Cities, growth, and land for housing

Key points

- Cities are national assets. When cities function well, they provide greater choices of employment, more opportunities for specialisation and have higher incomes and productivity than other areas. The concentration of people and businesses in cities also creates costs, such as pressure on infrastructure and on the availability and cost of housing. This puts a premium on good city organisation and the ability to effectively plan for growth.

- There are longstanding concerns about the ability of New Zealand planning systems to respond to the need for new housing, and about the extent of constraints placed on development.

- There does not appear to be an optimal city size after which the costs of urban life outweigh the benefits. However, the optimal city size from the perspective of the nation may be different from the perspective of local residents. This can create situations where local residents want cities to grow more slowly, or be smaller, than would be ideal for the nation.

- Economic models describe how cities respond to population growth and policy interventions such as land use regulations or investment in transport infrastructure. In the absence of constraints, population growth would lead to higher land prices closer to the city centre (where amenity value is highest). This prompts developers to economise on the use of land at the centre by increasing density – building more dwellings on each unit of land and building more multi-storey buildings and smaller dwellings.

- New Zealand cities have differing intensification profiles. Some cities have seen significant intensification close to the city centre, in line with economic theory. But in other cities the biggest contribution to intensification has occurred in outlying suburbs, suggesting that there are barriers to the efficient use of land.

- A survey of fast-growing New Zealand councils found universally strong land use rules, but considerable variation in the overall stringency of land use regulation. This variation was due in large part to differing levels of influence over planning by the courts, regional councils and community groups, and differences in the time taken to get approvals for development.

- Land prices in major New Zealand cities and high-growth areas increased significantly in the middle of the last decade, both in nominal terms and as a share of total property values. High land prices encourage the production of larger and more expensive housing. In New Zealand, the average size of new dwellings has increased by more than 50% since 1989. More than half of the new builds in New Zealand in 2014 were valued in the upper quartile of all housing stock, driven by the price of land.

- The current tendency of the New Zealand housing market to produce larger, more expensive dwellings is likely to be increasingly at odds with demographic trends, with the average size of households forecast to shrink over the next 20 years.

- Constraints on the use of land for housing push up housing prices, and have a disproportionate impact on the less well-off members of the community. The current situation presents risks to macroeconomic stability, puts pressure on public finances, creates barriers to labour market mobility, limits opportunities for agglomeration economies and associated productivity gains, and increases wealth inequality. Limits on the ability of cities to grow and evolve in response to population growth affect the wellbeing of current and future generations of New Zealanders.
Chapter 2 | Cities, growth, and land for housing

2.1 Introduction

The greatest pressure on the supply of land for housing is in our cities. Over the next few decades the population of some New Zealand cities is projected to grow significantly. What is so attractive about cities that people want to live and work there? Why would we want to ensure that planning and development systems “deliver an adequate supply of development capacity for housing” (the Commission’s terms of reference) to meet this demand?

In 1881 New Zealand was a predominantly rural country, but by 1916 the urban population exceeded the rural population and our cities continued to grow apace. Today, New Zealand is one of the most highly urbanised countries in the world, with about 86% of New Zealanders living in urban areas. That said, New Zealand has only one city of significant size. Auckland’s population was around 1.42 million people in 2013, a little under three times bigger than the population of the greater Wellington region, but still much smaller than either Sydney (4.37 million) or Melbourne (4.18 million) in 2013.

The notion that cities are beneficial was once an uncommon view. The Statistics New Zealand publication New Zealand: An urban/rural profile noted the consternation that greeted the realisation in the early twentieth century that the population was no longer predominantly rural:

Newspapers raised fears about urban corruption and decay as the population lost their hardy pioneering spirit and became softened by the experience of urban living. In 1923, the prominent educationalist, Professor James Shelley, wrote that children “should not be educated in the town… I do not think you realise how destructive it is” (Goodyear, 1998, p. 51). In response, sports such as rugby increased in popularity as a suitable medium to toughen young men and inculcate them with suitable values. None of these fears slowed the inexorable march towards an increasingly urbanised and eventually sophisticated nation. (Statistics New Zealand, 2004, p. 10)

The desire to preserve the beneficial characteristics of rural life not only influenced education policy but housing policy as well. Prime Minister Peter Fraser, when looking at models for state housing in the 1940s, was dismayed when shown a multi-block apartment in Berhampore in Wellington, declaring “I hope it will be the last” (Goodyear, 1998, p. 52). The preference instead was for a suburban house building programme in the Hutt Valley.

This chapter considers the benefits that large cities can bring to their residents and to the country as a whole, and the costs of artificially controlling their growth. It explains the influences that determine the shape and size of our cities, the types of dwellings that are built and where people choose to locate. It presents a simple model to show how cities that are unconstrained respond to population growth by economising on the use of land, and it looks at the impact of local regulatory and infrastructure policies on land use. The chapter then investigates the factors that serve to constrain the development of new housing in response to an increase in demand. It presents new data on the growth of New Zealand cities and discusses the distributional and economic impacts of local land-use policies.

2.2 The benefits and the costs of cities

Why do urban areas exist? Edwin Mills, a founder of urban economic analysis, says that “the simplest answer is the correct answer. Urban areas exist because proximity among diverse economic activities economises on the cost of moving goods, people and messages” (Mills, 2000, p. 8). Urban economist Edward Glaeser writes in Triumph of the City:

The strength that comes from human collaboration is the central truth behind civilization’s success and the primary reason why cities exist. (Glaeser, 2011, p. 15)

The benefits of agglomeration

When firms are located in close proximity to each other, they can take advantage of the benefits that come from having access to a wider pool of skilled labour, better links to markets for inputs and outputs, and the ability to share knowledge (Lewis & Stillman, 2005; Mare & Graham, 2009). These benefits are known as

---

1 The population of rural areas has increased very little since the early twentieth century. The rural population was 501 258 in 1916 and 532 740 in 2001.
agglomeration economies. In modern economies, the sharing of knowledge is particularly important. Glaeser and Gottlieb (2009) found that while some manufacturing firms still cluster to reduce the costs of moving goods, the most important factor driving greater density is the role that proximity plays in speeding the flow of ideas.

For people, larger cities provide a greater choice of employment and more specialised employment (Bertaud, 2014b). People who live in cities are able to be more productive workers and they earn, on average, higher wages. The benefits of being in a more productive environment don’t just happen on arriving in a city; workers in cities also experience consistently higher wage levels over time. This seems to be because workers can take advantage of training, networks and knowledge sharing while living in a large city. The benefits from the improved flow of ideas accrue to workers as much as they do to firms. Even when workers move away from a larger city to a smaller city, their big city experience is still reflected in their earnings (OECD, 2014).

The higher productivity of New Zealand’s biggest cities – Auckland, Wellington and Christchurch – compared to the rest of the country is seen in Figure 2.1. This is partly due to the composition of the industries that are located in cities and partly due to higher labour productivity within these industries.

Figure 2.1  Labour productivity in selected NZ cities, compared to the rest of New Zealand

Source: Productivity Commission analysis of Statistics New Zealand data.

---

3 Agglomeration economies are not the same as the economies of scale and scope, which are internal to firms (Mills, 2000).
Notes:
1. The bar charts measure median labour productivity across firms in 2012 (percentage more or less than the median labour productivity of the rest of New Zealand – ie, excluding Auckland, Wellington and Christchurch) on the vertical axis, with industries on the horizontal axis.
2. New Zealand has no regional price deflators, so part of the higher labour productivity in urban areas is due to higher prices in urban areas.
3. The chart does not include Mining, Agriculture, Forestry or Fishing, as the number of firms involved in these activities in Auckland, Wellington and Christchurch is small.

Cities are not only places where people work; they are also places where they learn, consume goods and services, and play. Larger urban areas offer more recreational and cultural amenities, shops, restaurants and educational opportunities than smaller centres and rural areas. Cities may also provide better quality infrastructure. The Australian Productivity Commission (APC) has found that social and economic infrastructure featured heavily in people’s responses to surveys about where they choose to live and work in Australia (APC, 2014).

Glaeser (2011) argues that people who live in US cities are often also healthier, wealthier and better educated than people who live in rural areas. In New Zealand, the differences between rural and urban areas are less stark (Figure 2.2), probably reflecting the influence of national welfare and health systems.

Figure 2.2 Amenity in urban and rural areas

<table>
<thead>
<tr>
<th>Internet access</th>
<th>Health service utilisation</th>
<th>Drinking water supply standards</th>
<th>Opportunities for study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>Wellington &amp; Auckland had the highest proportion of connections at 85% of all households. Two-thirds of rural households had a broadband connection in 2012.</td>
<td>Females in main urban areas in 2003 were significantly more likely to have had unmet need for a GP in the last year than females in true rural areas.</td>
<td>Main urban areas had the largest proportion of people studying for 20 or more hours a week in 2001.</td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td>Water quality standards were highest in the larger supply areas and lowest in the small supply areas in 2013.</td>
<td></td>
</tr>
</tbody>
</table>

Note: The terms “main urban” and “true rural” used in the chart are Statistics New Zealand classifications.

The spillover benefits of large cities

The higher productivity, incomes and amenity found in large cities are important for their residents, but cities also affect the prosperity and wellbeing of surrounding regions. The OECD (2014) reports that regions that include large metropolitan areas of more than half a million inhabitants grew by approximately 0.2 percentage points faster each year between 1995 and 2010 than those that did not. More generally, the population density of the most densely populated parts of a region is a very good predictor of per capita regional Gross Domestic Product (GDP) growth (OECD, 2014). And while positive spillovers decline with distance, large cities of 2 million inhabitants can benefit the economic performance of regions up to 300 kms away (OECD, 2014).

Agglomeration costs

While cities provide benefits to the people who live there and, through their productivity, to surrounding regions, growing cities also create more negative externalities – as more firms and more people put pressure on a city’s infrastructure.
The pressure on transport infrastructure is readily observed, but other infrastructure, such as waste water treatment and the management of stormwater, can come under significant pressure too. When infrastructure is under pressure, the costs are borne by a city’s residents either as negative effects – traffic congestion or an increased risk of flooding – or in the costs of upgrades or extensions to meet the increased demands on the city’s infrastructure systems.

These costs detract from the benefits of city life. Roads become congested and commutes are longer. But while commuting time invariably increases with city size, some cities handle the flow of traffic better than others. How a city manages will depend on its pattern of land use, such as whether jobs are located in the city centre (a mono-centric urban form) or are dispersed across different locations (poly-centric urban form) and the transport policies it adopts. Of New Zealand cities, employment is relatively decentralised in Auckland, with only 13% of employment located in the central business district (CBD) in 2011, while 55% of employment in Wellington is in the CBD. The difference between these two cities results in very different transport infrastructure requirements. Poorly organised cities not only impose costs on residents; they can also lead to a loss of potential agglomeration benefits. Firms cannot take advantage of a wider pool of workers available in a big city if the costs and time of getting to work or the lack of coordinated public transport infrastructure limit the areas in which people seek work. Ahrend and Lembcke (2015) note that some large cities are actually just smaller fragmented labour markets.

The higher costs of housing, and the higher cost of living in cities more generally, are also an impediment to labour market mobility, dampening the incentive to move provided by higher wages. Clearly, high relative earnings and employment opportunities, along with other amenities, encourage migration to a region, while higher relative housing prices discourage it (Muellbauer & Murphy, 2008). Cities differ in how they respond to the challenge of accommodating growth. This can have a major influence on the price of housing. For example, restrictions on building in existing inner suburbs increase prices and encourage movement to urban fringe locations, even though transport options tend to be more limited on the city fringe and fewer jobs are within easy reach.

Is there an optimal city size?

Is there an optimal city size after which the costs of urban life simply outweigh the agglomeration benefits? This is not an easy question to answer and has been the subject of debate among economists and geographers since the 1960s. Several important issues must be considered. First, the optimal city size is not fixed because costs and benefits change over time. For example, Glaeser and Kohlhase (2003) find that transport costs have declined in real terms by up to 90% in the United States, altering the cost-benefit calculation in the locational choice of firms and households.

Second, the optimal city size from the perspective of the nation as a whole will differ from the optimal city size from the perspective of the city’s resident population:

The optimal population will differ according to whether a national or a local viewpoint is assumed. (Alonso, 1971, p. 72)

As Camagni, Capello and Caragliu (2013) explain, the optimal size from the perspective of the national economy is when the city makes its maximum possible net contribution to national income “and should be assumed as a target by a national government interested in efficiency of the urban system” (p. 311). The optimal city size, from the point of view of the population already located in the city, is when the difference between local agglomeration benefits and local costs is maximised.

The decisions that a city makes about its growth may therefore be at odds with the interests of central government in maximising the benefits to the economy of a larger city size. Combes, Duranton and Gobillon (2012) observe that many cities actively restrict growth because their focus is local and they are concerned

---

1 It is also commonly thought that cities generate more pollution than rural areas. However, more densely populated cities that don’t rely on private automobiles have lower energy use than more spread-out cities or rural areas (Glaeser, 2011). The wealthier a city becomes, the more environmentally friendly it becomes as well. This is because, as incomes rise, people demand cleaner air and water. They also demand more environmentally friendly goods and services and support greater regulation to protect the environment.

2 The main reason for the higher prices of goods and services in urban areas is that businesses have to pay higher prices for their inputs such as rents and wages, although higher prices can also reflect the higher quality of the goods and services that can be bought in bigger cities. The more competitive environment found in cities also works to squeeze profit margins, partially offsetting higher prices (OECD, 2014).
about population growth imposing “large costs to already established residents by bidding up housing prices and crowding out the roads” (p. 1). However, in a challenge to the view that increasing population imposes large costs on cities, the authors find that, at least for French cities, the costs of having larger cities are modest and are of the same magnitude as agglomeration economies. Much work remains in understanding the costs and benefits of agglomeration, how these are related to city size, and where the benefits of agglomeration accrue and where the costs fall.

Third, as noted above, city policies can increase or reduce agglomeration costs. Bertaud (2014b) argues that the fundamental challenge for city authorities is to reduce the negative externalities associated with agglomeration in their cities, without destroying the wealth that agglomeration creates:

To do that, they must plan and design infrastructure and regulations while leaving intact the self-organizing created by land and labor markets. (p. 2)

Capturing the productivity benefits that large and growing cities offer their residents and the wider economy puts a premium on good city organisation and infrastructure planning, including the delivery of an adequate supply of development capacity for housing.

F2.1 The optimal city size from the perspective of the nation may be different from the perspective of local residents.

2.3 A framework for understanding the impact of city policies

People’s housing choices are determined by their preferences and their incomes. While the demand for housing and its supply is determined in a private market of willing buyers and sellers, the quantity, type and location of available housing is shaped by a city’s local land use and infrastructure policies. This section looks at the impact of city policies on the market for land and housing.

The demand for space and for amenity

As incomes rise, people tend to demand more private space – bigger houses and more land or garden space are generally found further away from city centres. However, rising incomes also leads people to demand greater public amenity – they want to live closer to the attractive areas of cities and closer to jobs and educational opportunities. There is an inherent trade-off for city dwellers between more private space and the benefits of more public amenity (Cheshire, Nathan & Overman, 2014).

Amenity (for example, the proximity of a public open space) and dis-amenity (such as proximity to a noisy road) are reflected in housing prices. A number of studies have attempted to measure the value of different amenities and the effect on house prices (eg, Cheshire & Sheppard (1998) and Gibbons, Mourato & Resende (2014) in the United Kingdom; Walsh, Milon & Scrogin, (2011) and Netusil, Chattopadhyay & Kovacs (2010) in the United States; and Pearson, Tisdell & Lisle (2002) in Australia).

These studies use housing market transactions to infer the implicit value of a property’s underlying characteristics by separating out the structural attributes of a property from locational characteristics such as accessibility to amenities. The attributes that people value varies between countries and between cities, but the valued attribute can have a marked impact on housing prices. And as the distance from the valued attribute increases, prices fall.

For example, Gibbons, Mourato and Resende (2014) write about the value of properties near churches with steeples in England:

Distance to churches (those classified as having steeples or towers on Ordnance Survey maps) also comes out as important, with 1 km increase in distance associated with a large 4.2% fall in prices, worth about £8,150…. This figure may be best interpreted as a valuation of the places with which churches are associated – traditional parts of town centres, focal points for businesses and retail, etc. – rather than a valuation of specifically church-related amenities and spiritual values. However, the environmental amenities provided by church grounds and architectural values of traditional churches could arguably also be relevant factors. (p. 191)
Improvements to local infrastructure can also increase amenity, which is then capitalised into housing prices. For example, Grimes and Young (2010) estimated that house prices adjacent to New Lynn station rose by 3.5% following the announcement in 2005 of upgrades to the Western Line of Auckland’s passenger rail network – including electrification, double tracking, and upgrades to the station that involved moving sections of the line underground. The effect on prices decayed over distance and was not observed from a distance of about 8 km.

In summary, attractive areas within cities attract large premiums because of their proximity to highly valued amenities. Further away from these sought-after areas, housing prices are cheaper, reflecting their relative distance from valued amenities, including employment. But moving further out inevitably incurs the additional costs of and time spent commuting.

The housing cost/commute cost trade-off

Households’ location choices and the resulting shape and size of cities were examined in the 1960s and 70s by Alonso (1964), Muth (1969) and Mills (1972). What has become known as the Alonso-Muth-Mills model describes the trade-offs households make about where to live based on the relative costs of housing and the time and cost of transport to work (Box 2.1).

Box 2.1 The basic Alonso-Muth-Mills model

The basic Alonso-Muth-Mills model assumes a city with a given population and income level living around a central business district (CBD). Each worker travels into the city centre for work. Since commuting is costly both in money and time, and increases with distance from the CBD, households would choose, other things equal, to live closer to the city centre. But not everyone can live close to the city centre, so the price and density of housing adjust to clear the market. In particular, land for housing becomes more expensive closer to the CBD, which prompts developers to economise on the use of land by building more dwellings on each unit of land, by building multi-storey buildings and smaller dwellings. (There is a trade-off involved, as the cost of an additional square metre rises with building height.) Households then choose whether to live in well-located yet smaller and more expensive housing, or in more distant yet larger and less expensive housing towards the city fringe. The city structure is characterised by higher density and taller buildings close to the CBD and lower density and building heights on the fringe. The overall size of the city will be determined simultaneously by the size of the population, the cost of transport and the value of land in alternative uses.

Note: Although the model assumes a mono-centric urban form, the model has been found to be remarkably robust, explaining the spatial pattern of settlement in many cities.

Source: Kulish, Richards & Gillitzer, 2012.

In 2011 the Reserve Bank of Australia developed and calibrated a version of an Alonso-Muth-Mills model to compare housing prices and the spatial distribution of five large Australian cities. The paper was published by the authors, Kulish, Richards and Gillitzer (2012). The model has also been used to compare Auckland with the Australian cities (NZIER, 2014a).

The model demonstrates that when cities are unconstrained, as the distance from the CBD increases, dwelling sizes increase while land prices, housing prices, building height and density all decrease. Given the city’s population and the density at different distances to the city, it is possible to calculate a curve that shows, at every distance from the CBD, the total number of residents who live at specific distances from the centre (Figure 2.3).
Using the Alonso-Muth-Mills model to illustrate population change

The Reserve Bank of Australia’s version of the model was used to consider how a city would adjust to a larger population if land was zoned and serviced with appropriate infrastructure to support people’s locational choices in response to population growth. The Alonso-Muth-Mills model is a static model and is not able to capture the dynamics of urban change. However, the model can compare the structure of cities with similar characteristics (such as incomes, preferences and transport costs) but where population size differs.

Two hypothetical cities were compared, one city with double the population of the other. A higher population creates a greater demand for housing, and housing and land prices are higher at all distances from the CBD. Higher land prices prompt developers to economise on the use of land by building more multi-storey buildings and population density is higher and building height rises. Because of higher housing prices, households demand smaller dwellings. The larger population results in a larger city, yet doubling the population is accommodated without doubling the city’s footprint. This is because building height, dwelling size and density have adjusted to the increase in the price of land and housing prices (Figure 2.4).
Modelling the impact of a restriction on density

The model was also used to compare the impact of a uniform height restriction across a city (Figure 2.5).

Density captures the extent to which a city is making the fullest use of its available land. Various approaches are used to measure urban population density (see Appendix B). Some density measures capture population density (as in the Alonso-Muth-Mills model presented here), while others measure the density of dwellings (eg, Figure 2.12 - Figure 2.16 in this chapter).
Although the modelled height limit is the same across the city, it is most binding close to the CBD where building height in an unconstrained city would naturally be at its highest. Because a significant proportion of the city’s population is unable to live in higher-density housing closer to the CBD due to the height limit, many people have to live further out, the city becomes larger, overall density is lower and the population devotes more resources to commuting. While building height is lower in the CBD, building height in the middle and outer suburbs is higher than it otherwise would be. Overall, the price of housing is higher and dwelling size is lower at all distances from the CBD. The effect on land prices depends on distance from the CBD. Land prices are lower closer in because developers cannot build as high as they would want to and therefore the land is less valuable. As the population is forced further out, demand in the outer suburbs is higher, developers can build up to the height restriction, and land in these areas becomes more expensive.

The impact of investment in transport infrastructure

The model was also used to contrast two otherwise identical and unconstrained cities – one with significant investment in transport infrastructure as the benchmark case, and the other with less well-developed transport infrastructure, traffic congestion and higher commuting costs (Figure 2.6).

Figure 2.6 Effects of transport investment and commuting costs

In the city where commuting costs and congestion are greater, households have a stronger incentive to live closer to the CBD. As a result, city size is smaller, building heights are higher closer to the CBD to accommodate the denser population, and dwelling sizes at the centre are smaller. Housing and land prices are also higher closer to the CBD. At greater distances from the CBD several of the curves cross. With higher commuting costs, it is more costly to live further out. This means that housing prices, land prices and density near the city fringe are lower than at the same distance under low commuting costs.

Overall, the effect of poor transport infrastructure is that households spend more of their time commuting, and face higher average housing and land prices. Conversely, in a city with better investment in transport infrastructure, it is more feasible to live further from the CBD, and house prices are lower, provided the city boundary can be extended (bottom right panel Figure 2.6).
The effect of an urban limit in combination with other polices and constraints on a growing city

Many cities around the world have limits on their expansion. In some cases urban limits (along with policies that limit investment in roads) were put in place to reduce carbon emissions. In other cases urban limits were put in place to prevent the encroachment of cities on agricultural and rural land. Whatever the case for their existence, considerable evidence shows that binding urban growth boundaries have major effects on new housing supply across cities and on housing prices (Malpezzi, 1996; Ryan, Wilson & Fulton, 2004; Pendall, Puentes & Martin, 2006).

Some of the most compelling work on the impact of an urban limit was done by Grimes and Liang (2009) using Auckland data over 12 years from 1992 to 2004. The authors found that land just within Auckland’s Metropolitan Urban Limit (MUL) was valued at about ten times the rate of neighbouring land just outside the MUL. In 2012, the Productivity Commission used a similar methodology to estimate the impact of the MUL between 1995 and 2010. The Commission found that the value of the land price differential has increased since the late 1990s, indicating that the MUL has become increasingly binding as housing demand pressures have intensified within Auckland city (NZPC, 2012). The price ratio between land on each side of the MUL reflects not just the constraint of the urban boundary; it also reflects past and present policy choices. These include zoning which determines where commercial and industrial firms can locate, and restrictions on the density of residential areas inside the boundary. These, along with the natural geographic characteristics and features of Auckland, serve to shape the city and constrain development.

Local policies can be offsetting or reinforcing in their impacts

The Alonso-Muth-Mills model presented above illustrates the separate impact of better transport infrastructure and density restrictions on city structure and on housing and land prices. In reality, cities adopt a range of policies – some reinforcing and some offsetting. For example, both density restrictions and better transport infrastructure increase a city’s footprint, yet have differing impacts on housing prices depending on the distance from the CBD. A larger population has an impact on the price of housing and land and on the urban footprint, depending on other policies that may be in place. When limits are placed on density, rising land prices in response to demand will not result in more dwellings on each unit of land. This forces the city to expand its size to accommodate the larger population. Where a city combines density controls with an urban limit, population growth will more quickly reach the limit and the constraint can become binding. This leads to high differentials in the price of land on either side of the urban boundary.

An assessment of Auckland’s policies by NZIER using the Alonso-Muth-Mills model found that inadequate transport infrastructure and an overly tight MUL imposed significant costs on households. The impact is compounded in Auckland because of the city’s constrained geography. The study concludes that because of its natural geographic constraints, it is all the more important to get the policy settings around land use regulation and transport infrastructure in Auckland right (NZIER, 2014a).

Specific planning or infrastructure policies have differing effects on the ability of cities to grow and use land efficiently. Some policies may counteract or offset others. Ensuring that land use policies and transport infrastructure investments are aligned is particularly important for cities such as Auckland, where geography adds further constraints to growth.

2.4 The supply response to an increase in demand

The supply responsiveness of the housing market influences the extent to which an increase in housing demand leads to more housing or to higher housing prices. If the supply of housing is constrained in some

---

*In the absence of carbon and congestion pricing, some may consider a growth limit to be a second-best policy to deal with congestion and sprawl.*
way, then increased demand will tend to feed into higher housing prices, rather than an expansion in housing supply (Gyourko, 2009).

The extent to which new housing can be constructed in response to changes in demand is determined by a number of factors, including:

• the constraints of local geography;
• land use and planning regulations which determine how much land is available for new dwellings;
• the ability to service land with infrastructure to support new housing; and
• the extent to which the construction sector can gear up and build the type of housing demanded.

Researchers have found that in some cases these factors act in tandem to constrain housing supply. For example, Saiz (2010) has explored the relative role of geographical versus regulatory constraints on development and housing prices. Saiz found that most areas in the United States that are widely regarded as supply-inelastic are severely land constrained by their geography. Restrictive geographical features in US cities are a strong predictor of housing price levels and growth. But he also found that US cities that were geographically constrained also had the strictest regulatory constraints. One explanation for this is that geographically constrained cities are likely to have higher land values and so citizens have greater incentive to use regulation through the political process to protect those values (Saiz, 2010).

Restrictions on land supply (zoning, planning rules and other interventions) appear to be ubiquitous and have effects on the responsiveness of housing supply to changes in housing demand in many countries. A number of comparative cross country studies also attribute the substantial variations in supply elasticities to restrictive land use policies, often in combination with other factors.

Barker (2004a; 2006a; 2008) focuses attention on the planning system and on other important constraints on the effective expansion of supply in the United Kingdom, such as the provision of infrastructure and its financing. The ability for land to be serviced with infrastructure such as roads and water (fresh water supply, waste water treatment and stormwater management) is an important factor in the supply response. In the case of greenfield land, new connections to existing infrastructure are required. Use of brownfield or infill sites can take advantage of existing capacity, but in some cases infrastructure may require upgrading. Concern about the cost of infrastructure to support growth appears particularly important in New Zealand:

Councils are constrained in their ability to fund and deliver infrastructure by Local Government Act requirements to raise revenue, cash fund depreciation and consider alternative infrastructure and funding and delivery options. Additionally, councils are constrained by revenue/debt ratios and their impact on council credit ratings. Together with political pressure to keep rates and debt levels low a constant tension exists between providing infrastructure for the growth of our cities and communities and meeting the expectations of current communities. (Te Tumu Landowners Group, sub. 40, p. 13.)

A survey of nine councils in New Zealand (NZIER, 2015) found that the cost of new infrastructure influenced the rate of residential development in their jurisdiction. The answers of those surveyed showed a strong, positive correlation between councils’ stringency of land use regulation and the influence of the cost of infrastructure.

Bourassa et al. (2010) used 30 years of price data from Switzerland between 1978 and 2008 to separate out the responsiveness of land supply and of construction in response to a demand shock. The authors found that land supply in locations desirable for residential use is relatively inelastic. In contrast, dwelling supply in Switzerland is more elastic, provided that construction can gear up to meet the demand. Land price changes have largely driven house price changes in Switzerland. The authors conclude that the ratio of land to property value is an important factor in explaining house price movements.

---


8 See, for example, Mayo & Sheppard (1996) and Malpezzi & Maclellan (2001).
The response to the Christchurch earthquakes has demonstrated the factors that influence the ability of the building industry to meet the demand for new housing. Regular surveys of consultants, contractors, developers and local government and government agencies involved in the construction and infrastructure sectors identified a range of barriers to the rebuild. These include poor information about planning, regulations, and delays in consenting processes, but also resource and capacity limitations in the building industry (AECOM, 2015).

The responsiveness of housing supply to changes in demand (also known as ‘elasticities’) varies across the countries for which data is available (Figure 2.7). Where a supply elasticity is equal to one, a one percent increase in the price of housing will result in a one percent increase in supply. Where the supply elasticity is greater than one (as is the case in Canada, Denmark, Sweden and the US), a one percent increase in price will see the housing supply increase by more than one percent.

With a long-run supply elasticity of less than one, an increase in the demand for houses in New Zealand is estimated to lead to a proportionately larger increase in house prices than in new house construction. New Zealand performs rather better, however, than many European countries and the UK.

Results suggest that housing responsiveness to price changes varies substantially across countries, with potential consequences for the speed of adjustment of housing markets. New housing supply tends to be relatively flexible in North America and some Nordic countries, while it is more rigid in continental European countries and in the United Kingdom. (Sánchez & Johansson, 2011, p. 6)

![Figure 2.7 Supply responsiveness of housing to price changes, selected countries](source: Sánchez & Johansson, 2011.)

Note:

1. Estimates of the long-run price-elasticity of new housing supply are derived from a stock-flow model of the housing market that is estimated with an error correction framework. The estimation period is from the early 1980s to the mid-2000s.

Local differences

National figures can belie local differences. In many countries the regulations and infrastructure decisions that influence the land available for housing are set and/or administered by local councils. As such, the extent to which housing supply responds to changes in demand, and the associated price dynamics, will vary...
within countries. In areas where council policies and practices allow for rapid expansions in new house construction, house prices will be less volatile than in areas where new supply is more constrained.

Grimes and Aitken (2010) found that housing supply is more responsive, and house prices less responsive, to a demand shock where land is supplied relatively easily. Importantly, supply elasticities varied across territorial authorities, potentially reflecting regulatory and/or geographical constraints. The authors observe that several considerations will impact on the availability of new residential lots:

These considerations include geographical and regulatory constraints, market structure (e.g., concentration of ownership of land suitable for residential development), availability of infrastructure and time taken to lay on new services for residential developments. (Grimes & Aitken, 2010, p. 350)

Yet measuring the strength of local regulatory constraints can be problematic, as regulation can take many forms. Gyourko and Molloy (2014) characterise measurement efforts to date as either deep and narrow – with extremely detailed information about regulation on a single location – or shallow and wide – where general regulatory characteristics are captured across a wide range of locations.

One example of a deep but narrow approach is the study by Glaeser and Ward (2009). The researchers investigated the causes and consequences of land use regulation in the Greater Boston area. An example of a shallow but wide approach is the Green, Malpezzi and Mayo (2005) study of 45 metropolitan areas in the United States. The researchers found that housing supply is highly responsive to demand pressures in cities with “pro-development” regulatory environments and readily available land. In contrast, supply responsiveness is low in cities with high regulatory barriers to expansion. Importantly, they also found that urban density is an important predictor of supply elasticity. Regardless of how density is specified – as the number of dwellings or as a measure of the population per unit of land – higher densities produce lower elasticities. This suggests that the denser a city already is, the harder it is for supply to respond to an increase in demand.

Another example of the shallow but wide approach is the survey of over 2000 communities in the United States undertaken by Gyourko, Saiz and Summers (2008). The researchers used the responses to the survey to construct an index of the “stringency” of land use regulation called the Wharton Residential Land Use Regulatory Index (WRLURI). Gyourko, Saiz & Summers (2008) found that Boston and parts of New England in the United States were the most heavily regulated, while the Mid-West and the South were relatively less heavily regulated. Stringency of land use regulation, as measured by their index, was strongly correlated with wealth in local communities. They found that median house prices in the most highly regulated places in the United States were nearly twice the median price in lightly regulated locations, although the correlation between house prices and the index was relatively weak. A small study of the regulatory stringency of nine New Zealand councils using the WRLURI also found a weak positive correlation between house prices and the stringency of regulation as measured by the index (NZIER, 2015).

2.5 Responsibility for planning: councils, planners and community

The role of central government and local government

The submission from Waikato District Council sums up the role of local councils with respect to land use planning and the provision of infrastructure:

Local government is the main regulator of land use and provides the zoning and rules governing land development for housing and development in general. It is important for any local authority to use these powers to ensure both an adequate supply of land and space for development. Good planning therefore is not just about providing housing but also all the associated infrastructure and services that goes into creating liveable communities. (sub. 12, p. 9)

As outlined earlier, in many countries the regulations and infrastructure decisions that influence the land available for housing are set and/or administered by local governments. However, the extent of national or state government involvement (in urban policy, land use regulation and the provision of infrastructure) varies considerably from country to country (Hartwich, 2014). In New Zealand, councils have considerable autonomy in determining land use policy and regulation under the Resource Management Act 1991 (RMA) (although local authorities must give effect to National Environmental Standards (NES) and National Policy Statements...
(NPS) and central government can influence urban planning through guidelines and protocols. Local authorities are responsible for providing local infrastructure to meet the needs of communities under the Local Government Act 2002 and have flexible powers to determine rates under the Local Government Rating Act 2002. With the exception of funding for roads, transfers of funds from central to local government in New Zealand are insignificant. Accordingly, the primary accountability of councils is to their local residents:

While local government is a creature of statute, it operates as a largely autonomous provider of services, funded separately by property taxation and held accountable by voters. In the absence of well-defined constitutional or fiscal relationships, local and central government are most accurately regarded as two spheres of a system of collective decision-making, each with revenue-collection powers to fund the implementation of its particular policies and programmes. (Local Futures Research Project, 2006, pp. 13–14)

The role played by central government in urban policy, regulation and the provision of infrastructure in New Zealand today contrasts with that of other jurisdictions. For example, the role of Australian state governments in urban affairs has been increasing since the early 2000s. From 2000 to 2005, planning under state governments was progressively recentralised, with the establishment of metropolitan plans and special treatment of major infrastructure projects (in New South Wales). The period 2006 to 2010 saw increased codification and standardisation of local planning (in NSW, South Australia, Queensland and Victoria), increased emphasis on infrastructure funding, and increased state powers to intervene in local planning (Gurran, Austin & Whitehead, 2014). Gurran, Austin and Whitehead (2014) characterise the Housing Accords and Special Housing Areas Act, 2013, and the apparent willingness to take over planning powers in Christchurch, however, as efforts at greater centralised control:

The act introduced greater centralised control: while local councils were given an ‘opt out’ clause, the government could introduce the more permissive planning regime regardless. In addition the government (through the Earthquake recovery Minister) has stated that it will take over planning powers in Christchurch …. if needed to ensure residential development goes ahead as it deems appropriate. (p. 193)

Central government has tended to devolve to local government or centralise control to suit its purposes (NZPC, 2013). Kenneth Palmer observes: “The history of local government depends primarily on the policies and mandates of central government, and the practical advantages in conferring local powers to provide and regulate functions and services” (2012, p. 1075). Changes in urban planning legislation and the responsibilities of central government and local government in New Zealand are outlined in Box 2.2. A more detailed research note on the history of New Zealand planning can be found on the Commission’s website.

---

**Box 2.2 Responsibility for land use regulation, infrastructure and urban planning**

**Early legislation**

The Municipal Corporations Ordinance of 1842 gave local authorities power to make and repair roads, water works, and sewers. Over time, the provincial regulations controlling the sale and disposal of land reflected a growing awareness that the essential needs of urban settlements had to be deliberately provided for. The Waste Land Regulations adopted by different provinces during 1855–1857 contained measures for the provision of reserves, control of subdivision and obnoxious industry, and reservation of land for public purposes. In 1867 central government passed the Municipal Corporations Act which covered matters such as the width and protection of streets, sewerage, lighting, water supply, markets, community buildings, and reserves.

The first town planning legislation was the Plans for Towns Regulation Act 1875. It was limited and restricted in its application. It was concerned with the laying out of towns, controlling the width and layout of streets and providing for reserves, rubbish disposal areas, and gravel pits. Councils were empowered to make bylaws to regulate building and to promote public health and safety – for example powers to impose minimum yard spaces to ensure light and ventilation.

---

6 An example of a small transfer of funding to local authorities from central government is the Drinking-Water Assistance Programme. The programme includes subsidies to help small rural communities establish or improve their drinking water supplies.
The beginning of town planning

The first Town Planning Act was passed in 1926, when the rate of urban growth prompted sufficient political momentum to pass planning legislation. A feature of the Act was centralised control over planning. Local authorities were accorded power to prepare planning schemes, but central government retained ultimate authority to approve the schemes and consider requests for subsequent changes. The Act established a Town Planning Board headed by the Minister of Works.

Rapid suburban growth in the post-war period occurred in a largely incremental manner, without either serious consideration to the functional layout of cities or the provision of services and amenities. The system of local government at the time exacerbated these issues. While territorial local authorities were responsible for land-use planning, in many instances the provision of water, drainage, electricity, and other infrastructure services was undertaken by separately funded, special purpose local and regional agencies. Central government also lacked a cohesive urban policy.

A greater role for local authorities

The Town and Country Planning Act 1953 transferred the powers previously vested in the Town-Planning Board to local authorities. A new authority called the Town and Country Planning Appeal Board was empowered to deal with appeals from council decisions. The Board came to exert wide-ranging influence on planning practice in New Zealand. Each planning authority was responsible for preparing and approving a district planning scheme, but each council had to submit its scheme to the Minister of Works who checked that it made sufficient provision for public works and that it complied with relevant regulations.

The purposes of district and regional schemes under the 1953 Act were potentially far-reaching, concerning not just the essential amenities and services and physical environment of urban areas, but also the welfare of their inhabitants. The late 1960s and early 1970s saw a further shift in planning practice. Councils moved away from administering zoning that controlled the built environment toward a broader strategic and policy-focused function. A new Town and Country Planning Act in 1977 included two important directives to local government. The first directive was to use and manage New Zealand’s resources wisely. The second directive was to recognise the relationship of Māori, through their culture and traditions, with their ancestral land.

The Resource Management Act 1991

In 1987 the Government initiated a review of New Zealand’s town and country planning legislation that ultimately resulted in the passing of the RMA. The RMA was an attempt to do away with zoning, establishing in its place an effects-based system, elaborated locally in a District Plan. Any land use or activity could be permitted so long as it did not undermine the sustainable management of natural and physical resources. The RMA has been successively amended since its inception.


While urban policy and planning has largely been the responsibility of local government, central government has not been unconcerned. The review of New Zealand’s town and country planning legislation in 1987, for example, was initiated for a number of reasons, some of which appear to have been longstanding issues of concern to central government:

Other criticisms of the current planning process are the subject of specific items in my terms of reference; that is to say the desirability of greater flexibility and speed of decision making, the widespread perception that the Act acts a restraint on much worthwhile development, the problem of multiple consents and the lack of integration in resource management statutes.

Further relevant matters in submissions made to me cover a wide variety of topics such as the role of the Crown; the role of the Planning Tribunal; the process being too legalistic; rights of public participation being too narrow or too wide; the need for environmental protection; the failure to adequately recognise the significance of trees, historic buildings and such matters.
In reviewing the circumstances which gave rise to the reforms of the 1953 Town and Country Planning Act, said to be contained in the 1977 Act I am struck by the number of criticisms of the 1953 Act which are now being repeated in respect of the 1977 Act. (Hearn, 1987, p. 22)

Hearn’s comment in 1987 that he was “struck by the number of criticisms of the 1953 Act which are now being repeated in respect of the 1977 Act” are also being revisited in reviews of the RMA. And, of particular relevance to this inquiry is the speed and flexibility with which the planning system can respond to the demand for new housing and whether undue constraints are placed on housing development. Further, matters raised in submissions to the review of the 1977 Town and Country Planning Act, such as the role of the Crown; rights of public participation being too narrow or too wide; the need for environmental protection; the failure to adequately recognise the significance of trees, historic buildings and such matters, have also found been found in submissions to this inquiry.

There are longstanding concerns about the ability of New Zealand’s planning systems to respond to the need for new housing, and about the extent of constraints placed on development.

The legislative changes outlined in Box 2.2 also reflect changing beliefs about the role and scope of urban planning and increased community involvement in planning.

The role and scope of planning: improving social outcomes

The scope of urban planning has been influenced by beliefs about the perceived benefits of planning by an emergent planning profession in the twentieth century. These views are still reflected in planning philosophy and practice today.

Urban planning and public health

The proposition that urban planning could improve the lives of urban dwellers began with the public health movement in the late nineteenth century. Urban planners and public health professionals began to address high rates of disease caused by household waste that polluted streams and drinking water and encouraged vermin. Improved public health as a result of such efforts highlighted how planning and intervention could positively impact on the quality of city life (Schrader, 2012a). The voice of public health professionals has remained influential in urban planning and infrastructure provision in New Zealand, resulting in increased standards for infrastructure. For example, earlier standards for drinking water set in 2005 by the Ministry of Health were superseded by new standards in 2008.

Urban design to deter crime

The belief that managing the built environment could reduce serious social problems such as “larrkinism” in New Zealand dates from the 1920s (Perkins et al., 1993). But the notion that urban design could reduce crime achieved prominence with the publication of Jane Jacobs’ book *The Death and Life of Great American Cities* in 1961. Jacobs advocated the use of high-density, mixed-use communities to stimulate increased street traffic day and night to deter criminal and anti-social behaviour. Criminal activity, she argued, is attracted to secluded spaces and crime is more likely to occur when criminals believe they will not be caught. Jacob’s “eyes on the street” concept, asserting that a place can be made more secure by populating it, is referred to in the Ministry of Justice publication *National Guidelines for Crime Prevention through Environmental Design in New Zealand* (2005). The Guidelines recognise that crime occurs for many reasons and cannot be prevented by well-designed places alone, but argues that proper design and effective use of the built environment can help to reduce criminal opportunity and foster positive social interaction among “legitimate” users of space.

Broader benefits for quality of life

The belief that well-designed surroundings would materially improve quality of life more broadly originated with the “environmentalism” of the garden city movement in the early twentieth century. The movement started in Britain in response to concerns about the deleterious effects of inner-city slums on children. The state of inner city residential areas in New Zealand was a particular concern in the post war period when “right or wrongly... many believed that New Zealand towns and cities had fallen into a state of chaos”
(Gatley & Walker, 2014, p. 19). Garden city planning offered low-density housing, different road widths to accommodate different traffic densities and cul-de-sacs to encourage social interaction. New state housing suburbs after the Second World War were constructed with these ideals in mind (Schrader, 2012b). The state housing programme in the Hutt Valley was the most ambitious, with three suburbs (Epuni, Naenae, and Taita) constructed along garden-city principles. Those principles included curved streets to follow the topography and counter monotony, reserves, community centres, and single-dwelling sites.

A new Local Government Act in 2002 required local authorities to “play a broad role in promoting the social, economic and environmental and cultural well-being of their communities, taking a sustainable development approach” (Part 1 3(d) now repealed). Prevalent beliefs about the role, scope and impact of urban planning fitted well with the ideals of the new Act. In the 2000s, central government also appears to have directly promoted urban design as a means to achieve social and cultural goals. The Ministry for the Environment’s New Zealand Urban Design Protocol (2005) states:

Quality urban design can help us avoid some of the problems of poorly designed low-density developments that we have experienced in the past. These problems have included: traffic congestion, unsustainable energy use, overloaded urban infrastructure, a lack of distinctive identity, social isolation, and reduced physical activity with its associated problems such as obesity, diabetes and heart disease. In many of our cities we have seen a trend towards multi-unit developments (these accounted for 20-30 percent of all building permits approved in Auckland over the past five years). Quality urban design can help ensure multi-unit developments provide attractive, liveable and affordable options, without impacting on our heritage and distinctive identity, our privacy, or overloading our urban infrastructure. (MfE, 2005, p. 9)

Adherence to this protocol is one of a number of criteria to be considered in deciding whether to approve resource consent applications under the Housing Accords and the Special Housing Areas Act 2013 (s. 34 (1)(e)).

F2.5 The idea that urban design can ameliorate social problems is longstanding, and continues to be promoted through initiatives such as Special Housing Areas.

The costs of urban planning

While there are benefits associated with good urban design, the costs may outweigh the benefits. The Commission questions whether adequate consideration has been given to the costs as well as the perceived benefits of planning.

The New Zealand Urban Design Protocol (2005), for example, claims that good design is value for money because it creates “productive, robust and attractive environments” and that “research has found no evidence that quality urban design necessarily increases development costs” (p. 8). But planning based on urban design principles is not without cost. This chapter establishes significant aggregate costs of current planning approaches for society, and Chapter 5 points to some unjustified costs from specific urban design requirements. Urban planning decisions, such as maintaining “our heritage and distinctive identity” (p. 9 of the protocol as above) is not without a significant opportunity cost. Like height or other density restrictions, maintaining the heritage character of large parts of residential suburbs close to city centres has a cost in terms of the ability to economise on the use of land, with consequent costs for individuals and the community. These costs should be recognised. The Commission also questions, as it did in its 2012 Housing affordability inquiry, whether the discipline of planning has the tools and processes to evaluate and reconcile the multiple objectives it seeks to influence through urban design.

F2.6 Proponents of good urban design articulate the consequent benefits well, but appear to take much less account of the costs of individual design requirements or their aggregate effects.
Community participation and the politicisation of planning

From the early days of settlement in New Zealand, planning has been the subject of public interest and debate. Early planning legislation made no formal provision for community consultation or participation in decision making about planning, but that did not mean the public were disinterested or not involved.

The early 1900s saw widespread public debate about and engagement with town planning. Various planning schemes were mooted and proposed (Perkins et al., 1993, p. 18). Large numbers of people attended public lectures and conferences to discuss planning issues. The anxiety that the urban problems of Britain might become entrenched in New Zealand’s cities led to widespread middle-class support for the ideas of the garden city movement in New Zealand. In response, a number of active clubs and societies became involved with planning and planting projects. In the post-war period, fear of slums developing in the cities was a significant public concern. Yet, at the same time, urban expansion outside municipal boundaries also led to concerns about “sprawl” and the loss of productive agricultural land from low-density suburbanisation (Perkins et al., 1993; Gatley & Walker, 2014).

The 1970s saw a trend towards increased formal provision for community participation. The Local Government Act 1974 introduced “community councils”, which could represent local opinion and encourage and coordinate activities for the general wellbeing of the residents in the community. This increased emphasis on community participation was also evident in the Town and Country Planning Act 1977. That Act expanded objection rights, so that a person or body affected, or any body or person representing some relevant aspect of the public interest, could object to a scheme or planning application. The 1977 Act also introduced public consultation, by enabling submitters to make submissions about draft schemes.

The focus and style of planning changed during this time. Planning became more politically orientated and based upon bargaining, and conflicts were brought into the open forum of local government politics (Perkins et al., 1993). The RMA introduced extensive public consultation and participation requirements. Interested people could make submissions on proposed Plans or Plan changes and on resource consent applications, be heard at council hearings concerning plans and consents, and could appeal certain matters to the Environment Court. Councils had to consult with specified people and groups when making plans and policy statements.

Urban planning is a form of regulation and, like all forms of regulation, is subject to “capture” by groups who stand to benefit from its application. For example, urban planning can limit the form, scale and pace of change in communities, thereby protecting the amenity of existing residents. Critics of urban planning such as Adams (n.d.) argue that planning is always open to capture by wealthy or influential residents to promote property values and special interests. For example, zoning of land use appeared in the United States in the 1880s, ostensibly to separate incompatible land uses such as industry and residential areas. Yet the first zoning ordinance in the United States – in Modesto, California in 1885 – was used to restrict laundries and wash houses (all operated by Chinese) to a section situated on the west or ‘wrong’ side of the tracks. Adams argues that the planning practice of today is even more focused on protecting property values.

The impact of public participation and opinion in planning was demonstrated during the Auckland amalgamation process. A number of proposed policies and plans were changed in response to public opinion. For example, the Proposed Auckland Unitary Plan (PAUP) proposed rules that would allow higher-density housing in suburbs. The proposal faced significant community resistance. The Auckland Council eventually scaled back intensification plans that would have rezoned some suburbs to allow terraced housing and apartments (Box 2.3).

F2.7 The public have always shown a strong interest in planning matters. Over time, successive planning frameworks have included more formal rights for the public to be consulted and/or object to land use rules and proposals.
Chapter 2 | Cities, growth, and land for housing 45

Rezoning to promote development can also be captured by landowners seeking to make gains from the uplift in land values. A recent study by two researchers at the University of Queensland investigated landowner relationship networks and political lobbying behaviour between 2007 and 2012. In Queensland, the Urban Land Development Authority took planning control away from local councils in selected areas in order to increase the speed and scale of development. The process increased land values in the selected areas. The research found that “connected” landowners owned 75% of land inside the rezoned areas, and only 12% outside, capturing A$410 million in land value gains out of the total A$710 million from rezoning. 11 The authors conclude that if their study is representative, then over the last few decades billions of dollars of economic rent have been transferred from the general population to connected land owners through rezoning in Australia (Murray & Frijters, 2015).

The next section presents data on land and property values in New Zealand and looks at the impact of land values on the size and price of new dwellings. Section 2.6 also provides data on the growth in density of

---

11 Relationship networks comprise corporate ownership and directorship connections of land owners and their companies, connections from employing professional lobbyists, and property industry group membership. There were marked differences in the networks of the successful property developers and the unsuccessful ones.
some New Zealand cities and reports on an attempt to measure the regulatory stringency of land use regulation in nine of New Zealand’s fastest growing councils.

2.6 What do we find in New Zealand’s fastest growing areas?

New Zealand has experienced relatively high population growth over the past decade compared to the OECD average. Much of this growth has been concentrated in urban areas (Figure 1.4).

The price of land in urban areas

Section 2.3 sets out the impact the competing dynamics of population growth and local council polices on the price of land:

- residential land prices in unconstrained cities will rise as the population increases (Figure 2.4);
- density controls, such as a height restriction, would see the price of land decline where the controls “bite” in areas closer to the centre of a city, and rise further out (Figure 2.5);
- poorer transport investment and higher commuting costs increase the price of land closer to a city’s centre (Figure 2.6); and
- an urban limit increases the price of land just inside the limit.

Regulations that restrict the number of dwellings that can be built on each unit of land reduce the value of that land to a developer, because such restrictions limit its use. Yet when the population is growing, the overall price of land will still be more expensive than in the absence of restrictions due to constrained supply.

Figure 2.8 shows the growth in land values in the 10 high-growth councils that are the focus of this inquiry. Prices in all areas increased, but Auckland and Queenstown nominal land prices rose dramatically after 2004–2005. In Auckland’s case, the price growth might reflect the introduction of the Local Government (Auckland) Amendment Act 2004. This Act:

- required all Auckland territorial authorities to give effect to the Auckland Regional Growth Strategy, which strongly promoted meeting population growth through intensification; and, at the same time,
- prohibited territorial authorities or the Environment Court from extending the Auckland MUL without the agreement of the Auckland Regional Council.

However, this assumes that by 2004 the available residential land in Auckland was already becoming scarce.

---

12 Restrictions can include height restrictions, but also ceiling heights, minimum floor-space requirements, maximum site coverage, and rules about the required setback from the street.
Figure 2.8 Nominal median land values

Source: Productivity Commission analysis of Quotable Value data.

Land value comprises between 40% and 60% of total property value in the 10 high-growth councils that are the focus of this inquiry (Figure 2.9). The land value share of total property value is now significantly higher in Auckland than in other cities.

Figure 2.9 Land value as a share of total property value

Source: Productivity Commission analysis of Quotable Value data.
Skewed dwelling production

The Commission noted in its *Housing affordability* (2012) report that rising land costs contributed to the decline in the production of lower-cost new dwellings (p. 43). The effect can be seen in the production of more expensive dwellings (Figure 2.10).

**Figure 2.10**  The value of new housing relative to existing housing stock (5-year averages)

![Graph showing the value of new housing relative to existing housing stock over time.](image)

*Source:* Productivity Commission calculations using Quotable Value data.

*Note:*
1. In the early 1960s the value of most new housing was lower than the average value of existing housing. In comparison, more than half of new builds in 2014 were valued in the upper quartile of all housing stock.

Professor Laurence Murphy, of the University of Auckland’s Business School, offers an explanation for why only top-of-the-market dwellings are constructed, and how they inflate housing prices. Murphy argues that it requires an understanding of the factors that underpin the decision making processes of developers. He explains the residual value model:

Residual value is a central concept affecting all development feasibility studies and refers to the maximum bid that a developer will make for a site in order to undertake a particular development (Jowsey, 2011; Whipple, 2006). The residual value is simply the difference between the total value of the proposed development and the total costs of construction (including profit). (Murphy, 2013, p. 4)

Typically, banks want to see where the developer’s return is coming from and a developer needs to construct dwellings that sell at the top of the market if the developer is to be a successful land purchaser. Murphy argues that a developer cannot build a modest house with the expectation of selling the total property for say $500,000 because they will be outbid for the land by the developer who believes that by building a more expensive house, they can sell the total property for $700,000 (see Table 2.1 for an example). This is what drives the race to the top for both new house prices and land prices.
Table 2.1  Scenarios demonstrating the effect of the residual value model on land price

<table>
<thead>
<tr>
<th>Unit price</th>
<th>Number of units</th>
<th>Gross development value</th>
<th>15% profit required</th>
<th>Costs of construction</th>
<th>Willing to pay for land</th>
</tr>
</thead>
<tbody>
<tr>
<td>$500k</td>
<td>10</td>
<td>$5m</td>
<td>$750k</td>
<td>$3m</td>
<td>$1.25m</td>
</tr>
<tr>
<td>$600k</td>
<td>10</td>
<td>$6m</td>
<td>$900k</td>
<td>$3.3m</td>
<td>$1.80m</td>
</tr>
<tr>
<td>$700k</td>
<td>10</td>
<td>$7m</td>
<td>$1050k</td>
<td>$3.6m</td>
<td>$2.35m</td>
</tr>
</tbody>
</table>

Source: Productivity Commission, based on panel discussion at the Urban Health and Sustainability – Affordable Housing Summer School, Otago University, Wellington, 11 February 2015.

The average size of new dwellings grew by more than 50% between 1989 and 2014 (Figure 2.11). This growth was driven mainly by larger houses. In contrast, apartments have increased only slightly in average size over the past quarter-century, pointing to their importance as a way of getting more efficient use of land.

Figure 2.11  Average floor size of new dwellings

Differing intensification patterns in New Zealand cities

In an unconstrained market, cities facing population growth would expect to see rising land prices at the urban centre and greater intensification of dwellings as developers and purchasers try to make more
economical use of land. While few, if any, land markets fit the description of an “unconstrained market”, the Alonso-Muth-Mills model provides a useful baseline against which to compare the actual performance of cities. The Commission analysed changes in the density of selected New Zealand cities over three census periods (2001, 2006 and 2013). The results of the Commission’s analysis are outlined below, in Figure 2.12 to Figure 2.16. The figures describe the relative contribution to intensification of different segments of the city (defined in terms of their distance from the city centre) and the overall change in the city’s density. The ‘overall’ figure is the sum of the contributions made by the different parts of the city to density.

Some New Zealand cities (eg, Wellington and greater Hamilton) behave largely as the Alonso-Muth-Mills model would predict, with intensification concentrated towards the urban centre, especially between 2001 and 2006 (Figure 2.12 & Figure 2.13).

Other cities have behaved differently. In Auckland, the centre has made a relatively subdued contribution towards intensification. Between a third and half of the city’s intensification between 2001 and 2006 occurred between 10 km and 20 km from the centre (Figure 2.14).

---

13 The Commission’s analysis produces results that can be compared to that predicted by the Reserve Bank of Australia as the Kulish, Richards & Gillitzer (2012) model although these results are for dwelling density rather than population density. The Commission has focused on dwelling density because population intensification may simply reflect overcrowding rather than a housing supply response. However, the results of the dwelling density-based analysis should not materially differ from the outcomes predicted by Kulish, Richards & Gillitzer (2012), as their modelling assumes constant household sizes. As a result, increases in population density in the Kulish, Richards & Gillitzer (2012) model equate to increases in dwelling densities.
A number of commentators have noted Auckland’s unusual density profile. Hill Young Cooper concludes that when Auckland’s actual urban density (dwellings per ha) is compared to land values, then it is apparent that there is a significant deviation occurring close to the CBD. The densities in this area have not adjusted to the higher land prices. This is likely to be the result of the heritage zoning in this area. This suggests a significant imbalance between supply and demand, one that is likely to drag up the median house price. (sub. 65, p. 16)

In greater Christchurch, the centre of the city (ie, up to 10 km from Cathedral Square) detracted from overall intensification after 2006 (Figure 2.15). This most likely reflects the 2010 and 2011 earthquakes, which destroyed a large share of the housing stock in the city. The largest contribution to intensification after 2006 occurred 20–30 km from the centre, in the Selwyn and Waimakariri districts. Between 2001 and 2006, greater Christchurch had an intensification profile similar to Auckland, with the heart of the city (<5 km from Cathedral Square) making a relatively weak contribution, even before the Canterbury earthquakes.

Tauranga experienced relatively high overall intensification rates (an increase of more than 14% between 2001 and 2006, and more than 11% between 2006 and 2013) in a comparatively small area of land (Figure 2.16). The lion’s share of the intensification effort (ie, more than half) was made by suburbs 5–10 km from the centre.
Figure 2.16  The contribution to intensification by distance from the centre of Tauranga

Source for Figure 2.12 to Figure 2.16:  Productivity Commission analysis of Statistics New Zealand data.
Notes to Figure 2.12 to Figure 2.16:
1. Distance to centre of each city studied is measured as a linear distance between centres and each area unit, and is categorised into seven categories: <5km, 5–<10 km, 10–<20 km, 20–<30 km, 30–<40 km, 40–<50 km and 50 and more km.
2. Dwelling density is the number of occupied private dwelling for each square kilometre, \( \text{density}_i = \frac{\sum \text{dwelling}_i}{\text{area}} \), where \( i \) and \( t \) indicate distance category and time. Area has held constant over the last three Census.
3. Bars in the ‘overall’ category in each chart provide density changes in percent between two Census, \( \frac{\text{density}_t}{\text{density}_{t-1}} - 1 = \frac{\sum (\text{dwelling}_t - \text{dwelling}_{t-1})}{\sum \text{dwelling}_{t-1}} \), is the sum of changes in dwelling counts in individual distance categories over total dwelling counts in previous Census. Other bars present contributions to overall growth from individual distance category, expressed as \( \frac{\text{dwelling}_t - \text{dwelling}_{t-1}}{\sum \text{dwelling}_{t-1}} \).

F2.10 New Zealand cities have differing intensification profiles. Wellington and Hamilton have seen significant intensification close to the city centre. In other cities, the biggest contribution to intensification has occurred in outlying suburbs.

What is known about the comparative regulatory stringency of councils?

No consistently collected or comparable data is available on the stringency of land use regulation in New Zealand. The Ministry for the Environment collects information from local authorities on process aspects in the implementation of the RMA, such as the time taken to approve plan changes and obtain resource consents (MfE, 2014). The two-yearly Ministry for the Environment RMA survey of local authorities is being replaced by an RMA national monitoring system. Even so, the system will not capture the stringency of land use regulation across local authorities.

Some detailed local information is available in council District Plans about council rules and regulations and where they apply. But a comparison of specific rules such as height restrictions or minimum lot sizes across councils is problematic, as different councils have different zoning categories and may use different types of rules to achieve the same objectives. Plans tend to contain only limited information on the stringency with which different rules are applied in practice (eg, the proportion of developments that council allows to vary from District Plan requirements).

F2.11 No consistently collected or comparable data is available on the stringency of land use regulation in New Zealand.

The Commission contracted NZIER to survey New Zealand’s fastest-growing councils about aspects of land use regulation within their jurisdictions. The survey methodology follows that used by Gyourko, Saiz and Summers (2008) to create the WRLURI.
Ten councils were invited to participate in the survey. The responses of the nine councils that responded were used to construct an index of the stringency of land use regulation using the weights used in the WRLURI. An important caveat is that the WRLURI methodology relies on councils self-reporting their responses to the questions. Responses are therefore subjective and may be subject to inconsistencies, bias or strategic responses.

The WRLURI captures three components of regulation:

- the rules – such as minimum lot size requirements or requirements on developers to provide dedicated open spaces;
- the characteristics of the jurisdiction that can influence development – such as the influence of local community groups, local opposition to growth and the council’s budget constraints; and
- process considerations – such as delays in getting development approved.

While Gyourko, Saiz and Summers (2008) combine all three components into a single index, the NZIER study treated the responses relating to delays in getting consents and approvals for development separately. Gyourko, Saiz and Summers rely heavily on the argument that delays are the result of complex and wide-ranging rules and therefore are a good indicator of regulatory stringency. This factor may not be valid in the New Zealand context where there is a statutory requirement to process resource consents within 20 working days.

Rules and characteristics that influence land use regulation

Figure 2.17 presents an index of the components relating to local rules and regulations and the characteristics that can influence development for the nine New Zealand councils.

“Rules” summarises the responses to questions about specific land use regulations, such as minimum lot sizes, requirements to provide affordable housing, charges that developers may incur for infrastructure development and charges instead of providing open spaces. While similarities exist across most councils, Waikato District Council, Whangarei District Council and Wellington City Council have less stringent rules.

“Characteristics” summarises survey responses about the influence of different groups in the planning, zoning and approval of housing developments. Wellington and Tauranga City Councils, and Waikato and Selwyn District Councils report characteristics in this sub-index that are likely to lead to them being more stringent in their application of land use regulation. NZIER (2015) provides more detail on the survey responses relating to council characteristics. Community pressure is reported to be highest in Wellington City and the Selwyn District. The Selwyn District Council and Tauranga and Wellington City Councils report strong regional council involvement in planning. Courts are reported to be relatively more involved with planning by the Queenstown Lakes District Council (QLDC). Tauranga City Council reports relatively high values for the influence of the city budget on residential development. Tauranga City Council and QLDC note particularly strong citizen opposition to developing apartments and townhouses.

In combining the “rules” with “characteristics”, the overall picture reported in the responses is one of considerable variation between councils. According to the index, the Waikato and Selwyn District Councils, and the Wellington and Tauranga City Councils have the more stringent regulation, Waimakariri District Council sits in the middle of the bunch and Christchurch City Council, QLDC, Whangarei District Council and Hamilton City Council are the least stringent.

---

14 Responses were received from Christchurch City Council, Hamilton City Council, Queenstown Lakes District Council, Selwyn District Council, Tauranga City Council, Waikato District Council, Waimakariri District Council, Wellington City Council and Whangarei District Council. Auckland Council declined to participate.

15 The full report (NZIER, 2015) is available along with raw council responses on the Commission’s website. While the NZIER methodology (survey questions and weightings of responses) followed as far as possible the methodology of the WRLURI, some adjustments were made to account for the New Zealand context.

16 The Commission is aware, for example, that Hamilton City Council’s responses are inconsistent with the information contained in their submission to the inquiry. Even so, the survey represents the first attempt at measuring land use regulation in New Zealand using an internationally recognised methodology.
**Figure 2.17** Variation in the stringency of land use regulation across nine New Zealand councils

Source: NZIER, 2015.

Note: 1. The index combines the impact of “rules” and “characteristics” sub-indices formed from responses to particular survey questions. The survey questions responses are weighted according to the weights within the WRLURI. Positive index values indicate more stringent land use regulation, while negative values indicate less stringent land use regulation.

**Delays in acquiring approval for development projects**

The survey asks several questions about delays in the consenting and approval process. Five of the nine councils report the statutory time for processing resource consents (20 working days), but differences are large where they exist. The fastest two territorial authorities complete consents in less than a quarter of the time of the five slowest. Wellington City Council and Waimakariri District Council report much shorter time frames for attaining a consent than the other council respondents. Selwyn reports a relatively short time (less than three months) for the amount of time between approving an application for subdivision and issuing consent across a range of housing types. Figure 2.18 summarises the differences across councils.

**Figure 2.18** Delays in acquiring approval for development across councils

Source: NZIER, 2015.

Note: 1. The delay index is constructed by taking the response of average number of days to the question “What is the current average length of time required to complete resource consents for residential developments in your community?” and the response of average number of months to the question “For apartments and townhouses, what is the typical amount of time between application for rezoning and issuance of a building permit for development?” The sub-index is normalised to have a mean of zero. Delay has a relatively high weight in the WRLURI, but is excluded from the stringency index reported in Figure 2.17.
A survey of fast-growing New Zealand councils found universally restrictive land use rules, but considerable variation in the overall stringency of land use regulation. This variation is due in large part to:

- differing levels of influence over planning by the courts, regional councils and community groups; and
- differences in the time taken to get approvals for development.

2.7 Impacts on people and the economy

High land prices, regulatory barriers that restrict the supply of land (or prevent more efficient use of land) and skewed housing production have a number of negative impacts on individuals and on the New Zealand economy. New Zealanders pay a comparatively high share of their incomes on housing and face a housing supply that is increasingly ill-suited to their needs. People on lower incomes have fewer opportunities to enter the property market and accumulate wealth. The high cost of housing and a shortage of suitable housing can lead to overcrowding. High housing prices also constrain the ability of the economy to adapt to the demand for labour, and may lead to greater economic instability.

Housing market impacts

The price of housing and the share of income spent on housing costs

Housing costs are a function of the capital cost, the size of the mortgage that must be raised and mortgage interest rates. If the cost of housing rises faster than the growth in incomes; the share of households’ spending on housing will increase. Figure 2.19 depicts the percentage of households that spend more than 30% of their disposable income on housing in New Zealand. The average share of disposable household income spent on housing is high in New Zealand compared to many other OECD countries (Figure 2.20).

Figure 2.19 Share of households that spend more than 30% of their disposable income on housing in New Zealand


17 This spending includes both rent and mortgage expenses.
Restrictions on density prevent the construction of smaller and less expensive dwellings on smaller parcels of land closer to the centres of cities. This means that people who do buy a property closer to the centre of a city are restricted in their choice of housing type and may end up buying or renting a property that is larger than they might have preferred. Restrictions on density also affect older people who might prefer to downsize, but are unable to buy a suitable small home or townhouse in the area where they currently live.

Section 2.6 explained how higher land prices led to the production of larger and more expensive housing. The tendency of New Zealand housing markets to produce larger, more expensive dwellings is likely to be increasingly at odds with demand because of demographic trends. The average size of households is forecast to shrink over the coming 20 years (Table 2.2). The number and proportion of couple-only and one-person households is projected to increase with most of the expected growth in population coming from single-person and couples-only households (Figure 2.21).

Table 2.2  Projected population and household growth, 2011–2031

<table>
<thead>
<tr>
<th></th>
<th>Population</th>
<th>Households</th>
<th>People per household</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>4 425 000</td>
<td>1 672 000</td>
<td>2.6</td>
</tr>
<tr>
<td>2031</td>
<td>5 149 000</td>
<td>2 089 000</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Source: Statistics New Zealand, 2010; 2012b.
An increase in the price of housing will be felt as a rise in property values for existing property owners and in greater difficulty in making the first rung on the property ladder for people without property. This shows up in declining home ownership (Figure 2.22) and the rising importance of the private rental market.

**Figure 2.22** Percentage of households that owned or partly owned their dwelling or held it in a family trust

In its 2012 inquiry into *Housing affordability*, the Commission took the view that it is desirable that the housing market work in such a way as to maximise the options available for housing for all New Zealanders regardless of income or tenure choice. The Commission concluded that to achieve housing affordability a housing market must have both depth and diversity of housing typologies and tenure choices.

Since the early 2000s, renting has been a more accessible option for many households. Rent increases have been significantly slower than real house price inflation, with the ratio of rents to house prices declining as a result. However, as the Commission’s *Housing affordability* report explained, renting in New Zealand can be
insecure and the available stock may be of poor quality. Renters consistently report lower satisfaction with the quality of their housing than owner-occupiers (Figure 2.23).

**Figure 2.23** Percentage of people reporting major problems with their housing, by tenure type

![Percentage of people reporting major problems with their housing, by tenure type](image)

*Source:* Productivity Commission analysis of Statistics New Zealand data.

### Social impacts

#### A disproportionate impact on the less well-off

A number of studies have shown that more stringent land use regulations have a disproportionate effect on the less well-off. A large US study quantified the impact of regulatory restrictiveness on the low end of the rental and housing market in US cities (Malpezzi & Green, 1996). Bottom quartile rents in metropolitan areas with more stringent land use regulation were 20% higher than in less stringently regulated areas and bottom quartile house values were more than 60% higher. The largest price effects of restrictive land use regulations occurred in the market for lower-value housing.

In work on the impact of Auckland’s MUL, Zheng (2013) found that upward pressure on residential land prices on Auckland’s urban fringe had a much larger impact on prices at the lower end of the housing market:

> Lower priced land is more often found further out on the fringes of cities. … When an artificial ‘fence’ delineates residential land from non-residential land on the urban fringe, it limits the supply of lower priced land, with a resulting impact on prices at the lower end of the housing market. (p. 10)

The effect is a combination of an urban limit and other regulatory constraints that limit the density within the city. Density controls tend to result in less well-off people moving out towards the urban fringe, while the urban limit restricts the supply of lower-priced land on the fringe. This increases the price of housing at the lower end of the market.

### Household crowding

One manifestation of rising housing costs and a shortage of housing is household crowding. Although household crowding in New Zealand has declined over time (Statistics New Zealand, 2012a), it has remained high in Auckland (Figure 2.24). This is reflected in larger average household sizes, inadequate housing supply in the city and higher housing costs. New Zealand has a higher crowding rate than the United Kingdom, Canada and Australia, but a lower rate than the United States (Goodyear & Fabian, 2012). Around half of people in crowded households in New Zealand in 2013 lived in Auckland.
Household crowding has been estimated as leading to more than 1,300 hospital admissions each year from infectious diseases. Māori and Pacific Islands people are overrepresented in both crowding and infectious disease hospitalisation figures (Baker et al., 2013).

**Figure 2.24 Share of New Zealand’s population living in crowded and severely crowded housing, 1991–2013**

Source: Productivity Commission analysis of Statistics New Zealand data.

Note:
1. Crowding is defined using the Canadian National Occupancy Standard (CNOS). CNOS defines a household as crowded if it fails to meet all of the following characteristics: (1) Children aged under 5 may share a bedroom, but children aged 5 to 18 should only share a room if they are of the same sex. (2) Couples and people aged over 18 should each have their own bedroom. (3) No more than 2 people should share a room. “Crowded” means that one extra bedroom is needed to meet the CNOS standard. “Severely crowded” means that two or more extra bedrooms are required to meet CNOS.

**Pressure on public finances**

Ultimately, government bears part of the cost where unaffordable or inadequate housing leads to higher demands on the welfare system to meet housing needs (through, for example, accommodation supplements and state-sponsored social housing). These expenses are already significant, with yearly public financial support to assist with the housing costs of individuals estimated to exceed $2 billion in 2015/2016.18

F2.13 Stringent land use regulations have a disproportionate impact on the less well-off and put pressure on public finances.

**Impact on wealth and inequality**

Recent research by Rognlie (2015) suggests that, in many countries, housing plays a much more important role in income, wealth generation, and inequality than it once did. Rognlie’s work comes out of the debate re-ignited by Thomas Piketty (2014) about the relative income shares between labour and capital. The central thesis of Piketty’s *Capital in the Twenty-First Century* is that the share of aggregate income of those who own capital is increasing, while the share of those who generate income from their labour is decreasing. This matters to the extent that capital income, which tends to be highly concentrated, can contribute to inequality.

Rognlie makes several contributions, but as a purely descriptive matter he shows that the recent behaviour of income shares is misunderstood. Rather than experiencing a steady rise, the net capital share for large developed economies has followed a U-shaped trajectory in the post-war era, and its long-term expansion originates entirely in the housing sector. This implies that Piketty’s concern about a rising capital share being concentrated in the hands of a few is unfounded, as home ownership is relatively broadly based. But, it also raises concerns about the relative income share of those who own housing and those who do not. He concludes that “given the important role of housing, observers concerned about the distribution of income should keep an eye on housing costs” (p. 32). Rognlie goes on to note the particular concern that the rising...

---

18 Includes the KiwiSaver Homestart Grant and Community Group Housing MCA (Vote Building and Housing), Part Payment of Rent to Social Housing Providers and Accommodation Assistance (Vote Social Development).
capital share of income generated by housing may be as a result of land use regulation and other restrictions on residential construction.

Muellbauer and Murphy (2008) comment on the issue of the high cost of housing and inequality in the United Kingdom:

This is seen in the pricing out of the housing market of people without pre-existing housing equity or family connections with such equity. This perpetuates disadvantage through the generations…. Another consequence of the rise in real house prices has been a redistribution of living standards between the generations – from those younger than their early thirties to older people. (p. 14)

Data limitations mean that Rognlie’s analysis of the relative income shares between labour and capital cannot be repeated for New Zealand. However, analysis of the longitudinal Survey of Family, Income and Employment reveals that:

- Most of New Zealanders’ assets are in their homes with New Zealanders holding a similar proportion of their net wealth in property as individuals in other OECD countries (Le, Gibson & Stillman, 2010).

- Wealth is unevenly distributed. In 2010, the poorest 30% of the population had almost no wealth. About 20% of total wealth was shared by the bottom 70% of the population. By contrast, the top 20% of the population owned almost 70% of total net wealth, with the top 10% owning more than half of the total net wealth.

- Homeowners in New Zealand have higher net wealth than non-homeowners. The absolute increase in net wealth was higher for homeowners who owned a home throughout the entire period 2004–2010, compared to those who owned a home for only part of the period or those who were not homeowners over the period.

- Owner-occupied housing is not an important component of net wealth for those with low net wealth, as very few people in this part of the distribution own their own home. For those in net wealth deciles 5 to 9, housing makes up a significant share of net wealth. While the absolute amount of net wealth held in the family home is greatest for those in decile 10, owner-occupied housing is a less important component for this top decile because other assets account for a larger share of net wealth.

Figure 2.25  Average net wealth by decile

Housing makes up a significant share of many New Zealanders’ wealth. High housing prices have implications for the ability of some groups to accumulate wealth and for the distribution of wealth across the community.
Economic impacts

Risks to macroeconomic stability

The stock of residential housing, valued at about $768 billion, is the largest component of wealth of New Zealanders. Households also spend a significant share of their income on housing. Instability and poor performance in the land supply and development market can be transmitted to wider economic volatility and performance due to the links between house prices, credit availability, and household consumption and indebtedness.

Huang and Tang (2012) in a study of 300 US cities showed that restrictive residential land use regulations and geographic constraints are linked to larger booms and bust in housing prices. Evans and Guthrie (2012) developed a model to determine what fraction of actual price changes observed in 95 US cities over the period 1995–2010 could be explained solely by observed changes in construction costs, disposable income, interest rates and population. A key question is whether cities with constrained development opportunities due to geography and land use regulations experience much greater price volatility than less-constrained cities. They found that, for cities with relatively unconstrained development opportunities, housing prices could be predicted by changes in construction costs, disposable income, interest rates and population. Further, they observed changes in these variables cannot explain the boom and bust pattern observed in many other cities with constrained development opportunities. Importantly,

[s]mall reductions in the long-run average level of the short-term interest rate and small increases in the long-run average growth rate in demand during the boom period generate large price swings in cities with constrained development opportunities, while leaving prices in cities with unconstrained development opportunities relatively untouched. For example, a one percentage point reduction in the long-run average level of interest rates raises predicted prices by more than 80% in relatively constrained cities with above-median demand growth rates and below-median property tax rates, and by less than 10% in otherwise identical unconstrained cities. (p. 1)

Creating an artificial scarcity in land incentivises speculation, and competition for land creates overly optimistic speculation. Milgrom and Weber (1982) point out that when people with varying beliefs compete for something of uncertain value, the winning bidder will be the person who has made the greatest upward error in estimating its value – what they call “the winner’s curse”. Tideman (2004) argues that these winning bidders are those least likely to invest in developing land now, because that would mean foregoing the even greater investments that they (wrongly) imagine will be worthwhile when their imagined higher value arrives. Henry George made this point in 1879:

The confident expectation of increased prices produces, to a greater or lesser extent, the effects of a combination among landholders, and tends to the withholding of land from use, in expectation of higher prices. (George (1960) [1879] p. 125)

Glaeser and Nathanson (2015) argue that buyers of land look at past prices to inform their future forecast of the value of land; but that in doing so they wrongly assume that past prices reflected contemporaneous demand when, in fact, they reflected past buyers’ (then) future expectations of value. This model leads buyers to expect that recent house price increases will continue, to fail to anticipate the price busts that follow booms, and to be overconfident in their assessments of the housing market. Glaeser and Nathanson conclude that small errors in filtering information from past prices help to explain volatility, momentum and mean-reversion in house prices.

Volatile house prices created by restrictive regulation can affect macroeconomic stability through wealth effects. The owners of rapidly appreciating assets feel wealthier and may decide to spend some of these capital gains in advance. This was seen in New Zealand during the house price boom of the past decade, and remains a concern for the Reserve Bank as Auckland prices have risen rapidly again over the past few years. As the Deputy Governor of the Reserve Bank commented in 2014:

house price increases could cause households to increase their spending, reducing savings and putting additional pressure on overall domestic demand. The OCR [Official Cash Rate] increases that commenced in March are aimed at countering emerging inflation pressures in general, but their success, or otherwise, in moderating housing related pressures will be key. (Spencer, 2014, p. 12)
Interest rate rises to offset increased domestic demand increases the cost of borrowing to businesses and may discourage investment. Higher interest rates also put pressure on homeowners with high debt levels relative to their incomes (eg, new owners) and it becomes harder for people to enter the property market. As a result, the wider community can end up bearing the costs of gains created by an unduly restrictive planning system.

**Constraints on labour market performance and productivity**

Mobility of the labour force within and between regions and work locations helps to avoid labour market shortages and reduces the divergence in income levels between regions (Yates, Randolph & Holloway, 2006). Ganong and Shoag (2012) show that the decline in regional convergence in the United States is due to a large increase in housing prices and housing regulation in high-income and high-productivity areas. Regulatory barriers make it harder for people from lower-income areas to move to higher-income areas and enjoy the better employment opportunities available in higher productivity cities.

The impact of land use regulation in restricting labour market mobility and the potential for productivity gains in the US economy from the reduction in regulatory barriers has been explored by Hsieh and Moretti (2015). They argue that constraints to housing supply in high-wage cities price out workers who would be more productive by moving to take up the opportunities available. Reducing regulatory barriers would therefore increase a country’s GDP.

Constraints to housing supply reflect both land availability and deliberate land use regulations. We estimate that holding constant land availability, but lowering regulatory constraints in New York, San Francisco, and San Jose cities to the level of the median city would expand their work force and increase U.S. GDP by 9.5%. (p. 34)

The authors conclude that restricting housing supply in dynamic labour markets imposes significant externalities on a country’s economy.

---

### F2.15

Restrictive land use regulations limit the ability of people to seek better employment opportunities in cities, are a barrier to potential productivity gains, and may create risks to macroeconomic stability.

---

### 2.8 Conclusion

Cities are national assets. When they function well, they contribute to higher national incomes and wealth (through higher productivity) and better quality of life (through having sufficient scale to support a wider range of amenities). It is in the country’s interest to have large cities that are able to grow and accommodate the people who move to cities seeking the greater employment and life opportunities available there.

In the absence of constraints, cities will respond to population increases by making more efficient use of land, through building higher buildings and smaller dwellings in their centres. The functioning of cities can also be enhanced by well-targeted policy interventions, such as investments in transport infrastructure. However, the interest of the nation in having cities grow may not be reflected in local choices and planning systems. Local residents may not wish to bear the costs of growth (eg, congestion) and may act to slow or constrain the development of their cities. Where such constraints arise, they can create costs and risks for the wider public and especially for those on lower incomes. Easing unnecessary constraints to allow cities to reach their full potential is a key focus of this inquiry.