

2 High-performing cities

Key points

- Seventy percent of New Zealanders live in cities of over 50 000 people; one third live in Auckland. High-performing cities are essential for the wellbeing of New Zealanders.
- High-performing New Zealand cities contribute to wellbeing by:
 - providing more productive job opportunities and so raising incomes;
 - providing better learning opportunities; a wider range of cultural, recreational and environmental amenities; and a more attractive place to live; and
 - creating great urban spaces and places for Māori to be Māori.
- Cities provide productivity benefits to firms and workers. Some of these benefits emerge from people being in close proximity. Such benefits make a relatively modest, but not negligible, contribution to national productivity.
- Cities increase in size as a result of innumerable decisions that individuals and their families make, and that firms make, about where best to locate. The benefits of growth arise mostly from the complex and unpredictable collective outcomes of these individual decisions, and not from the deliberate choices of planners to promote urban growth and density.
- Factors such as climate, the attractions of an educated workforce and coastal amenities have driven urban growth in developed countries, including New Zealand, in recent decades.
- Changes in technology and consumer preferences and shifts in patterns of trade can cause urban populations to shrink. Undiversified urban areas that produce a narrow range of products are particularly at risk. Many small rural centres in New Zealand face declining populations.
- The growth of cities creates costs, such as pressure on infrastructure and the availability of affordable housing and development capacity. Growth can also bring increased pollution, crime and segregation of people across space by income.
- High-performing, well-governed cities manage the costs of growth while reaping the benefits by:
 - ensuring sufficient development capacity to meet demand;
 - effectively coordinating infrastructure investments with land supply and population growth (without over-investing in infrastructure);
 - managing congestion and pollution; and
 - ensuring development supports social and economic participation of residents from all areas of the city.
- 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 negative spillovers for the wider economy.

High-performing cities offer many benefits to residents. They provide a vibrant and rewarding place for people to live and work. High-performing cities need to get many things right. Effective land-use planning makes a vital contribution. Effective planning secures the advantages of city living, while managing the costs, all in a complex, evolving and unpredictable setting.

This chapter identifies the drivers and determinants of urban performance. It provides a context for discussing the rationale for planning (Chapter 3) and for identifying the legislative, governance and institutional arrangements that will deliver urban planning (Chapter 13). Later chapters discuss in more detail the issues briefly discussed here, such as the effect of restrictive planning on house prices (Chapter 8), and the provision of infrastructure (Chapter 10 and Chapter 11).

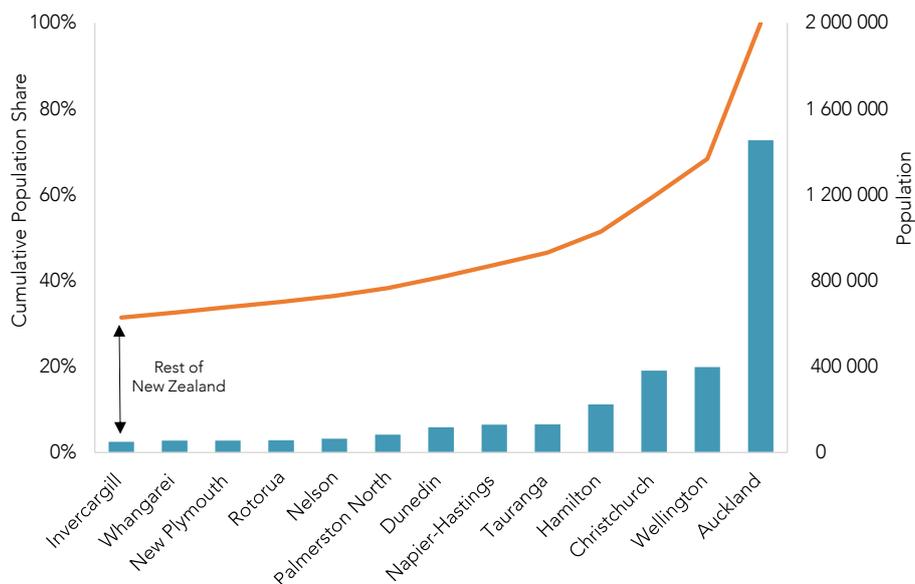
This chapter discusses

- the benefits of cities to their residents;
- the economic advantages of cities to regions and countries;
- why cities grow (and why some decline);
- what makes for high-performing cities that promote wellbeing; and
- interactions between local land-use planning and national policy.

2.1 The benefits of high-performing cities

Most New Zealanders live in cities. Roughly one-third live in Auckland. Some 38% live in cities with between 50 000 and 400 000 residents. The remaining 30% live in smaller centres or rural areas (Figure 2.1).

Figure 2.1 Distribution of New Zealand's population across cities, 2015



Source: Statistics New Zealand.

New Zealand's cities are small from a global perspective. Auckland's population was about 1.42 million people in 2013, a little under three times larger than the population of the greater Wellington region, but still much smaller than either Sydney (4.37 million) or Melbourne (4.18 million). Many of the world's metropolises are far larger still (Angel, 2012; OECD, 2015a).

City performance is important; first simply because a large proportion of the population lives and works in cities. Second, cities offer particular benefits from bringing people together, known as "agglomeration economies".

Cities exist because there are economic factors that make it beneficial for firms and households to be located close to each other. For example, transport costs are lower if businesses operate within short distances ... the incentive for a supplier to move to a particular location increases if there are more manufacturing plants at the location...business might [also] locate close to each other because it makes face-to-face meetings easier. (OECD, 2015a, p. 40)

The economic benefits of cities come from access to a larger supply of goods, people and ideas (Duranton & Puga, 2004; Lewis & Stillman, 2005). Cities provide gains from scale and specialisation; improvements in

the probability and quality of matching between firms and productive inputs; and learning based on the generation, diffusion and accumulation of knowledge.

Cities (in comparison to smaller centres) provide benefits by:

- having both diverse and more specialised labour markets, so that workers and firms find it easier to make matches that best use their skills and capabilities (Bertaud, 2014); and couples, for instance, find it easier to get jobs that suit each partner's skills and preferences;
- providing more scope for firms to specialise in production, and so increasing trade between firms;
- providing larger markets and so more scope for firms to benefit from scale economies;
- exposing firms to more intense competition from alternative producers;
- providing more opportunities for firms and workers to learn from each other about how to make the best use of current technology and the gains from using new technology;
- stimulating the development and spread of new ideas, technologies and ways of doing business;
- sharing the fixed costs of physical and social infrastructure (such as roads, ports, airports, water supply, sewerage, higher education, specialised medical care and local government) over a larger base; and
- supporting larger transport nodes that connect directly with more places.

These benefits also extend to more varied and more specialised cultural and recreational opportunities, and sharing the cost of recreational amenities. High-performing cities are attractive places to live for all these reasons, and because they have a vibrancy arising from past history and a myriad possible interactions among residents and the evolving elements of the cityscape (section 2.2).

Māori, as the indigenous people, have a special relationship with the land on which New Zealand cities are built (Chapter 7). Many Māori aspire to live in cities with "great spaces and places for Māori to be Māori" (Ngā Aho & Papa Pounamu, 2016a, p. 31). Successful New Zealand cities will provide such spaces.

Cities, labour markets and skills

Larger cities provide more employment opportunities and more specialised employment for workers (Bertaud, 2014). For example, larger cities do not just offer jobs for lawyers; they offer jobs for lawyers specialising in, for example, corporate and commercial law, intellectual property law, labour and employment law, environmental law and tax law.

Workers with specialised skills are able to provide greater benefits to the firms and people who use their services. This greater specialisation allows people who work in large cities to be more productive and, as a result, they earn higher wages on average (OECD, 2015a). Workers earn higher wages in large cities, even when they first arrive (though still not as high as workers who have worked in the city long term) (Glaeser & Maré, 2001). At the same time, a greater choice of workers increases the chances of firms finding the right match of skills to meet their needs. This also helps to raise a firm's productivity.

Over time the wage benefits of being in the city increase (Glaeser & Maré, 2001). This is because workers can take advantage of rich opportunities in large cities for training, joining networks and sharing knowledge. Cities speed the spread of ideas and technologies (Glaeser, 1998; Glaeser & Gottlieb, 2009). A vibrant market for skills encourages workers to invest more in their human capital (Rotemberg & Saloner, 1991). Even when workers move from a larger city to a smaller city, their big city experience is still reflected in their earnings (Glaeser & Maré, 2001).

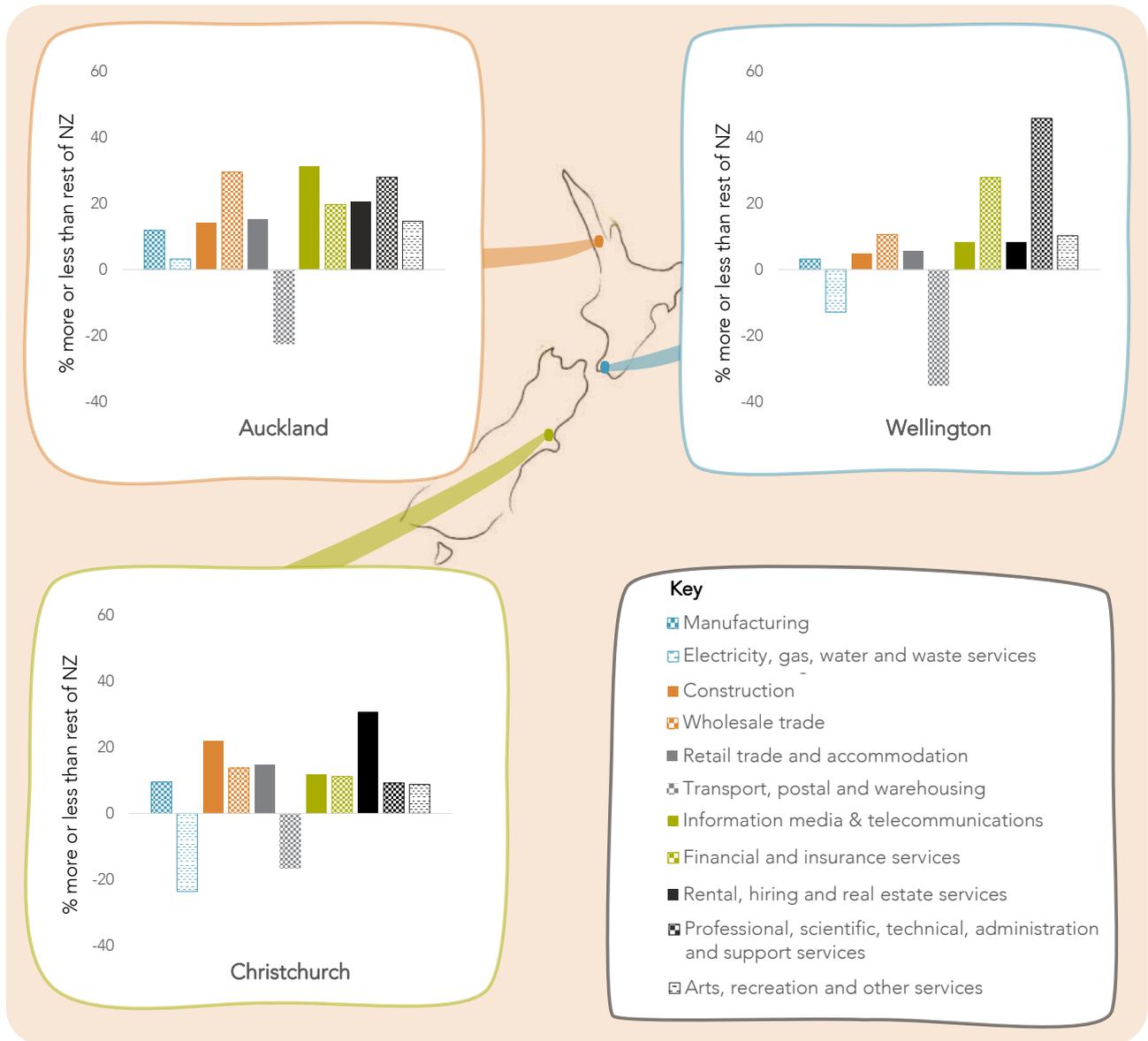
People with low skills may also benefit from locating in cities with many skilled people. Low-skilled people are attracted to cities and earn higher wages as a result, though they also face higher costs (section 2.3) (OECD, 2015a).

Knowledge-intensive services have been growing in importance in New Zealand and elsewhere. By 2014 they generated 20% of New Zealand’s GDP (MBIE, 2014a).² Most are located in the main cities, particularly Auckland (Conway & Zheng, 2014; Grimes, Le Vaillant & McCann, 2011; Chapter 4).

The productivity advantages of cities

A wide range of research provides evidence on the productivity advantages of cities (Melo, Graham & Noland, 2009). Cities are more productive than other places, and larger cities tend to be more productive than smaller cities, not only because they attract more productive firms and people, but also because firms and people are more productive if they locate in cities.

Figure 2.2 Labour productivity in New Zealand cities, compared to the rest of New Zealand, 2012



Source: Productivity Commission analysis of Statistics New Zealand data.

Notes:

1. The charts show, for each city, the industry by industry percentage deviation in median labour productivity across firms, from that for the rest of New Zealand (ie, excluding Auckland, Wellington and Christchurch).
2. New Zealand has no regional price deflators, so part of the higher measured labour productivity in urban areas is due to higher prices in those areas rather than real productivity margins.
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.

² MBIE (2014) used OECD definitions of knowledge-intensive services.

Figure 2.2 shows the higher productivity of New Zealand's biggest cities – Auckland, Wellington and Christchurch – compared to the rest of the country. Their higher productivity is due to a combination of:

- the composition of the industries that are located in cities;
- (within these industries) the movement of more productive firms and better skilled workers into cities; and
- the productivity benefits from firms and workers locating together in cities (agglomeration benefits).

Maré and Graham (2013), in a study of agglomeration effects in New Zealand, accounted for industry composition and more productive firms choosing to locate in cities. After allowing for these factors, they found that multi-factor productivity was an average 0.7% higher across industries for every 10% increase in employment density.³ The productivity increase associated with a 10% rise in density was as high as 1.8% in communication services, finance and insurance, and property and business services.⁴ These data compare with a median effect of 0.4% found by Melo, Graham and Noland (2009) in their meta-analysis of 34 studies of agglomeration economies.⁵

Yet the productivity advantages of larger cities should not be exaggerated. The research shows differences in productivity levels, not sustained differences in productivity growth rates. The possible effects on productivity levels of any feasible increase in city size in New Zealand are modest compared to overall national productivity growth rates.

For instance, labour productivity in New Zealand grew at an average rate of 1.9% between 1978 and 2012; while multi-factor productivity grew at an average rate of 0.8% per year. Labour productivity was 89% higher in 2012 than in 1978; multi-factor productivity was 33% higher (Conway & Meehan, 2013). Over the same period, the New Zealand population increased by 42%. Using the Maré and Graham (2013) result, agglomeration may have raised productivity levels by around three percentage points over this entire period, assuming population growth was largely in urban areas.⁶ These data suggest that agglomeration will never be a major driver of productivity growth.

Fast population growth can slow productivity growth in cities

While larger cities have an advantage in productivity levels, productivity may, in fact, grow more slowly in a fast-growing city (OECD, 2015a). For instance, it takes time for migrants to settle, adjust to local conditions and get the productivity benefits of locating in a new country (Maani, Dai & Inkson, 2015). National policy that determines the rates and make-up of migrant flows also has an effect on how city population growth translates into effects on productivity.

In addition, it takes time for a city to develop land, provide infrastructure and build houses to accommodate a larger population. A planning system that responds flexibly and quickly will reduce the negative effects of a rapidly growing population on productivity growth.

Agglomeration benefits are the collective result of individual choices

The positive effects of agglomeration do not happen automatically. They are the result of the location choices of individuals and their families, and of firms. They weigh up the benefits and costs of the different locations they could move to, given what they know about these locations. A legal firm might decide to move to (or stay in) the Auckland CBD because it expects the central city will have a good supply of top legal people to draw on. The legal firm also expects it will be near people in other firms, the courts and legal

³ Increases in multi-factor productivity (MFP) reflect better use of the inputs to production, in turn reflecting improvements in technology, production processes and business organisation. Increases in MFP also reflect the production of new goods and services. Maré and Graham (2013) use employment density as an empirical proxy for agglomeration. Other research uses different proxies, including, for instance, city size.

⁴ Maré (2016) produces new estimates of the effects of agglomeration on productivity in New Zealand cities that take account of regional differences in price levels, and differences in competitive intensity.

⁵ Melo, Graham and Noland (2009) made the point that the magnitude of agglomeration elasticities is likely to be context specific. There is no reason in theory to expect elasticities to be the same or even similar across different countries or industry mixes, or across cities with different configurations and infrastructure provision.

⁶ This also assumes that the effects are proportional across cities of different size.

institutions it needs to meet face-to-face. A firm that is competing to be at the top of its game will be willing to bear the cost of locating in the CBD – just to get and maintain that edge.

A good lawyer might want to live within easy commuting distance of the CBD because it offers a rich choice of legal firms to work for and makes collegial interactions with other legal professionals and academics easier. The lawyer might also think about a location that will work for their spouse and children. Of course they will also weigh up what they can afford and might need to trade off house quality and location with commuting times.

Firms and people will choose locations based on what they believe will give them the best opportunities for success. Lots of different considerations come into play. Every person, family and firm has their own unique mix of preferences, perceived opportunities and means to realise them. In effect, patterns of agglomeration in a city like Auckland result from millions of individual choices, each weighing a range of factors and preferences, and collectively drawing on a vast array of information.

Just as importantly, these location choices are not made only once, or at the same time. They are made successively and are revisited from time to time. Individual choices shape the city, and in turn, the emerging shape of the city – who locates where, the cost and type of housing, where and which firms set up business, commuting times and modes – influences later choices.

The productivity benefits of cities reflect the location decisions of firms and workers. Yet broad measures of those benefits do not shed light on the particular advantages to firms and workers of chosen locations. In most cases, only the individual firms and workers know what motivated their choices. Only they know how their decisions turned out. This points to the importance of policy and planning practices that facilitate, or at least do not unduly hinder, people and firms making their own location choices. Simply increasing a city's population or population density, while ignoring or obstructing locational preferences, is unlikely to be effective in raising productivity.

F2.1

The benefits of agglomeration result from innumerable decisions of people and firms to locate in cities. Planners do not have the information on personal preferences, capabilities, production technologies and business relationships that would enable them to engineer agglomeration benefits. Policy and planning that facilitate people and firms making location choices based on their own information and judgement are likely to produce the greatest benefits.

2.2 Why do cities grow?

A successful city grows while contributing effectively to the wellbeing of residents. This section looks at the sorts of factors that influence a person's choice about where to live, the complex interaction of those factors, and the unpredictability of the outcomes of urban growth processes. This section shows that the main drivers of city growth have changed dramatically over time. Over-specialisation in particular industries and lack of people with skills increase the risk of city decline.

Cities are complex adaptive systems

Cities evolve as the result of millions of individual decisions (section 2.1). The ongoing interactions of individual decisions over time make cities complex adaptive systems. As people make decisions about location, lifestyle and business, the shape and character of a city changes in ways that they may not have anticipated. For instance, small changes in preferred locations catch on and over time lead to large shifts in the style and character of neighbourhoods.

The evolution of the city shape depends on what has come before. The outcomes of past locational decisions determine what is possible in the future. The urban fabric is long-lasting, though it can be put to new uses as tastes and technology change. For instance, New York grew large before the tram car and then the automobile made suburban travel convenient. New York has a very different layout to Los Angeles, which grew large after the advent of cars (Frost, 1991; Glaeser & Gottlieb, 2006). Yet both cities support

lifestyles that make similar use of modern telecommunications, social media, working practices and ways of doing business.

Theorists have used a variety of models to depict cities as complex adaptive systems (Read, 2012). Models include those developed from network theory; from systems dynamics; from theories based on biological forms that economise on the use of energy; and from fractal geometry, where complex patterns are generated from the repeated application of simple rules (Forrester, 1969; Portugali et al., 2012). Some researchers have discerned common broad patterns across cities that reflect efficient transport networks (Batty & Marshall, 2012; Hillier, 2012). Yet layout at the neighbourhood level has significant differences that arise from cultural preferences (Hillier, 2012).

Over the longer run, the collective outcome of the individual choices that shape a city is to a large extent unpredictable (Batty & Marshall, 2012). Previously down-market suburbs near the city centre have become popular choices for urban professionals over recent decades. Tauranga was only a medium-sized town of 2 700 in 1926, but is now New Zealand's fifth largest city with a population of more than 130 000. Dunedin was New Zealand's fourth largest city in 1926, with a population of 85 000. Yet it has grown only modestly since, being overtaken by Tauranga, Hamilton and the combined population of Hastings and Napier (Grimes & Tarrant, 2013). Some New Zealand cities have plans that promote increased density, but developers and their buyers have continued to opt for more traditional suburban layouts. A lesson from complexity theory is that no single agent or group can control outcomes.

F2.2

City form evolves largely as the result of complex interactions of individual choices about where and how to live and conduct business. Over the longer run, the outcome of these choices, in terms of where and how a city will grow, is unpredictable.

As early as the 1960s some urban theorists were viewing cities as complex systems and challenging then current practices, which assumed that planning could, in a straightforward way, determine the optimal shape of a city. For instance, Forrester (1969), one of the founders of modern systems dynamics, built a model of urban dynamics at the urging of the Mayor of Boston.

Alexander (1966) recognised that the complexity of "natural" cities arises from an "inner nature" or "ordering principle" (p. 3). He argued that the units forming a city comprise overlapping and hierarchically ordered sets. Such an arrangement leads to a far more complex set of possibilities than a system where sets are entirely contained within or entirely discrete from other sets. Alexander illustrates the potential complexity with interactions at a particular city street corner (Box 2.1).

Box 2.1 A microcosm of urban complexity – a street corner in Berkeley, California circa 1960

[I]n Berkeley at the corner of Hearst and Euclid, there is a drugstore, and outside the drugstore a traffic light. In the entrance to the drugstore there is a newsrack where the day's papers are displayed. When the light is red, people who are waiting to cross the street stand idly by the light; and since they have nothing to do, they look at the papers displayed on the newsrack which they can see from where they stand. Some of them just read the headlines, others actually buy a paper while they wait.

This effect makes the newsrack and the traffic light interactive; the newsrack, the newspapers on it, the money going from people's pockets to the dime slot, the people who stop at the light and read papers, the traffic light, the electric impulses which make the lights change, and the sidewalk which the people stand on form a system – they all work together.

From the designer's point of view, the physically unchanging part of this system is of special interest. The newsrack, the traffic light and the sidewalk between them, related as they are, form the fixed part of the system. It is the unchanging receptacle in which the changing parts of the system - people, newspapers, money and electrical impulses – can work together. I define this fixed part as a unit of the city. It derives its coherence as a unit both from the forces which hold its own elements together and from the dynamic coherence of the larger living system which includes it as a fixed invariant part. *Source: Alexander (1966, p. 3).*

Writing at the same time as Alexander, Jacobs (eg, 1961, 1969) also recognised the complexity of cities and the advantages to residents arising from this complexity. Such complexity emerged spontaneously and organically from the bottom up. Like Alexander, she strongly opposed prevailing planning theory and practice – which intrinsically operated to reduce complexity.⁷ Planning, according to Jacobs, should be the science of “organised complexity”.

...a growing number of people have begun, gradually, to think of cities as problems in organized complexity – organisms that are replete with unexamined, but obviously intricately interconnected, and surely understandable, relationships. (Jacobs, 1961, pp. 438–439)

Jacobs argued that understanding cities as “organised complexity” required:

- thinking about cities in terms of processes, where objects in cities can have radically different effects depending on circumstances and context;
- working from particular circumstances rather than from generalisations to identify the actual forces and processes that are relevant; and
- looking at small-scale examples for clues to understanding (for instance, examining how the differing business hours of branches of a bookstore chain reflect differences in neighbourhood pedestrian traffic).

Complexity brings advantages to cities that no person could plan for: “...lively, diverse, intense cities contain the seeds of their own regeneration, with energy enough to carry over for problems and needs outside themselves” (Jacobs, 1961, p. 448).

Jacobs later wrote of the benefits for innovation and entrepreneurialism that cities offer because of, not in spite of, their apparent inefficiency and impracticality. For Jacobs, the unpredictable cross-fertilisation of ideas across different types of businesses brought together by happenstance drove innovation. Proximity in cities facilitated the subsequent rapid spread of successful innovations. Together these processes underpin the economic benefits of cities (Jacobs, 1961; section 2.1).

The changing drivers of city growth

Over the long run city growth rates are generally independent of initial population levels (Angel, 2012; Glaeser, Ponzetto & Tobio, 2014; Chauvin et al., 2016).⁸ Over shorter periods of time, city growth rates can sometimes be correlated with initial size. For instance, in the eastern counties of the eastern states of the United States, population growth in the 1960s was much faster in the counties that were initially more populous. Before the 1860s and after the 1970s, less populous counties grew more quickly than others. Over a 200-year period “few, if any, growth relationships remain[ed] constant” (Glaeser, Ponzetto & Tobio, 2014, p. 7).

The OECD (2015a) similarly reported that, across the developed world, most cities with more than 500 000 residents grew faster after 2000 than the countries in which the cities were located. Yet, in the previous 30 years the share of population living in areas with more than 5 million residents declined (p. 44).

Glaeser (2005a, p. 121) argued “long run urban success does not mean perpetual growth. Long run urban success means successfully responding to challenges.” According to Glaeser, Ponzetto and Tobio (2014) “regional and urban change [over the long run] is best understood ... as a set of responses by people and firms to large-scale technological change” (p. 33).

The advantages of agglomeration shift over time

While the long-term evolution of cities is unpredictable, location and geographic characteristics often explain the origins of particular cities (OECD, 2015a). Proximity to natural resources such as a harbour (eg, Auckland) or navigable river attracts early settlement.

⁷ Jacobs preferred solutions did not persuade Alexander (1996).

⁸ This empirical regularity is known as Gibrat’s law. There are exceptions over shorter time periods, and in developing countries where policy distortions and the rapidity of urbanisation may favour growth in smaller cities (as in China and India) (Chauvin et al., 2016).

The advantages of cities as a focus of economic activity have changed over time. The Industrial Revolution, and increasing agricultural productivity, spurred rapid urbanisation during the 19th century in Europe and the United States (Glaeser, 2005a; Glaeser, Ponzetto & Tobio, 2014; OECD, 2015a). Later in the 19th century, manufacturing firms attracted a large pool of labour to particular locations. At the same time, they located production close to consumers in already established cities. Reductions in the cost of transporting goods and the diminished role of manufacturing for economic growth has led to a changing role for most cities since the second half of the 20th century.

Increasingly, service industries drive growth in developed economies. This is certainly the case for New Zealand (NZPC, 2014a). Graham, Gibbons and Martin (2009) (for the United Kingdom) and Maré and Graham (2013) (for New Zealand) showed that the productivity benefits of agglomeration are greater for firms delivering services than for those producing goods. Conway and Zheng (2014) showed that this is particularly the case for services that can be traded at a distance and that firms producing such services are more likely to locate in Auckland than other New Zealand cities. It is the ability of cities to more quickly mix and match people and ideas that is now increasingly important. US cities with more educated workforces have experienced strong growth since the 1950s (Glaeser, Ponzetto & Tobio, 2014).

Glaeser (2005a) argued that skills and diversity make a city resilient in the face of changing economic tides (Box 2.2).

Box 2.2 **How Boston reinvented itself over two centuries**

Boston has “re-invented” itself three times since the start of the 19th century.

First, it redeveloped as the provider of “seafaring human capital for a far flung maritime trading and fishing empire”. Then in the late 19th century it became a factory town built on immigrant labour and “Yankee technology”. After 30 years of decline, Boston re-merged in the late 20th century as a centre of the information economy (p. 119).

The seeds for each reinvention were already present in the preceding period. As a maritime power, Boston also produced manufacturing goods that its ships carried overseas. Its financial services industry, developed around maritime commerce, helped source the capital required for expanding manufacturing.

Boston has always had strong educational institutions and a relatively well-educated workforce. “Boston’s universities ... meant that when America became an information economy, Boston would be able to capitalize on that transformation” (p. 147).

Source: Glaeser, 2005a.

Cultural and educational amenities and climate are attracting workers to cities

Cities are successful, not only because they provide good job opportunities, but because they are places that people want to live for other reasons (section 2.1). Glaeser and Gottlieb (2006) noted that cities like New York, Chicago, Boston and London had grown rapidly in the 20 years prior to their study. This was not only because of the increasing importance of cities for the knowledge economy but also because

the desire of consumers to live in these cities has increased enormously as a result of changes in style of government, improvements in law enforcement technology and rising incomes that have raised demand for high-end urban amenities. (p. 1275)

Glaeser and Gottlieb (2006) noted that over these 20 years, real wages (taking account of living costs) had been falling in larger cities relative to other cities. This highlighted the importance of the other factors in attracting new residents. The authors presented evidence that demand for selected cultural and

entertainment amenities indeed rises with incomes and education. Florida (2003) also popularised the idea that successful cities create cultural and lifestyle opportunities that attract creative, well-educated workers.⁹

Grimes et al. (2014) looked at the drivers of long-term population growth of urban areas in New Zealand since 1926. They found that sunshine hours, human capital and proximity to Auckland drove growth, particularly since 1966. Suitability for agriculture of land surrounding an urban area was also important, given the large number of provincial centres and rural service towns in the sample.

A limited range of products increases the risk of city decline

The forces that drive city growth can unwind. European and US cities based on specialised manufacturing prospered in the late 19th century. Yet many experienced protracted decline in the late 20th century (see eg, Glaeser, 2005a). Detroit, based on car manufacturing and Pittsburgh, based on manufacturing steel, are well-known examples. Over-reliance on manufacturing a limited range of products contributed to the risk of decline. When new manufacturing technologies and business processes arise, or the changing economics of manufacturing favour new providers in different locations, or consumer tastes switch to new products, stagnation and decline can set in. Cities with a limited range of products are more vulnerable to demand and supply shocks (including technology shocks).

The young and educated are the first to leave a declining urban area, as they seek better opportunities in other cities (Chapter 4). The effects are cumulative. As people leave, some of the remaining economic activity becomes unviable, schools close, buildings fall derelict and resources to maintain infrastructure dwindle.

Many smaller provincial centres in New Zealand developed to provide services to farming communities. Over the last half century at least, farming technology and economics have changed. Many smaller holdings have been consolidated and the numbers of people living on farms has declined. At the same time, road transport links have improved and travel times to larger provincial centres have fallen. The reliance on local service centres has fallen as a result. A number of smaller rural service towns and provincial centres in New Zealand face population decline (Chapter 4).

2.3 Agglomeration costs limit the growth of cities

Urban areas with a desirable combination of amenities and earning opportunities relative to alternative locations are likely to grow. Transport links, social infrastructure and the benefits of location in a large population area contribute to earnings opportunities and amenities. As costs of living in a city rise and benefits relative to other cities reduce, growth will slow.

What are the costs of an increasing population?

First, more firms and more people put pressure on a city's transport infrastructure. A dominant advantage of modern cities is the mutually convenient access to jobs and workers they provide for residents and firms (Bertaud, 2014; section 2.1; Chapter 8). Across cities in developed countries a large majority of workers commute to work within one hour, with a median time of 30 minutes (Bertaud, 2014; OECD, 2015a). If prospective commute times are too long, people will choose to live elsewhere, look for another job, or drop out of the workforce (Kelly & Donegan, 2015).

The pressure on transport infrastructure is readily observed, but other infrastructure, such as wastewater treatment and the management of stormwater, can come under significant pressure too. When infrastructure is under pressure, a city's residents bear the costs 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. Yet investment in infrastructure needs to be commensurate with expected benefits. How decisions are made to invest in new infrastructure is discussed in Chapter 10. The important question of who pays for new infrastructure (or upgrades to existing infrastructure) is discussed in Chapter 11.

⁹ Glaeser (2005b) questioned Florida's conclusions about the particular urban form (dense) that would achieve this, or the role of Bohemianism in explaining city growth.

Second, even without regulatory barriers to expansion, increased population pressure and higher productivity raise the real value of land in cities. As a result, only the more productive firms and people who can afford the higher rents (or less productive firms and people who can charge higher prices, or command higher wages) choose to locate in the city. City residents face higher prices on average because of higher input costs (including labour costs and land rents) and their willingness to pay. Low-skilled workers in cities need higher wages than elsewhere to compensate them for the higher costs of living in a city. Even so, they may have a lower quality of housing (OECD, 2015a).

As land prices and other costs and congestion rise, some firms and some people will choose to locate elsewhere (Box 2.3). Over the last 15 years, more New Zealand residents have moved out of Auckland than have moved in, leaving for centres such as Tauranga and Whangarei and further afield (Chapter 4).

Box 2.3 The challenges of business in Auckland

Kinetics Group is an IT support and solutions firm based in Auckland and Christchurch. Founded in 1996, Kinetics won the Microsoft Worldwide Small Business Partner of the Year award in 2013, and has won the Microsoft New Zealand Small Business award six times.

Auckland's congestion and high land prices create two challenges for Kinetics – attracting and keeping skilled staff, and lost productive time. As founder Andrew Hunt notes, “when people in Auckland are choosing where to work, part of the decision includes the time and cost of travel”. With house prices in central Auckland so high, a large number of employees live at the fringes of the city and face long travel times. Indeed, some Kinetics staff travel more than 40 000 km a year simply getting to and from work. The issue has become more acute for Kinetics in recent months, as the firm has started looking for new premises to accommodate expansion. Moving locations will mean longer travel times for some employees and risks “breaking the informal bargain about where they need to travel to work” made when people accept jobs in Auckland. In moving to offices that will better allow it to grow and serve its clients, Kinetics risks losing valued staff members.

The other challenge is the sheer amount of time involved in getting across the city, and the unpredictability of travel times. Long trips are “hugely impactful” on productivity – a one-hour journey into the city for a meeting and return trip effectively consumes 25% of the working day. Even getting to nearby clients can be a problem, with travel times for sites just down the motorway varying between 15 minutes and 50 minutes. To make allowances for unexpectedly longer trips, Kinetic staff have to block out time ahead of their journey – further contributing to lost productive time.

Source: Andrew Hunt, pers. comm., 23 March 2016.

Other costs arise from pollution (lower air and water quality) and higher rates of some sorts of crime that come with urban living (Kelly & Donegan, 2015).

Within cities, people tend to locate in different neighbourhoods, based on differences in income, education and ethnicity among other factors. (See Maré et al., 2012; and Chapter 4 for spatial segregation trends in Auckland and other New Zealand cities.) Spatial segregation of this sort can create various forms of social exclusion that have negative effects on the wellbeing of a person and their community (OECD, 2015a; section 2.4).

2.4 What makes a high-performing city?

A high-performing city balances the benefits and costs of agglomeration to provide opportunities for current and potential residents to achieve their goals. By doing so, a high-performing city effectively contributes to the wellbeing of its residents. Large and rich labour markets make it easy to match the right jobs to the right workers, and so raising productivity and real earnings. Residents have opportunities to learn both informally “on-the-job” from each other and in educational institutions. They have easy access to the cultural, recreational, and natural amenities they value. Despite variations in economic circumstances, all residents have an opportunity to participate in the collective life of the city in a way that is meaningful to them.

Good urban planning and policy underpin a city's success

According to Bertaud (2014) the fundamental challenge for city authorities, irrespective of city size, 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).

Poorly organised cities can 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 (section 2.3; Box 2.3).

The OECD (2015a) noted that some large cities are actually just smaller fragmented labour markets. Low-income workers in particular may have effective access to only a small proportion of the suitable jobs in a city. Daley (2015) argued that people living on the fringes of large Australian cities are increasingly unable to access higher-paying jobs concentrated in the CBD as time and distance to work become insurmountable barriers.¹⁰

The problem is not just about poor transport links from the fringes of a city to the city centre. The high price of housing in Australian cities is due to land-use policies that prevent intensification of the historic suburbs surrounding the city centre. Intensification in these suburbs would increase the supply of housing closer into the CBD, lower prices and provide access to more productive jobs in the CBD.¹¹ Auckland faces a similar problem. Similarly, the potential solutions involve reducing barriers both to city expansion (with good transport links) and to intensification. If households are given a good choice of locations and housing types, their decisions will provide a useful guide to future development patterns.

These issues are examined further in Chapter 8, Chapter 10 and Chapter 11.

Traffic congestion detracts 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 their transportation challenges better than others.

F2.3

Well-performing cities provide an effective coordinated transport infrastructure that enables residents to get to work at a wide range of locations, at reasonable cost and in a reasonable time.

Urban planning to support social inclusion

As noted in section 2.3, spatial inequalities increase as cities grow larger. People on low incomes can afford to live only in suburbs far from jobs and the most valued amenities. Such suburbs, especially if public transport is poor, create social isolation and damage wellbeing (Nechyba & Walsh, 2004; Zhao, 2013; Kelly & Donegan, 2015).

The concentration of people with low incomes in particular suburbs harms their wellbeing over and above any individual socio-economic disadvantage they experience. For instance, schools in low-income suburbs bring together many students from disadvantaged social backgrounds. On average, students who are educated together with many disadvantaged peers achieve at a lower level than would otherwise be the case (OECD, 2015a). People growing up in neighbourhoods with many criminals are more likely to engage in crime over the longer term (Topa & Zenou, 2015).

¹⁰ Daley (2015) commented that the difficulties of access to high-paying jobs in the centre of Australian cities by those living on the urban fringe is having an impact on women's participation in the labour market, with a concomitant loss of productive potential. The high price of housing in the inner suburbs has meant that young families are increasingly located on the urban fringe, making a return to the workforce after having children difficult. The problem is compounded by poor transport links and long commutes.

¹¹ The relationship between restrictions on increasing housing supply in inner-city suburbs and the cost of commuting for households on the city fringe has been analysed by Bertaud and Brueckner (2005). The authors measure the welfare cost of restricting housing supply through building height restrictions in the inner suburbs by measuring the commuting costs of those living on the city fringe. They estimate a welfare loss of about 2% of income, which they describe as a significant distortion, similar to the measured welfare cost of other key distortions in Western economies.

Residents in disadvantaged neighbourhoods are also at risk of greater exposure to polluting or environmentally destructive industries.

Often this is a function of the availability of cheap land, a cheap and compliant labour force, and proximity of natural resources. The location of waste sites, including landfills, incineration facilities and long-term toxic storage sites can also visit environmental injustice on minorities and low-income communities. (Grinlinton, 2015, p. 43)

At the same time, people living in low-income neighbourhoods often have less access to green space in some countries, though this seems to be a lesser problem in New Zealand (Meurk, Blaschke & Simcock, 2013).

The collective social and economic resources of a low-income neighbourhood with high unemployment are much lower than in well-off suburbs. The options for relocating are also limited. This means that people in such suburbs have fewer effective means than others to make their needs and preferences known, and so to influence city policies (NZPC, 2015a).

The trade-off between house prices and proximity to jobs and amenities is one of the drivers of spatial inequalities and social exclusion. In turn, poor land-use planning practices makes this trade-off more acute. City governments can therefore reduce the severity of spatial inequalities through good planning.

Angel (2012) argued that the expansion of cities is inevitable, and strategies to contain them are both futile and harmful, particularly in terms of housing for the poor. He also argued that city density should be allowed to remain in a sustainable range, and that necessary land for public streets, public infrastructure networks and public open spaces must be secured in advance of development.

Chapter 6 discusses how development capacity has failed to keep pace with demand in major New Zealand cities. This has contributed to a significant deterioration in housing affordability over the past 25 years. The burden of this falls most heavily on low-income households who are much more likely to be spending more than 30% of their income on housing than high-income households. On this important criterion, New Zealand cities, particularly Auckland, have not performed well.

City governments can also ameliorate some of the effects of spatial inequalities by providing public amenities on an equitable basis in low-income neighbourhoods; and by supporting the development of community networks and service organisations.

F2.4

As cities grow bigger, spatial inequalities (the segregation of people across space by income) emerge. Well-performing cities can ameliorate this tendency and its effects, through good planning and infrastructure provision that limit land price increases. Higher land prices force low-income people to live in suburbs with long travel times to available jobs and desirable amenities.

Effective governance

Governance refers to the institutions and processes that a city has for making strategic decisions about the provision of infrastructure, services and public amenities, and land-use planning. Effective governance is a prerequisite for integrating land use with the provision of infrastructure and public amenities in a complex and rapidly evolving environment.

Yet governance arrangements that work well for a rural service centre of 5 000 people would not suit a city of 500 000, let alone a city of 5 million. Even so, governance arrangements across larger OECD cities are very varied (OECD, 2015b). This variety reflects history (eg, many large cities are an amalgam of pre-existing towns or villages), national policy contexts (countries devolve different functions and tax powers to municipal governments), culture and norms.

Despite the institutional differences across cities that make it difficult to undertake statistical analysis, Ahrend et al. (2014) reported, in a study of five OECD countries, that fragmented governance arrangements (the

presence of multiple municipalities) contributed to lower labour productivity in metropolitan areas.¹² The effect was mitigated by about a half if the metropolitan area had a metropolitan-wide governance body, at least for functions such as transport and other infrastructure. These results probably reflected the importance of coordinating land-use planning with infrastructure provision to increase the effective size of labour markets within cities. Cities with governance bodies across their area grew faster and had lower levels of air pollution (OECD, 2015a).

Yet, equally important are the formal and informal institutions that develop at a sub-metropolitan level that enable residents to engage constructively in working through contested development plans and policies (Chapter 3 and Chapter 8). The OECD (2015a) notes that levels of trust tend to decline as cities grow; and that promoting trust in local government through positive interactions with residents can make an important contribution to a well-functioning city. In particular, working through difficult issues requires time and effort and sometime recourse to legal instruments and institutions to resolve. If trust is higher between the parties, it is easier and less costly to arrive at sensible solutions.

F2.5

A well-performing city uses formal and informal institutions at a sub-metropolitan level that build trust and enable residents to engage constructively in working through contested development plans and policies.

Land-use planning and social and economic objectives

New Zealand local governments have a relatively limited range of functions and tax powers compared to their international counterparts. Yet many do take on a role in coordinating government agency and non-government responses to local social issues, or even provide funding to local service organisations (NZPC, 2015b). Social and economic objectives also often feature in long-term plans mandated under the Local Government Act and in other instruments such as the Auckland Plan. Many of the objectives are limited and within the scope of local authorities to influence – for instance through support for cultural events and the provision of recreational amenities. However, in some cases, the stated social objectives are very ambitious and largely the responsibility of central government to pursue. Chapter 3 discusses the appropriate scope of land-use planning.

Commentators sometimes urge local authorities to consider the potential effects of urban land-use planning on outcomes such as reducing obesity rates, carbon emissions or crime. Yet these issues are not central to the purpose of urban land-use planning (Chapter 3). From a national perspective, neither is urban land-use planning the best nor even a very significant policy instrument for improving many of the outcomes across this diverse range of issues (Chapter 5).

2.5 Coordinating local and national government policy

This section looks at how local and national government policies interact and influence the achievement of national and local objectives. A high-performing city requires effective co-ordination of national and local policies.

Most national policies, such as for education, health and policing services, have impacts on the wellbeing of city residents.

Urban living is the dominant lifestyle in all OECD countries and shapes today's societies. Cities are mirrors of societies and often magnify the problems they face. As a consequence, almost everything that contributes to well-functioning societies also contributes to well-functioning cities. (OECD, 2015a, p. 55)

Yet most of these policies are outside the scope of urban land-use planning. This section instead focuses on the effect that local land-use planning has on the national economy.

¹² The existence of economies of scale and diseconomies of scale in the provision of metropolitan services is a related but separate issue. For a sample of Australian cities and for cities in the Hawke's Bay respectively, Drew, Kortt and Dollery (2015) and Kortt, Dollery and Drew (2016) found that diseconomies of scale in the provision of services set in at a relatively small municipal scale.

Land-use planning involves both central and local government in designing and administering regulation, with potential for misalignment (Chapter 5). How this plays out in planning for the built and natural environments is discussed in Chapter 8 and Chapter 9 respectively. Similar issues can arise in the provision of infrastructure (Chapter 10 and Chapter 11).

Local planning practice can have effects on the national economy

Planning practice that hinders urban growth (for instance, by pushing up land prices or reducing the effectiveness of city labour markets) can have strong effects on the national economy. As a result, the decisions that a city council makes about accommodating growth may be at odds with the interests of central government.

Spillovers from restrictive land-use regulation to the wider economy

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 busts 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. Yet changes in these variables could not 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. (p. 1)

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 happened in New Zealand during the house price boom of the past decade, which, in recent years, was driven in part by historically low interest rates. This effect 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 increase 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.

In July 2016 the Deputy Governor further commented on the risks to the financial system,

[w]hile housing demand has been strong, the housing supply response has been constrained by rigid planning and consent processes, community preferences in respect of housing density, inefficiencies in the building industry, and infrastructure development constraints around financing and resource consents. House price pressures have re-emerged in Auckland following an easing in late 2015 and have also strengthened across other regions. The longer the boom continues, the more likely we will see a

severe correction that could pose real risks to the financial system and broader economy... A dominant feature of the housing resurgence has been an increase in investor activity, which increases the risk inherent in the current housing cycle. (Spencer, 2016)

The Reserve Bank is considering further regulatory measures to address these concerns. Yet, as the Reserve Bank noted, the underlying driver of higher prices is restrictive land-use regulation that prevents housing supply from responding efficiently to demand. Addressing this issue in Auckland is important for the health of the national economy.

Facilitating national labour mobility

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 income 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 indirectly 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.

Hsieh and Moretti (2015) investigated how land-use regulation in the United States restricts labour market mobility. They argued 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:

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. They also conclude that reducing regulatory barriers to increasing the supply of housing could increase a country's GDP.

F2.6

Well-performing cities provide benefits to residents and to the wider economy through the delivery of an adequate supply of development capacity for housing. Reasonably priced housing makes it easier for workers to move to locations and jobs where they can best use their skills; and to access other amenities that make cities attractive.

Chapter 8 discusses the challenges that high-growth councils face in releasing land for housing and providing for denser development of existing urban areas. Chapter 11 discusses the challenges they face in funding infrastructure to accommodate growth, whether through intensification or greenfield development.

2.6 Conclusion

High-performing cities provide sufficient land for development so that housing remains affordable. They provide infrastructure and public transport that allow reasonable commuting times, and other amenities that attract people to live there. High-performing cities have planning arrangements that enable them to succeed in a complex evolving environment with unpredictable long-term outcomes. An urban planning system needs to be open to change and growth, and able to respond flexibly to emerging developments. The rationale for urban planning and how it can respond to complexity is discussed in Chapter 3.