation policies and claims of land supply shortages has also come from specific developers with land holdings outside the UGB. Most of the land adjoining the four urban growth corridors is owned or optioned by development companies (DPCD, 2008). These companies then pressure the government to remove, or extend the UGB to amend the rural zoning for their land holdings to an urban designation. For example, in 2005, Jayaland Corporation sought approval for a major housing development in Rockbank in Melbourne's north-western green wedge between Caroline Springs and Melton. Jayaland drew on *Melbourne 2030* urban consolidation principals such as smaller lot sizes, efficient provision of infrastructure, and increasing the supply of affordable housing to justify its attempted breach of planning policy (MacroPlan Australia, 2005). Similarly, in 2007, developer Delfin Lend Lease lobbied for an extension to the UGB to include the Lockerbie estate in Kalkallo north of the Hume growth corridor area. Delphin Lend Lease proposed a $4.5 billion project on the site, with 13,000 lots or 35,000 people citing urban consolidation principals such as transport oriented development and sustainability. Subsequently, the recent extensions to the UGB, the *"Melbourne @ 5 Million Investigation Areas"*, include both sites inside the UGB as part of Melbourne's growth corridors (Government of Victoria, 2008).

**Land prices and Melbourne's UGB**

The paper now places this criticism in the context of trends in land prices around the UGB in Melbourne. Included in this analysis is a sample of detailed land sales data compiled to observe spatial and temporal differences in land prices in properties sold before and after the 2002 adoption of the UGB, and inside and outside Melbourne's formal UGB. A number of other secondary data sources are also used in this section, including information from the Growth Areas Authority, the Victorian government *Urban Development Program* reports for various years, and data compiled by government agencies and the *Melbourne 2030 Audit*.

The land sales dataset comprises a sample of vacant residential and farming land sales, drawn from a snapshot version of property valuations for the state of Victoria. The Melbourne region was defined by limiting the dataset to the 40 Local Government Areas (LGAs) inside the Melbourne Statistical Division (MSD) and immediately abutting the MSD. The dataset refers to 'vacant land' or 'farming land' rateable properties which have a record of their last sale, and represents a point-in-time of property valuations in 2004. Rateable properties comprise the majority of properties. The unit of analysis is a derived standardised per metre measure of land price, the price per square metre of vacant land expressed in constant (2007) terms. Using data at the level of individual properties, where possible the location of each property has been geocoded to a specific location so that each could be identified as lying inside or outside the UGB. Trends before and after the introduction of the Melbourne 2030 UGB are compared, over the period 1994-2004, for the sample. The data covers the interim (2002) and first legislated (2003) UGB, but not subsequent UGB policy. Thus trends from 2004 were not examined.

The analysis is based on key characteristics in the valuations records for each property including the last sale price of each property, combined with the property size, and the

land use category. High coverage levels, reliability (given that the records are compiled for revenue purposes), and the inclusion of property characteristics are the advantages of this source data. A disadvantage is that there is only one record per property and sale data refers only to the most recent time each property was sold. Thus repeat sales data is lost. The sales information is a sample only, and effectively the inverse of a repeat sales index.

As shown in table 1, the total number of land records in the sample is 94,146. Of these, around half (45,043 or 48%) are vacant residential land records, with the remainder comprising farmland records and developed land last transacted as farming or vacant residential land. Over half (63.1%) are located inside the UGB, with 28.4% outside the UGB and the remainder (8.5%) not being reliably pinpointed to a location (identified as 'no geocode'; in subsequent tables referring to 'inside' or 'outside' the UGB these properties are not referred to).

**Insert table 1 here**

Table 2 shows that the standardised price of land per square metre in the Melbourne region has risen markedly in real terms both inside and outside the UGB. Over the period 1994 – 2004 land within the UGB was consistently much more expensive than land outside the UGB, with land outside the UGB (at $2.80 per square metre) priced at 3.7% of land inside the UGB ($75.30 per square) in 1994. The price of land outside the UGB increased as a proportion of land inside the UGB, however, to 24.8% in 2004. These figures are gross figures which include inner, middle and outer urban land values of all vacant types inside the UGB, and do not differentiate between coastal and other high amenity land, farmland, rural-residential and vacant land in townships outside the UGB.

**Insert table 2 here**

Tables 3 and 4 show that in percentage terms, the rate of increase in land prices was considerably higher outside the UGB than inside the UGB following the growth boundary's introduction. However, when considering the comparison between land inside and outside the UGB only for growth area municipalities - thus excluding coastal areas and other high amenity areas - table 5 shows a substantially lower figure. Land inside and outside the growth areas grew in value at comparative rates both before and after the introduction of the legislated UGB. Tables 3 and 4 also show that land in growth areas rose in value by 28.4 per cent over the 1998-2000 period (from $83.2 to $111.5); by 32.7 per cent over the 2000-02 period preceding the formal UGB (rising to $144.2); and by 82.0 per cent over the 2002-04 period following the 2002 release of the UGB policy and the 2003 legislated UGB (rising to $226.2). The price of land situated outside the UGB rose in smaller amounts, but from a lower base and in greater percentage terms. Over the period 1998-2000 land outside the UGB in growth area municipalities rose in value by $1.4 per square metre, or 38%. Over the period 2000-02, preceding the adoption of a legislated UGB, land outside the UGB rose in value by $4.0 per square metre or 78%, and in the period following the formal UGB, 2002-04, by $3.3 per square metre, a 36% increase although from a far lower base.

**Insert table 3 here**

**Insert table 4 here**

**Insert table 5 here**

Residential land prices have converged more so than have farming land prices. Tables 2 and 3 illustrate the wide discrepancies in value between farmland and residential land and

between both farmland and residential land inside and outside the UGB, controlled for land size and presented in real terms. Between 1994-2001, farmland inside the UGB rose by about 150 per cent, while outside the UGB by about 50 per cent; while between 2001 and 2004, farmland inside the UGB rose over three times, while outside it almost doubled in value. Farmland increased in value to a much greater extent inside than outside the UGB both before and after 2002.

The interim *Melbourne 2030* Audit Analysis (DPCD, 2007) confirmed these findings on land price when tracking new house and land price for Melbourne. Its analysis shows that this price has remained "relatively stable following the spike when the Goods and Services Tax was introduced in 2000 (DPCD, 2007:42), and the final audit (AEG, 2008) confirms this position (see figure 1).

**Insert figure 1 here**

Spatially, the decay curve of prices inside and outside illustrates a steep link between land prices and the central city (CBD): overall, the key inflation and demand pressures on land appear to be in Melbourne's inner, established suburbs (see figures 2 and 3). As shown in figure 3, land prices also have increased more in the established middle suburbs than they have on the urban fringe or in peri-urban areas. (Small sample numbers of inner suburban land should be borne in mind when considering the inner Melbourne land price trends shown in this illustration). Note that 'outer suburban' and 'peri urban' are classified here by municipality and not by location in relation to the UGB. The greatest increases in prices for land outside the UGB occurred in the municipalities of Bass Coast Shire and Greater Geelong. The increases for these municipalities would have been influenced by their coastal locations.

**Insert figure 2 here**

**Insert figure 3 here**

## Discussion of results

In this section we assess the above results against Urban Growth Boundary theory. We also discuss the difficulties involved in proving the nature of relationships between UGB policy and urban land price outcomes in Melbourne. These limitations are problematic given that the State government has continually extended the despite arguing that outer urban land shortages do not exist for Melbourne.

Below we look at the clarity of distinctions made between urban and non urban uses; at the overall integrated or regional supply of land; and at the degree of divergence between land prices inside and outside of the growth boundary. UGB theory suggests that UGBs, firstly, are intended to increase the demand for residential land inside the UGB though maintaining a sufficient land supply so not unduly increasing its price, and secondly, control the price of rural land outside the UGB through a strong demarcation between permissible urban and rural land uses (Nelson, 1985, Whitelaw, 1980). How do the results above fare when assessed against these criteria?

*Clarity of urban and non urban uses*

Progressive additions to urban growth corridors after 2002 (see figure 4) have encouraged land speculation outside the UGB bordering corridors by eroding the UGB principle of a clear demarcation between urban and rural uses. There are two types of UGB operating on the fringes of Melbourne, a managed UGB directing orderly, sequential development and

infrastructure provision adjoining the urban growth boundary in the designated growth areas, and an inflexible one for the remainder of the UGB. The government stated in 2003 that the UGB adjoining the growth corridors would be expanded to provide "a guaranteed 15-year supply of land for development that will be released as needed" but that over most of the UGB the boundary was "settled…"Future growth will be directed into designated areas, to better safeguard our green wedge land and deliver greater efficiency in the delivery of infrastructure and services" (Delahunty, 2003:1). The commitment to expanding the UGB around growth corridors reinforced land speculation in adjoining rural land in the expectation of windfall gains when the UGB was extended, bidding up the land price because of an expected urban related value. These expectations have been amply realized. Ironically, the primary effect of the UGB around growth corridors has been to indicate to development companies and landowners where rural land speculation immediately outside the UGB will be most profitable. These signals weaken the clarity of distinctions made between urban and non urban uses and are inconsistent with the purposes of UGBs.

**Insert figure 4 here**

Once farmland is included inside the UGB it will normally be converted to urban uses so will be expected to increase in value. In this sense the very low post-UGB increases in the value of farmland outside the UGB, and the differential values between farmland inside and outside the UGB are consistent with UGB theory. Land price growth outside the UGB has been concentrated into particular areas. It appears that the overall increase in land values outside the UGB is due in part to substantial rises in prices for land adjoining corridor boundaries and in desirable amenity areas, particularly coastal townships. Rural land values are also affected by the strength of rural land controls outside the UGB. The introduction of the UGB did not affect the extensive existing fragmentation of rural land

into varying lot sizes with differential land values, in particular the large number of rural-residential lots. This represents an incremental blur in the distinction between urban and non-urban uses, independent of the introduction of a formal UGB. The smaller the rural lot size, the higher the square metre value. Land sales of such smaller lots affect overall land values outside the UGB. Despite these pressures on price, broad hectare farmland outside the UGB, overall, was resistant to increases during the period of the introduction of the UGB, remaining at only around $5 per square metre. These stable values indicate that the UGB has limited land speculation in areas where the UGB appears settled, by seeking to eliminate a speculative urban component from rural land values.

*Integrated supply of land*

Proponents of the view that UGB's increase the price of outer urban land argue that UGB's impose a barrier to the absorption of undeveloped farming land into the expanding urban area, so limiting the supply of urban land. However, a causal claim cannot be made between the introduction of a formal UGB and rural land prices in the Melbourne region for four reasons.

Firstly, Australian state governments do not restrict outer urban land supply. Australian state governments are making large amounts of land available for outer urban development. In December 2003, the Victorian government extended the 2002 UGB by 1610 hectares to provide more industrial land in Dandenong South and residential land in the northern Hume corridor; in November 2005 by 11,132 hectares increasing the size of urban corridors by 34 per cent and raising the number of residential lots inside the corridors by almost 45,000; and in December 2008 further increased the corridors to allow for an additional 134,000 dwellings. These extensions of the UGB will accommodate 47 per cent of new dwellings in corridors (Government of Victoria, 2008) contradicting the

*Melbourne 2030* policy commitment to reduce this proportion to 31 per cent from the 2002 figure of 38 per cent by directing 20 per cent of the business-as-usual proportion of urban corridor growth from 2002 to the established metropolitan area. In addition, in March, 2008, the government announced the accelerated development of 90,000 residential lots in the existing urban growth areas and the development of simplified planning measures including the creation of an urban growth zone.

Planned new corridor dwellings therefore have risen from 180,000 in 2004, 225,000 in 2005 at a net residential density of 11 dwellings per hectare, to 284,000 in 2008 at 12.5 net dwellings per hectare. In the 2008 UGB extensions, 41,000 hectares was included in an investigation of which 26,000 hectares is to be added to the urban areas inside the UGB. This ready land supply in outer urban areas has previously led to the Victorian government rejecting claims that the UGB caused an immediate increase in the price of residential land in the growth corridors (DSE, 2003:21).

The government's November 2005 extensions to the UGB provided 25 years land supply at a low average density. However, government analysis of the 2006 census (Government of Victoria, DPCD, 2008) estimated that Melbourne would require 600,000 new households by 2028, about 100,000 more than estimated in *Melbourne 2030*, 316,000 in established areas and 284,000 in growth corridors. Its December 2008 extension of the UGB to allow for an additional 134,000 dwellings will provide a total of about 30 years land supply at the same low average densities. Even assuming that the recently increased rate of population growth is maintained, greenfield land supply in corridors exceeds that of 2002.

The second factor to be considered in an integrated land supply, is the availability of urban land outside areas marked on the urban fringe for metropolitan expansion. The large

supplies of developable land in all state capitals within the existing metropolitan areas have added considerably to the total housing stock. Multi-unit dwelling unit approvals in Melbourne increased by over 700 per cent or threefold to 35 per cent of new dwelling approvals between 1990-91 and 2002-03 to 12,362 dwellings a year (Buxton and Tieman, 2005). The Victorian government estimates that 100,400 dwellings are to be built on 1,380 redevelopment sites in the existing Melbourne metropolitan area in the next 10 years (DPCD, 2008), about one sixth of the estimated number required by 2020. A large land supply capable of accommodating a substantial increased population is available in Melbourne's metropolitan area ranging from progressive development of infill sites, to redevelopment of large underused middle ring western and northern, and established outer suburban activity areas, to more radical proposals such as development over rail lines. Adams (2009), for example, has proposed that the redevelopment of land adjoining selected arterial routes could accommodate over 600,000 new households.

The potential of a regional approach to land supply has not been factored in to land supply calculations by the Victorian government. Successive extensions to the UGB, accelerated land releases within the UGB, market driven increases to the size of regional towns, and the large amounts of land being redeveloped within the existing metropolitan area, have all maintained a large supply of land. The moderating impacts on price exerted by these sources of supply have been seen in the international literature.

The third factor to be considered is the impact on land supply of increased densities in established and greenfield areas. Average residential density substantially affects land supply. Average densities are increasing in established urban areas, particularly in inner areas while outer urban densities remain among the lowest in the world. Low outer urban densities have helped fill designated outer urban growth areas in Australian cities relatively quickly which in turn has led to further pressure to expand UGBs. The

producers of housing are not delivering substantially increased outer urban densities, a range of lot sizes and housing types, or less car dependent more energy efficient urban design, and Australian governments have been reluctant to mandate increases. The Victorian Labor government mandated an average density of 15 dwellings per hectare for Melbourne's urban corridors in 1990 but the Kennett Coalition government removed this requirement in 1993. In 2007, the Victorian government adopted a voluntary code for Melbourne, Clause 56 of ResCode, with few mandatory provisions.

Increasing average densities to 15 dwellings per hectare (the *Melbourne 2030* objective) from 2006, over the 10 dwellings per hectare applying in 2005, and to 20 dwellings per hectare from 2009 would increase dwelling urban corridor dwelling yields by 64 per cent. If the government met the *Melbourne 2030* principle of transferring 20 per cent of the growth planned to 2030 to the established metropolitan area while increasing gross residential density to 15 lots per hectare, land savings would total 46 per cent (Buxton and Scheurer, 2007).

The fourth factor is the difference between land supply and land release. It is important to note the role of Australian state governments in designating future urban land and the process for bringing subdivided lots onto the market. State governments control the direction of development and its sequencing, designating future greenfield areas for urban purposes and including them inside the metropolitan area by extending growth boundaries. The land development industry determines the amount of land released onto the market and its timing, housing type, lot size and subdivision design, and initiates the process for rezoning land for urban uses and gaining development approvals. Developments subject to permit are usually approved by local councils or VCAT, and requiring rezonings by councils and state government on the advice of independent panels. In Melbourne, the process of land release is controlled primarily by six or so large development companies

which own or otherwise control most of the greenfield land inside the UGB (DSE, 2004, AEG, 2008) and the rural land adjacent to the UGB. The large amount of zoned residential land in Melbourne's growth corridors is shown in table 6. The control of large areas of land by so few development companies has led to claims of land banking and price control (Millar, Schneiders and Lucas, 2007.

**Insert table 6 here**

*Divergence*

The announcement of a legislated UGB in 2002 and its legislative introduction in 2003 seems to have exerted no impact on land prices or price differentials between land inside and outside the UGB. This can be seen in the results of price comparisons. The price of land has increased markedly but consistently over a long period in the Melbourne region. Land inside and outside the growth areas grew in value at comparative rates both before and after the introduction of the legislated UGB. In aggregate terms, land price outside the growth boundary increased at a higher rate than land inside the growth boundary after the UGB's introduction. However, most of this increase, as outlined earlier, was in residential land predominantly in coastal and high amenity areas. Farmland increased in value to a much greater extent inside than outside the UGB both before and after 2002. When land types are divided into farmland and residential land, the standardised value of farm land inside the UGB is high compared to farmland outside the UGB, and has increased at a much greater rate. The value of farmland outside the UGB as a proportion of farmland inside the UGB has fallen from around 33% in 1994 to around 10% in 2004. These results are consistent with the theory of price divergence in UGB theory, showing that prices of broadhectare land outside the UGB have not increased unduly despite considerable land speculation there and the existence of liberal planning controls,

However, for residential land, the trend has been different. Residential land outside the UGB increased from around 20% of the value of residential land inside the UGB in 1998, to nearly 60% in 2004. The divergence began in around 1998: thus different land types suggest different patterns, and neither with a clear temporal link to the introduction of a formal UGB. In addition, the value of land declines steeply with distance from the CBD. Higher priced land in Melbourne is located in the inner and middle suburbs and it is these areas, not the urban fringe, that have experienced the more rapid increases in price. The same trend is observable for coastal locations outside the UGB. This suggests that location remains a more significant spatial determinant of price divergence than the UGB.

**Conclusions**

Although land prices in the Melbourne region have increased steeply since the mid 1990s, including within the UGB, it is not possible to prove a causal relationship between the UGB and land price increases in the greater Melbourne.

The evidence does not suggest that regulation raises land prices or that a simple causal connection links land supply and price in Australian cities. Instead, it is likely that a range of factors which have affected markets have influenced land prices. Public land use regulatory authorities in Australia do not routinely restrict land supply but help determine the direction and location of growth. Further, critics attempting to link the legislated UGB to land price rises argue as if the UGB was introduced in 2002 when a UGB has been in place formally in Melbourne since 1971, and informally since 1954. The legislated Melbourne UGB meets the test for successful UGBs in that it has stabilised the value of rural land while not unduly increasing the price of urban land. Low farmland values outside the UGB and high land values in high amenity areas such as the coast point to the

stabilising impact of the UGB on land price and the impact of other factors, such as amenity, on land value. Farmland price increases inside the UGB reflect the expected increase in value resulting from conversion to urban from rural uses. Progressive increases in land supply both on the urban fringe and the existing metropolitan centre have removed land scarcity as a possible cause of price increases. These results are consistent with those expected from UGB theory.

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**Table 1: Sample numbers by land type and location inside / outside UGB**

| Land Type | Inside UGB | % | Outside UGB | % | No Geocode | % | Total |
|---|---|---|---|---|---|---|---|
| Farmland | 586 | 3.9% | 13,678 | 91.7% | 650 | 4.4% | 14,914 |
| Residential | 30,260 | 67.2% | 10,919 | 24.2% | 3,864 | 8.6% | 45,043 |
| House (sold as land) | 28,384 | 83.8% | 2,027 | 6.0% | 3,480 | 10.3% | 33,891 |
| Other (sold as land) | 139 | 46.6% | 126 | 42.3% | 33 | 11.1% | 298 |
| Total | **59,369** | **63.1%** | **26,750** | **28.4%** | **8,027** | **8.5%** | **94,146** |

*Source: valuation records (see text)*

**Table 2: Median price ($2007/Sqm) of land by type, inside/outside UGB, last sale year - Melbourne region**

| | *Inside UGB* | | | *Outside UGB* | | |
|---|---|---|---|---|---|---|
| Year | Farmland | Residential | All | Farmland | Residential | All |
| 1994 | 8.5 | 76.0 | 75.3 | 2.1 | 16.8 | 2.8 |
| 1995 | 6.7 | 76.9 | 76.3 | 1.4 | 14.8 | 2.0 |
| 1996 | 5.4 | 76.9 | 75.8 | 1.3 | 13.2 | 2.1 |
| 1997 | 8.0 | 79.4 | 78.3 | 1.9 | 14.6 | 3.0 |
| 1998 | 10.4 | 89.3 | 88.3 | 1.8 | 15.5 | 3.3 |
| 1999 | 14.3 | 104.3 | 103.6 | 2.3 | 20.9 | 4.8 |
| 2000 | 16.9 | 117.2 | 116.6 | 2.8 | 33.7 | 7.2 |
| 2001 | 19.5 | 128.2 | 127.9 | 3.2 | 43.1 | 12.8 |
| 2002 | 22.7 | 155.3 | 155.0 | 3.1 | 67.7 | 16.4 |
| 2003 | 27.9 | 203.3 | 203.0 | 4.0 | 91.8 | 30.0 |
| 2004 | 49.8 | 238.6 | 238.1 | 5.0 | 138.1 | 59.2 |

*Source: valuation records (see text)*

**Table 3: Median price ($2007/Sqm) of land by type, inside/outside UGB, last sale year – Growth Area Municipalities only**

| | *Inside UGB* | | | *Outside UGB* | | |
|---|---|---|---|---|---|---|
| Year | Farmland | Residential | All | Farmland | Residential | All |
| 1994 | 7.9 | 75.2 | 74.4 | 2.6 | 8.3 | 3.8 |
| 1995 | 9.1 | 75.9 | 75.7 | 2.1 | 7.7 | 2.3 |
| 1996 | 3.0 | 75.3 | 74.5 | 2.3 | 8.7 | 2.9 |
| 1997 | 6.1 | 76.6 | 76.0 | 2.4 | 11.3 | 3.6 |
| 1998 | 6.4 | 83.3 | 83.2 | 2.2 | 13.7 | 3.7 |
| 1999 | 8.3 | 99.1 | 99.0 | 2.4 | 16.6 | 3.8 |
| 2000 | 11.3 | 111.7 | 111.5 | 2.7 | 24.2 | 5.1 |
| 2001 | 20.2 | 121.3 | 121.3 | 3.5 | 18.2 | 6.6 |
| 2002 | 14.8 | 144.2 | 144.2 | 3.7 | 23.6 | 9.2 |
| 2003 | 23.7 | 188.0 | 187.7 | 5.0 | 34.2 | 12.1 |
| 2004 | 65.4 | 226.4 | 226.2 | 6.8 | 39.2 | 12.5 |

*Source: valuation records (see text)*

**Table 4: Increases in land price over 1998-00, 2000-02, and 2002-04, by inside/outside UGB – Melbourne Region**

| | *Inside UGB* | | | *Outside UGB* | | |
|---|---|---|---|---|---|---|
| Year | Price $2007/Sqm | *Increase ($)* | *Increase %* | Price $2007/Sqm | *Increase ($)* | *Increase %* |
| 1998 | 88.3 | - | - | 3.3 | - | - |
| 2000 | 116.6 | 28.3 | 32% | 7.2 | 4.0 | 120% |
| 2002 | 155.0 | 38.4 | 33% | 16.4 | 9.2 | 127% |
| 2004 | 238.1 | 83.1 | 54% | 59.2 | 42.7 | 260% |

**Table 5: Increases in land price over 1998-00, 2000-02, and 2002-04, by inside/outside UGB - Growth Area Municipalities Only**

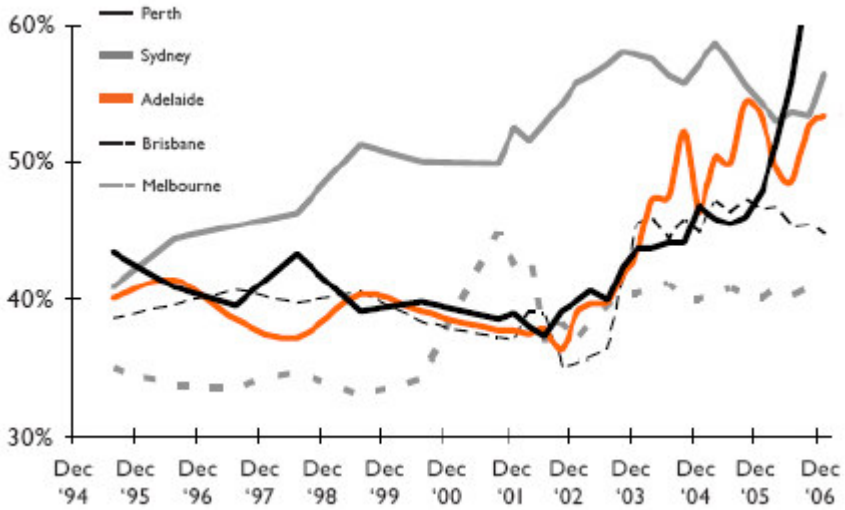
| | *Inside UGB* | | | *Outside UGB* | | |
|---|---|---|---|---|---|---|
| **Year** | **Price $2007/Sqm** | ***Increase ($)*** | ***Increase %*** | **Price $2007/Sqm** | ***Increase ($)*** | ***Increase %*** |
| 1998 | 83.2 | - | - | 3.7 | - | - |
| 2000 | 111.5 | 28.4 | 34% | 5.1 | 1.4 | 38% |
| 2002 | 144.2 | 32.7 | 29% | 9.2 | 4.0 | 78% |
| 2004 | 226.2 | 82.0 | 57% | 12.5 | 3.3 | 36% |

**Table 6: Land supply, Melbourne's urban corridors, March 2008**

| **For 4 urban corridors** | **2004** | **2005** | **2008** |
|---|---|---|---|
| Land available | 15,425 ha | 26,559 ha | 18,600 ha |
| Years supply | 18 years | 25 years | 17 years |
| Lot equivalents | 180,500 | 225,000 | 168,600 |
| Average lot size | 10 lots/ha | 11 lots/ha | 12.5 lots/ha |
| Zoned land | | | 77,000 lots |
| Supply | | | 8 years |

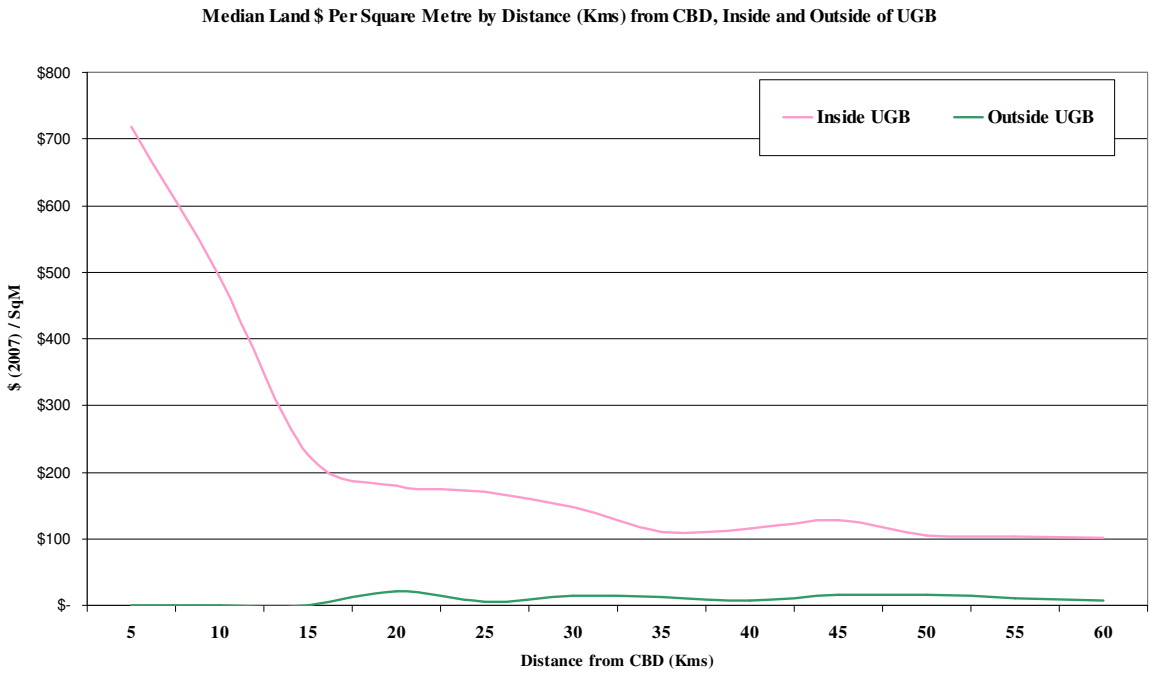
*Source: Compiled from DSE (2004), DPCD (2005), GAA (2008), AEG (2008), UDP (2008)*

**Figure 1: Land as a proportion of new house and land price**



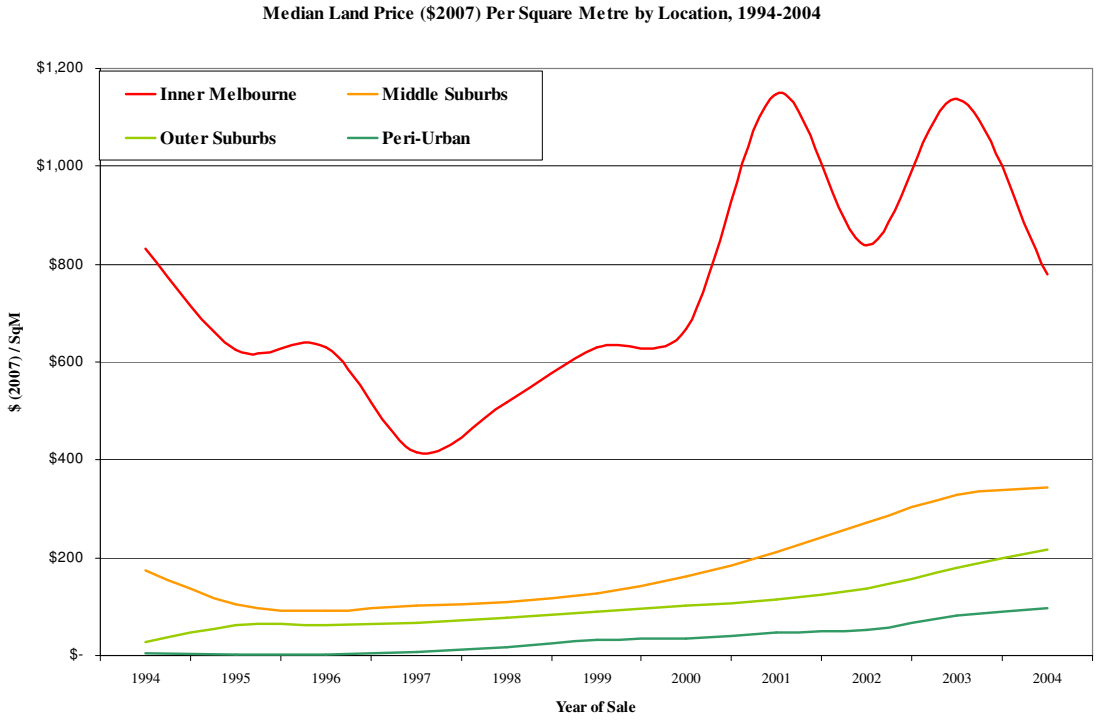

*Source: HIA-APM Land Monitor, May 2007, in DPCD, 2007: 42*

## Figure 2: Median land price ($2007/Sqm) by distance (Kms) from the CBD and Inside / Outside UGB




*Source: valuation records (see text)*

## Figure 3: Median land price per square metre by location and year of sale




*Source: valuation records (see text)*

**Figure 4 : Changes to Melbourne's UGB 2005-08**