

CHAPTER 2

Theories of town location and economic activity

Key points

- No single theory explains the spatial development of human activity in Australia.
- The most obvious spatial variable influencing the location of activity is the physical geography and natural resource endowment of a location.
- Economic Base Theory provides a foundation to examine the influence of industry on a town's development. It implies that the distribution of towns follows base industry patterns.
- Economic theories (consistent with base theory) that describe the concentration and clustering of economic activity include agglomeration economics, Porter's competitive strategy theory and New Economic Geography.
- The theory of path dependence illustrates the influence of history on current outcomes.
- Migration theory shows that both economic opportunities and amenity considerations influence the decision to migrate.
- Central Place Theory provides a basis for understanding how towns and cities of different sizes are organised for the distribution of goods and services, and correspondingly, where higher order goods and services are available.
- The concepts embodied in retail theory may also be applicable to economic activity within towns.

Introduction

There are many theories of spatial development, but no one theory explains the total organisation of human activity in rural and urban areas. Theories have been developed in a range of disciplines such as economics, demography, geography, sociology and history to try to understand the underlying mechanisms. To date they only partially explain the observed patterns of spatial development, with the applicability of each theory seeming to vary in different situations. Each is valuable and together they serve as a foundation for this analysis, offering a guide to the range of determinants and conceptual thinking that might explain the changes in the fortunes of towns in Australia over the past century. This chapter presents broad summaries of some of the key theories, considering two types: those with a focus on

the producer (essentially industry location theory), and those with a focus on the locational aspects of consumer behaviour and retail economics.

These theories represent models of human behaviour in specific situations. Carr (1997) presents four basic sets of overarching factors that provide the real world context in which the decisions affecting spatial organisation play out.

History

History provides physical frameworks in terms of existing settlement patterns and networks, but can also shape the inherited attitudes of the population: for example the focus on self-reliance following the Second World War. A brief history of settlement to 1911 is addressed in Chapter 3, providing some explanation and context for what had occurred prior to the study period. The historical events between 1911 and 2006 are partly addressed in Chapter 4, but also discussed throughout the report when looking at national trends in industry, technology and the wider economy.

The location of resources and the wider environment

The location of resources and suitability of the wider environment are important as the initial impetus for the locations of towns (for example, where mines, ports or river crossings are established). Soils and climate (influencing the type of agriculture or suitability for tourism) and the discovery of mineral deposits play a determining role for industry location and in turn prompt the establishment of towns.

Technology

Changes in technology can make differences in many areas. Industrial technology can open up resources or change the competitiveness of regional industry. Advances in transport can generate social and economic opportunities for individuals and business, while other advances can create whole new industries and consumer products. Over the period 1911 to 2006 we have seen the development of the motor car, telecommunications and the computer. The level of consumer products available to ordinary citizens has expanded exponentially. It is unsurprising that radical changes in settlement patterns would arise from these developments.

The economic and social context

The economic and social context has evolved over the twentieth century. Australia has grown through mass migration and the British outpost of 1911 is now a multicultural society. Wealth and education have grown, women are now a substantial part of the workforce and life expectancy has increased. International trade and wealth have grown and our political and economic focus has shifted from Britain to the US and to Asia.

These factors provide the context in which producers and consumers make decisions. They also provide an ever-changing background to the observed changes in settlement patterns and our consideration of the theories that attempt to explain them.

Economics and location

Although not a 'theory', the most obvious spatial variable is the physical geography and natural resource endowment of a location. Topography, land quality, and climate are crucial to determining the potential sites of towns. A related factor is market access for both consumers and producers. Regions with natural harbours, river crossing points and strategic locations have been strong influences on locational choice of towns because they have enabled the movement of goods and services.

Industries also have requirements such as access to suitable land for agricultural activities. Similarly, ore deposits are a pre-requisite for mining and a good climate and access to lakes, rivers and oceans contribute to tourism. Similarly, a good water supply is essential for any settlement and some successful towns resulted from the development of irrigation.

Yet, spatial questions in economics have often been set aside from mainstream economics. For many years theories of international trade have been the backbone to analysing economic activity across space (McCann 2001). This includes theories such as Ricardian comparative advantage, based on two countries specialising in producing goods in which they have a relative advantage. The primary purpose of the model is to consider the effects of trade on a country moving from a position of no trade to free trade. This leads to each country specialising in its production and resulting in a win-win situation as the overall welfare of each country increases. That said, the model has a number of limitations such as assuming constant returns to scale, perfect competition and not accounting for market size.

Within nations, trade theory is less applicable because of common currencies and a high degree of labour and capital mobility. Therefore different theories were needed for understanding trade between regions within a single country.

The theoretical focus of the spatial distribution of economic activity is centred on the locational behaviour of firms and how they react to transport costs, local factor prices, market structure, substitution possibilities and natural resources. A common underlying assumption is that firms choose a particular location to maximise profit. There are also behavioural theories on firm location that incorporate decisions being made based on limited information, strategic positioning and costs of moving.

Interest in spatial economies has increased over recent years, with the writings of Paul Krugman and Michael Porter bringing the important connection between space and economic activity to wider audiences (McCann 2001). In this context, an understanding of economic factors affecting the spatial patterns of activity is important.

More generally, economic activity tends to concentrate spatially. This report uses the term 'centralisation' to describe this phenomenon of the increasing centralising trends in both industry and population and examines their underlying forces by drawing on the economic literature as discussed below.

Industry location and towns

The fundamental purpose of all towns is to supply goods and services to their residents. Towns have essentially the same function, regardless of their industry and are the key to understanding economic and regional development.

The relationship between industry and towns is complex and various theories have been proposed to understand it. A commonly held theory of town location that describes the relationship between town location and industry location is Economic Base Theory.

Economic base theory

Economic Base Theory provides a structure to understanding the effect investment spending and industry employment can have on a local economy, with the model focusing on 'regional export activity'² as the primary source of economic growth. It separates local industries into two components:

1. Basic industries that supply goods and services to other regions.
2. Non-basic industries that serve local consumption.

The theory proposes that local economic activity is a function of the export base (basic component) which then engenders local growth and investment through increased demand for locally produced goods and services. Often the explanation is associated with a 'multiplier effect'³. The theory proposes that funds flowing in from outside the region from selling basic industry products can directly expand the overall economic base locally. This expansion creates new employment and results in new local consumption, further generating economic activity for local industries and resulting in subsequent rounds of activity (and investment) which continues until the derived receipts leak out of the local economy (Stimson et al. 2002). Stimson et al. (2002, p.236) also highlight that it is often 'a small number of firms and businesses play[ing] a pivotal role in defining the economic structure, performance and development of a regional economy'.

Consequently, to promote growth, the focus for investment is on building the basic component of an economy to become a 'growth pole'⁴ for a location, with the non-basic sector then following the opportunity created. The theory has wide acceptance and is often the underlying strategy of much local and government regional development effort. The multiplier component of this theory can result in expectations of higher benefits than are actually achieved.

In Australia, agriculture, manufacturing and mining have been the traditional basic industries of local economies because of their focus on external demand—often their markets are international. Tourism is also a common basic industry, but is more difficult to identify as tourist spending is often not readily separable from local consumption. Similarly, higher education and aged care may be basic industries for some regions, but are not easily identifiable since institutions invariably have local clients as well as those from other areas. All of these industries,

² Regional export activity is regarded as the primary determinant to grow local economic activity by drawing funds from other regions into the local area.

³ The injection of new money into a local economy results in a circular flow of extra spending that raises local economic activity.

⁴ The Growth Pole model argues that a large firm or significant public or private investment will act as a focus for local growth.

however, invest directly in the local economy and are commonly used as the foundation to promote local economic growth.

Box 2.1 Promoting regional economic growth

Economic growth is broadly defined as an increase in an economy's ability to produce goods and services over time. The growth in output in turn raises a region's income enabling the consumption of more goods and services. This promotion of economic growth is the primary focus of many of the regional development initiatives undertaken by local stakeholders, businesses and government. It is also the de facto goal of many employment-based policies.

Over time, several strategies with different emphases have been used to promote the fortunes of towns and the vibrancy and resilience of communities. For example, Economic Base Theory focuses on the promotion of the basic sector to raise local income while 'growth poles' theory suggests that having a core industry will attract more investment into the local area.

A common theme to regional development approaches has been through promotion of local leadership. For instance, The McKinsey report (1994) into supporting regional development found that local and regional leadership was a key contributor. The dictum to this approach is that community action makes a significant change to the economic outcomes locally (Collits 2001).

Another approach has been to identify key characteristics of towns that have had positive (and negative) influences on local fortunes. Numerous studies⁵ have identified a range of factors such as:

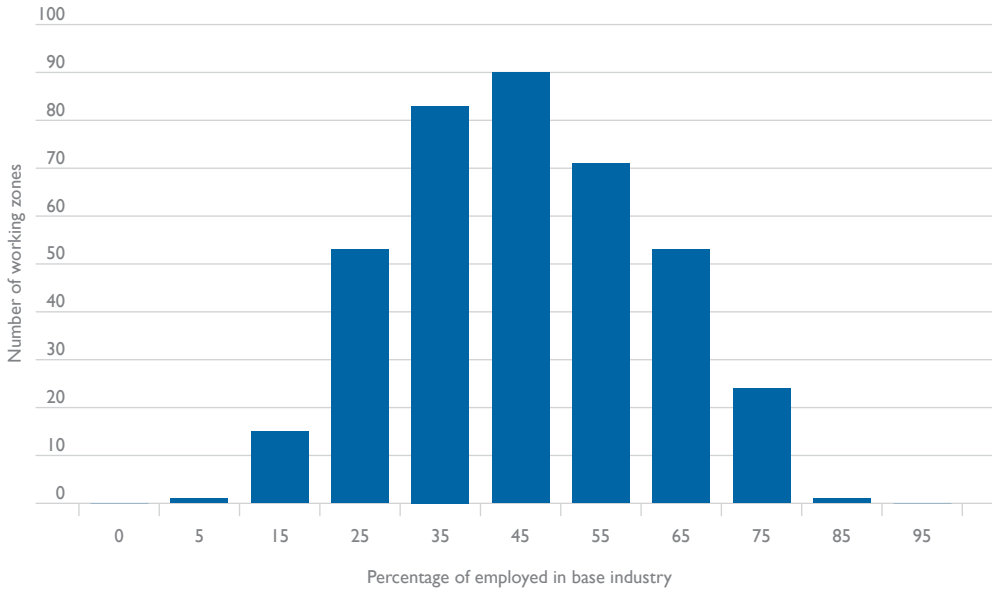
- the willingness to take risks
- networking
- positive attitudes to change
- enhancing local skills and capabilities
- strategic approaches to outcomes.

⁵ Kenyon and Black (2001) provide a summary of the literature on the common characteristics that result in vibrant communities.

All regions have a mix of basic and non-basic industry types and even some industries themselves have both basic and non-basic characteristics. For example, retailing to locals is non-basic, but retailing to tourists is basic. Similarly while agriculture itself is basic in character, the classification of services to agriculture is much less clear. It is therefore useful to think of the non-basic and basic more as descriptors of industry rather than rigid categories.

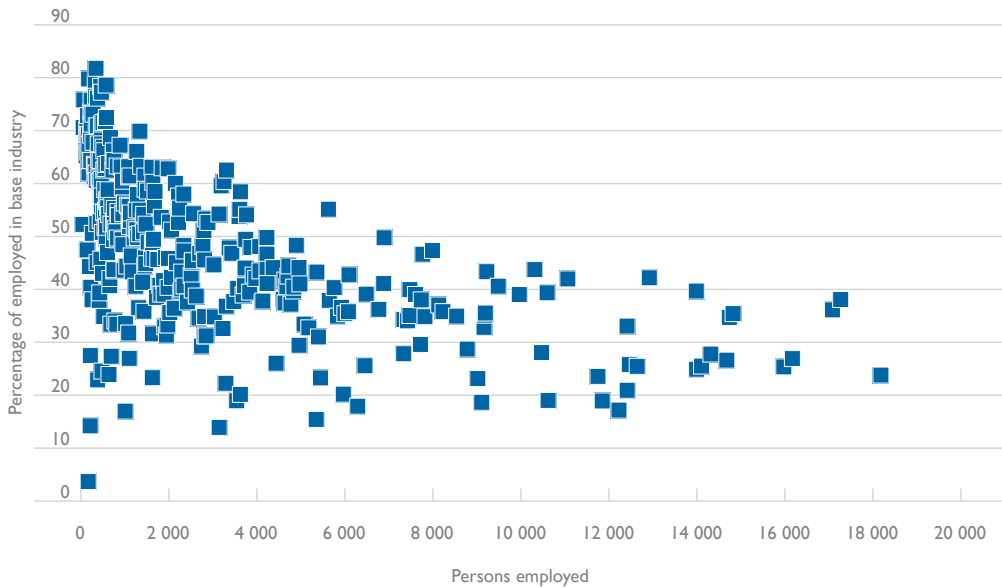
To illustrate the proportion of basic industries in local economies, Figure 2.1 presents the basic industry workers as a percentage of the total workforce, using BITRE's 2006 Working Zones (areas of functional economic activity). Although the estimation method is unsophisticated (basic industries are defined as agriculture, mining, manufacturing, wholesaling and government administration), the graph shows a significant diversity, with most regions having between 30 and 60 per cent of their population employed in basic industries.

Figure 2.1 Basic industries by people employed in BITRE Working Zones 2006



Source: BITRE (2009a).

However, Figure 2.1 does not take into account of the size of each Working Zone, which range from small, isolated areas (some have fewer than 100 employed persons) to the entire greater metropolitan areas of Sydney and Melbourne. Figure 2.2 addresses this by linking the basic industry to employment size. Again, the figure is distorted by the coarse definition of basic and non-basic, but the trend is clear—only regions with very small working populations have a high percentage of base industry employment. This is most logically explained by thinking in terms of the non-basic industries, which (by definition) tend to service larger populations and so do not exist in locations with small populations and low levels of demand for services. The fact that some small Working Zones appear to have very large non-basic components is therefore more remarkable. However, closer examination of these areas reveals that this reflects the imprecise identification of basic and non-basic industries. They have high levels of tourism (part of which is incorrectly identified as non-basic retailing), or are very isolated therefore have retained more of their non-basic functions.

Figure 2.2 Basic industries by people employed in BITRE Working Zones 2006

Note: For readability of the figure, only Working Zones with fewer than 20,000 employed persons have been included.
Source: BITRE (2009a).

The size of the basic component of the local economy can also determine the size of the labour force which then (at least traditionally) becomes the initial foundation for the town's population. Differing industries require different numbers and types of employees. For instance, modern agriculture and mining typically have few employees compared to earlier times, while tourism is still relatively labour intensive.

Non-basic industries such as service delivery are vital components of the overall economic functioning of towns, and were the primary rationale for the establishment of many towns. In fact they often provide the bulk of employment and production (see Figure 2.2).

The spatial distribution of the non-basic industries across regions is, in fact, as important for individual towns. Their importance is often overlooked in favour of basic industries, but they can provide a bulwark of stability when basic industries are experiencing challenges.

The basic/non-basic paradigm is widely held and a seemingly sound description of economic activity. In terms of town location it emphasises the location of basic industry as the key determinant. The following three theories focus on industry location, and, to the extent that Economic Base Theory holds, they can be seen as de facto town location theories also.

Agglomeration economies

'Agglomeration economies' is a term often used as a catch-all for a wide range of benefits, which include economies of scale and wider economic benefits that contribute to raising productivity by reason of location.

Economies of scale

'Internal economies of scale' describes a situation in which the cost of producing an additional product decreases as volume increases. In other words, a firm is able to lower the average cost per unit by increasing production and sharing costs over a larger number of goods. Firms are able to achieve economies of scale through technological innovation, administration and financial savings, risk bearing capacity and purchasing power. For example, large-scale businesses have the capacity to invest in specialist equipment, distribution networks and/or purchase inputs in bulk such as a major food retailer having purchasing power when obtaining produce from suppliers.

Whilst internal economies of scale can be based on the size of a firm, some firms achieve economies of scale by spatially concentrating both their capital investment and labour pool. This fits within the benefits of agglomeration as the economies of scale are location-specific. For example, car manufacturing achieves greater efficiency through scale because investment takes place in one location rather than across a number of areas.

The opposite may also be relevant—'diseconomies of scale'. This situation results from firms becoming less efficient because they have become too large. Communication and co-ordination problems are issues at the firm level, but it also applies to locations through congestion, increases in land and wage prices and consequent loss of productivity.

Wider economic benefits

Some industries tend to concentrate geographically. The obvious advantage gained by industry concentrating is reducing transport costs. Marshall (1920) emphasised three different types of transport costs—the cost of moving goods, people and knowledge transfer. Thus, industry agglomerates to reduce these costs by taking advantage of:

- Access to inputs—co-location of similar firms allows the development of highly specialised services/firms to develop and locate nearby in response to the greater local demand. It may also allow the development and provision of specialised infrastructure which benefits all firms.
- Access to a local skilled-labour pool—clusters of firms with similar operations means that there are a larger number of appropriately trained workers available to the individual firm.
- Information spill-overs—information is more easily disseminated between like firms, their suppliers and customers if they are co-located.

These three sources of agglomeration allow industry to experience production economies of scale that enable all members of the cluster to reduce costs.

Two further descriptions of locational agglomeration (Ohlin, 1933) are:

- Localisation economies occur for a firm by locating itself in close proximity to operators in the same industry and/or being close to their suppliers and customers. Thus, firms can obtain the above mentioned agglomeration benefits simply by operating in a location utilised by many related firms.
- Urbanisation economies result from the advantages of operating in an urban environment, which are available to all operators in the region. A large potential market, large basic facilities and access to personal services are examples of advantages to firms.

That said, just having firms co-located does not necessarily mean that location is driven by agglomeration benefits. It may simply be the best place to locate given the resources, infrastructure or market mix (for example, see Hotelling later in this chapter).

New economic geography – Krugman

In 1991, Paul Krugman published a 'core-periphery' model drawing on existing theories that led to a new wave of literature, which became known as the New Economic Geography. A crucial feature of this theory is that it emphasised the importance of consumers and transport costs as drivers of increasing returns to scale⁶ and the power of positive feedback to drive larger and larger clusters.

Krugman's model considers two sectors—agriculture and manufacturing—noting that the mix of the two may concentrate activity (for example, manufacturing) or disperse activity (agriculture). Agriculture is distributed across suitable land. Manufacturing, on the other hand, takes place in a small number of sites, close to a relatively large demand base in order to reduce transport costs under monopolistic competition. As demand for manufactures comes from both the agricultural sector and manufacturing, there is a strong potential for positive feedback. That is, small, individual transactions accumulate, providing an advantage through market share and as a centre grows, there is the possibility of lower prices—further increasing the size of the centre from 'centripetal' forces.

The conclusion of this model is that there will be an ever-increasing manufacturing centre as long as there are increasing returns and reduced transport costs from clustering. Working against these 'centripetal' forces are 'centrifugal' (dispersing) forces. These dispersal forces include the higher rents and house prices from the concentration of activity, as well as non-mobile factors remaining at the periphery that attract firms away from the centre. In essence, the spatial patterns of population and production result from the balancing of these 'centripetal' and 'centrifugal' forces (see Table 2.1).

Table 2.1 Forces affecting geographical concentration

Centripetal forces	Centrifugal forces
Market-size effects (linkages)	Immobile factors (land and infrastructure)
Thick labour markets	Land rents
Pure external economies	Pure external diseconomies

Source: Krugman (1998).

In addition, network infrastructure established for transport, communications and utilities set up increasing returns to scale for firms operating within the system, which are often built up over time through positive feedback.

⁶ Increasing returns to scale means that output grows by proportionately more than the increase in inputs. In addition, the average costs also declines as the market size increases.

Path dependence

Path dependence describes the phenomenon of decisions being led by existing development, for example in the creation and take-up of technology, or the choice by a firm about where to locate. It is a phenomenon associated with positive feedbacks, where success in the market gives an advantage in future sales.

Path dependence is often associated with the development of new technology and what drives a new technology type to dominate in the market over another. It has been adopted by a range of disciplines, including economic geography (Martin and Sunley 2006). Martin (2010, p.3) states that 'the combination of historical contingency and the emergence of self-reinforcing effects steers a technology, industry, or regional economy along one "path", rather than another'.

Another application of the concept of path dependence involves clusters and location. As Arthur (1994, p.65) highlights, settlement patterns can be path-dependent '...with geographical attractiveness bestowing "selectional advantage"'. Larger urban centres have capacity to generate new sources of demand, with industry benefiting from agglomeration effects. The choice of location is influenced and probably even constrained by the cumulative effects of previous decisions on a location's development. A location will grow on itself and, once established, a cluster will continue to grow in a single location as the result of returns to scale and other agglomeration factors—as described above. Positive returns to increasing cluster size means that the larger it is, the more competitive it is and so the more difficult it becomes for other regions to compete.

The relaxation of the assumption of diminishing returns to scale inherent in path dependence has important implications. However, in reality increasing returns to scale is a relatively common occurrence and Arthur (1994) notes that it is characterised by:

- Instability as the effects of small economic shifts are magnified over time
- There is the potential for many equilibrium points (rather than the single point implied by diminishing returns)
- Once a product gets ahead there is a tendency for the path to be 'locked in' so that even technically superior alternatives cannot be chosen.

Chapter 8 discusses path dependence in more detail, in a wider consideration of history's impact on the settlement pattern.

Household-based decisions

While history tells us that industry is a significant factor in town location, where people/households choose to live and the factors they consider when making that choice also have important implications on settlement patterns.

Two important contributing factors influencing that choice are increases in wealth and improvements in transport. The advent of the motor car, better roads and communications technology has changed an individual's range of options, when accessing employment opportunities and/or goods and services. The development of this technology has meant that people have more options when deciding where to live, especially people no longer connected with the labour force. Below are theories of settlement that emphasise the decisions of households.

Migration theory

The ability of people to migrate between towns and regions directly influences the development of towns. Generally, migration models can be separated into two groups—disequilibrium and equilibrium models.

Disequilibrium theory centres on the role of the labour market as the driver for migration, through income maximisation. The theory sees migration as a function of spatial differences in economic opportunities. These differences between regions encourage individuals to search new labour markets for higher wages, lower unemployment risks and greater employment security. These adjustment mechanisms, however, are sluggish and are slow to reach a new equilibrium.

The equilibrium model, on the other hand, regards migration as driven by much more than just economic opportunity (Graves 1980). It envisages a diminished role for the labour market and assumes that spatial differences in incomes and prices reflect wholly, or in large part, a compensating gap associated with corresponding spatial variation in amenity. Amenity refers to the properties of a location (physical, service and social characteristics), chiefly the attributes of the area that increase the attractiveness and utility for residents. In other words, it is an explanation of why an individual would migrate between two regions in which the destination region has lower wages or the individual receives no change in income (for example, retirees). Compensating differentials in wages and rents are the important concept as individuals are willing to forgo high incomes and/or pay higher rents for a region with attractive amenities; otherwise, individuals will demand wage compensation.

The literature has identified a number of significant contributors to the decision of an individual or household to migrate. A literature review on these determinants is beyond the scope of this paper. Nonetheless, some of the most commonly identifiable determinants of migration include:

- Demographic—age, education and family status of the individual are essential determinants of preferences and capacity
- Economic—employment and wages
- Amenity—coastal, medical services and proximity to family and friends.

In the Australian context, migration flows both domestically and internationally have been important influences on settlement patterns. These flows have been a subject of discussion for many regional towns.

Retail and service delivery

Access to goods and services is a major element of the location of towns and the economic activities within them. Many Australian towns were established as a support base for industry. These towns supplied industry and met the needs of workers and their families. Several theories consider the role of retail and service delivery in the spatial and functional character of towns.

Central place theory

The ability of people to access a range of goods and services is important in the size and locations of towns. The most developed theory of the spatial pattern of urban and commercial activities is Central Place Theory (Eppli and Benjamin 1994). In 1933, geographer Walter Christaller tried to discover whether there were laws which determined 'the number, sizes and distribution' of central places—in simple terms, towns and cities which service the surrounding region (Christaller 1933 trans. Baskin 1966). Central place theory gives us a basis for understanding how towns and cities of different sizes are spatially distributed, and correspondingly, where higher order⁷ goods and services are available.

Higher order goods require a higher level of demand before they become available for sale, and are therefore found in larger centres (Brown 1993). For instance, new cars are higher order goods, while groceries are lower order goods, and so while the former are found only in more populous centres, the latter are more widely spread.

The premise of Central Place Theory is that each good or service has a 'range': that is, the maximum distance consumers will travel to buy the item. People are willing to travel further to buy higher order goods, so these have greater ranges. However, the demand for a good within its range is not consistent: consumption lessens with increasing distance. Christaller reasoned that if a person has a certain budget for a good or service, then the more money they use to travel to the item, the less is left for the purchase, and the less frequently they can buy it. This concept of 'distance decay' has implications for service delivery, due to a reduction in use with increasing distance from the service (Pugh and Cheers 2010). In addition to having larger populations and higher order goods and services, larger central places also service larger surrounding areas.

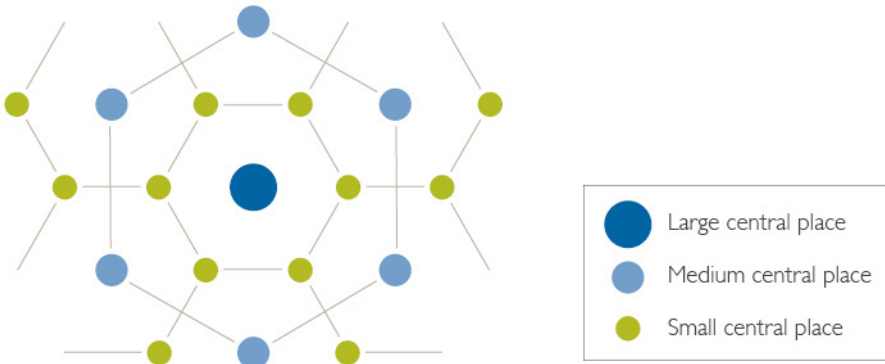
Christaller's model contains a number of significant assumptions and limitations. For example, it assumes that consumers buy only one item per trip, and shop at the nearest centre where that item is available (Brown 1993). However, real world consumer behaviour is more complex. Studies on the phenomenon of shopping outside one's area show that consumers do so for a number of different reasons. People may shop at a more distant location while visiting for work or social reasons. Additionally, lower-order goods may be purchased at a more distant location in combination with the purchase of higher-order goods. A further limitation is noted by Brakman et al. (2001, p.32) regarding the economic underpinnings of central place theory. These authors contend that the main problem with the approach is that the economic rationale behind consumers' and firms' decisions is unclear and that, for example, the demand curves are assumed. That said, analysis by BITRE into cost of living in regional areas found the distribution of activity based on Central Place Theory was close to the observed activity spatially in regional Australia.

Ultimately this theory highlights that the spatial distribution of towns and cities can exert a strong influence on the type and range of activity within a location—position matters. Christaller's deductive reasoning led him to devise multiple class-sizes of central places arranged in a systematic way. There are several variations of the model: a marketing principle (focused on goods and services access, where the central place serves two other lower-order places), a transportation model (minimising network length, where three lower-order places are served) and an administrative model (where six lower-order places are served) (Agarwal 2011). In his

⁷ Higher order goods and services is a term used by Christaller. In practice, these are goods and services that have less demand in the population or are large value purchases compared to their transaction costs.

marketing principle model, each central place has six, equally-spaced central places of the next-smallest class surrounding it (Figure 2.3).

Figure 2.3 Distribution of central places according to central place theory



Source: BITRE, adapted from Christaller (1933).

Porter's competitive strategy theory

A firm's competitive advantage refers to its position in the competitive landscape—in essence, a firm's advantage relative to other firms. A source of this competitive position can be through having a distinctive product, having a difficult to replicate product and/or economies of scale that reduce costs.

This concept of competitive advantage also applies to geographical areas⁸. The concentration of activity needs to be understood and analysis by Porter (1990, 1998) provides a rationale for the clustering of activity. Porter describes groups of competing and related companies that benefit from co-location. These groups are able to attract customers due to competitive pricing, but also work cooperatively with related firms, whilst benefiting from the larger specialised labour supply that supports firms forming around an industry cluster. The key feature of the Porter model is the mutual visibility of competing firms. This provides both a regional focus for customers and spurs competitiveness between the co-located firms in terms of price and production efficiency. The competitiveness of the whole cluster is thus improved.

The phenomenon is often illustrated by reference to retail. For example, the co-location of booksellers in London provides an incentive for book buyers to visit that location (where there are many sellers), thereby providing a large number of potential buyers. This is an incentive for more booksellers to locate there. However, it also means that the competition between the closely located sellers will result in lower prices and better service. This in turn makes it a more attractive location for buyers to visit. The result is an efficient, self-sustaining cluster.

While Porter's model shows how such an established cluster system may operate, the mechanism for the initial cluster establishment is not described, other than to note that chance is a factor. Other authors treat the origins of clusters similarly. For example, Fujita et al. (2000, p.1) describe the process of maintaining clusters and agglomeration of booksellers in

⁸ Michel Porter applied the concept to the 'Competitive Advantage of Nations'.

London, but do not describe the initiation of the cluster. They simply accept it as a product of history, and focus on the 'circular logic' sustaining the cluster.

The Hotelling model

Another well-known model that demonstrates businesses spatially concentrating is the 'Hotelling' model. The classic Hotelling model is of two ice-cream sellers on a beach, both of whom try to maximise turnover and profit by being closer than their competitor to as many customers (spread evenly along the beach) as possible (McCann 2001). The end result of competition in a Hotelling model is that the two competing firms will locate in the centre of a market (beach) because any movement away leads to a loss of market share.

The Hotelling result is unstable once more than three firms enter the market, as firms would keep changing positions. In addition, it does not hold in situations in which competition is based on price. These results in real life should be viewed with caution as there are many observations in which both price competition and spatial clustering are evident such as retailing.

Retailing and other services as an industry base

The relationship between towns and their commercial activities is often overlooked as a 'basic' industry as it exists to serve local needs rather than injecting new funds into the region. But it has been and remains the primary function of most Australian regional towns. In fact, the types of goods and service available in regional towns and their market size have underpinned many local economies.

Theories of industrial location contain important lessons for the delivery of goods and services in towns themselves. For instance, economies of scale and agglomeration are also applicable to the location of retail and service providers. These types of businesses commonly co-locate in shopping centres or along main streets of towns. Both homogenous and differential commercial clusters benefit from agglomeration by raising a location's attractiveness for consumers (Arentze et al. 2005). For instance, similar stores such as restaurants, furniture and motor vehicle dealerships often co-locate in an attempt to generate a larger market share than individually would be likely.

Moreover, a strong retail sector is often integral to the growth of other industries or industry clusters. Expanded retailing supports a larger labour market, additional support services and better infrastructure than single industries by themselves. By increasing the size of the population, retail services also increase the demand for health, education and other government services.

Retail theory

Recent literature relevant to understanding retail positioning relates to retail demand externalities. This occurs for large shopping centres, in which low-order goods retailers and smaller retailers receive additional customers by positioning next to a high-order anchor retailer. Basically, retail sales for smaller stores increase when an anchor store⁹ is co-located. A strong contributing factor as highlighted by Eppli and Benjamin (1994) is that the image of

⁹ An anchor store is a major commercial store that is usually large department or grocery stores part of prominent chain network.

an anchor tenant is important for customers' selection and can draw consumers from greater distances to a particular centre. Research by Nevin and Houston (1977) reveals that anchor department stores are very important and are possibly the primary reason for choosing a shopping area (cited in Eppli and Benjamin 1994, p.15).

While retail demand externalities are often presented in reference to shopping centres, they also applicable to shopping in towns that can attract and retain customers into their centres. For many regional towns, the centre of town is the shopping precinct. Its applicability to generating economic activity for regional towns is obvious as towns begin to compete with each other, similar to the competition between shopping centres. An approach advocated by Howell (2005) is that businesses such as retailers and service providers in small Australian towns should emulate some of the attributes present in shopping malls to reduce 'outshopping', and so retain a viable retail sector.

A key feature in understanding this clustering of spatial patterns over time is the importance of technology. A greater number of people 'in town' creates turnover and raises the overall market size for other local firms, further inducing income in a town's economy, reflecting the role of a 'basic' industry. Gibbons and Overman (2009) point out that this increase was made possible by the motor car. It enabled people to choose where and when they would shop. The lowering of transport costs raised competition, forced firms to lower mark-ups, led to a 'welfare benefit to consumers' and 'a real resource saving to society' (Gibbons and Overman 2009, p.37).

Retailers can function in conjunction with other offerings in a town such as cinemas, leisure complexes and business services. Together they draw even more customers from outside the town while limiting leakage of money into neighbouring centres.

While this is likely to benefit the town as a whole, an important aspect for town planners is that an anchor store (or shopping mall) positioned outside the town centre can quickly drain people away from the centre to the periphery, which may have detrimental effects for the original town centre.

Nevertheless the concept of an anchor 'store' for a town could also take on a wider definition, as post offices, pubs, government services, schools and banks form part of the important activities positioned in regional towns which will draw customers.

Government service provision

The theories presented so far look exclusively at private enterprise. However, government is also an important component of local economic activity in many towns. Governments provide public goods and services that provide positive externalities; have network characteristics (road network); and goods that are unable to exclude recipients. As with private suppliers, governments need to make decisions regarding the range, quantity and location of services it provides to the public at a reasonable cost. Judgements include the location of schools and hospitals, but similar spatial choices are required in relation to the provision of services such as social security and industry support.

Towns also benefit from local government services by:

- easy access to the government services
- a source of employment for local residents.

However, the delivery of government services is faced with balancing economic efficiency and distributive equity. Economic efficiency implies the supply of output at least-cost by allocating resources to their best effect, while equity objectives attempt to address the distribution of the service across the country. The real challenge for service delivery into regional areas is lower population densities. Larger distances have to be travelled and the small number of people in any location prohibits economies of scale. This makes the delivery of services in regional locations more expensive than those provided in dense urban environments.

To meet this challenge, governments have adopted different approaches over time. Tonts (2000) argues that Australian governments have had a long history of public sector intervention to encourage economic and social development in regional locations. This includes land reforms, grants and infrastructure provision of post offices and telecommunication networks across the country. States have also contributed greatly to the social infrastructure of regional areas through schools, hospitals and police stations. Before the Second World War, these services were provided on per capita bases to support rural prosperity (Grebles 1979 cited in Tonts 2000). The underlying premise was to promote economic development.

The emphasis changed during the post-war boom periods, by shifting government policy towards more concern for social equity, which was reflected in a substantial expansion of 'government outlays and revenues as a proportion of Gross Domestic Product (GDP)' (Gerritsen 2000, p.134). Policy was refocused to ensure that 'inequalities between urban and rural population were minimised' (Tonts 2000, pp.60–61). Approaches included increased spending on health and education targeting disadvantaged rural populations and pursuing equity goals through government monopolies by subsidising 'loss-making rural services from more profitable urban and metropolitan' locations (Tonts 2000, p.61).

Pressure on government to reform mounted through the 1980s, from several sources as outlined by Quiggin (2001). These included increasing financial constraints, inefficiencies in the public sector and the rising use of outsourcing or contracting out for services. This led to a more market-led allocation of service delivery. Tonts (2000, p.62) characterises three strategies taken by government:

- privatisation of public services and infrastructure
- withdrawal and rationalisation of public services
- devolution of responsibilities.

Whilst these strategies are not theories as such they provide a picture of the impact of changes to government service provision. The rationalisation and withdrawal of public services has resulted in a greater degree of concentration of activity into larger regional centres. This point is taken up in Chapter 10, which examines the concentration of activity specifically in reference to the centralisation of activity and their consequences for town development.

An important facet of these approaches is the lasting influence of mainstream decisions of government on a town's activities. Decisions in education, health and delivery of community services have high degrees of spatial impacts that can be overlooked or not well understood. The

position of a hospital or secondary school has a strong potential to influence the fundamental economies of towns through their size and potential to act as a basic industry. Town residents in regional locations often cite a loss of school or medical services as a strong indicator of the town's potential decline. But it can also prompt local residents into entrepreneurial actions that identify local problems and implement solutions.

Conclusion

These theories do not provide a complete explanation of all the spatial patterns of activity within Australia. But they identify the salient elements in certain types of patterns and some of the factors which might lie behind them (Carr 1997).

As suggested at the beginning of this chapter, there are a number of overarching factors that provide the context for these theories: the location of resources and the wider environment, history, technology and the economic and social context. Some of these factors change radically over time—for example, technology leading to increased mobility through the car, or the discovery of new resources such as iron ore deposits influencing mining activity. All of these factors alter the context in which producers and consumers make decisions, and also the types of decisions they make.