The Australian Urban System
Trends and Prospects

prepared for the
Urban and Regional Development Review

by

The Australian Housing and Urban Research Institute

in conjunction with

Spiller Gibbins and Swan Pty. Ltd

April 1994
The Australian Urban System
Trends and Prospects

prepared for the

Urban and Regional Development Review

by

The Australian Housing and Urban Research Institute

Chris Maher
Graeme Hugo
Ruth Fincher
Mike Berry
Robert Stimson
Spiller Gibbins Swan
John Stanley & Associates
Emma Saunders
Peter Newton
Tony Richardson
TABLE OF CONTENTS

1. INTRODUCTION
1.1 The Brief
1.2 Tasks
1.3 Structure of Report

2. SETTLEMENT PATTERNS AND ECONOMIC DEVELOPMENT
2.1 Recent Initiatives in National Structural Adjustment
2.2 Adequacy of the National Policy Mix
   2.2.1 External Factors - General Agreement on Tariffs and Trends
   2.2.2 National vs. Spatial Policies
   2.2.3 Sources of Economic Growth
   2.2.4 The Creation of Competitive Advantage
2.3 The Role of Urban Policy in National Economic Development: An Analytical Framework
   2.3.1 Urban Management and Production Costs
   2.3.2 Urban Management and Innovation/Creativity
   2.3.3 Urban Management and Cities as Products in their Own Right
   2.3.4 Summing Up

3. POPULATION TRENDS
3.1 Population Growth
3.2 Population Composition
   3.2.1 Immigration and Ethnicity
   3.2.2 Household and Family Structure
   3.2.3 Changing Age Structure
3.3 Population Distribution
   3.3.1 Population Distribution by State
   3.3.2 Population Migration
   3.3.3 Urban Concentration
   3.3.4 Intra-Metropolitan Distribution
3.4 Future Population Trends
3.5 Household Formation
   3.5.1 The Underlying Requirements for New Dwellings
   3.5.2 National Trends
   3.5.3 State Forecasts
3.6 Conclusions and Implications

4. EMPLOYMENT AND INVESTMENT
4.1 Structural and Spatial Change in Employment
4.2 Likely Future Trends in Employment
4.3 Capital Investment and Economic Activity
4.4 Changing State Shares and Private Capital Investment
4.5 Foreign Investment
4.6 Impacts of Fixed and Operational Costs on Industry Sector
4.7 Sydney’s role as a ‘World City’
4.8 Conclusions and Implications
5. INFRASTRUCTURE INVESTMENT

5.1 Infrastructure Investment - Patterns and Trends
   5.1.1 Capital Investment - Private and Public
   5.1.2 Infrastructure Expenditure - Capital and Recurrent
   5.1.3 Infrastructure Expenditure - Patterns and Trends, 1966-1993.

5.2 Transport Investment and Economic Performance
   5.2.1 Context
   5.2.2 Public Investment, Labour Productivity and GDP Growth
   5.2.3 Increased Road Investment
   5.2.5 Investment in Rail Infrastructure
   5.2.5 General Conclusion

5.3 Telecommunications Infrastructure and Influence on Urban Form

5.4 Air and Sea Transport Trends

5.5 Infrastructure and Economic Benefits
   5.5.1 Reduced Production Costs
   5.5.2 Innovation and Creative Development in Industry
   5.5.3 Cities and Regions as Tourist Attractions
   5.5.4 General Conclusions

6. SOCIAL STRUCTURE

6.1 Introduction
6.2 The measure of Social Disparities
6.3 Trends in Social Polarisation
   6.3.1 Income Differentials
   6.3.2 Unemployment
   6.3.3 Spatial Distribution of Disadvantage

6.4 Implications of Social Trends

7. ENVIRONMENT

7.1 Introduction
7.2 Urban Environmental Externalities
7.3 The Case of Road Transport
7.4 Green Production: Environment Growth Industries

8. ROLE OF GOVERNMENT IN URBAN AND REGIONAL DEVELOPMENT

8.1 Context
8.2 The Kelty Report
8.3 The Porter Approach
   8.3.1 Factor Creation
   8.3.2 Demand Conditions
   8.3.3 Government’s Effect on Related and Supporting Industries
   8.3.4 Government’s Effect on Firm Strategy, Structure and Rivalry

8.4 Assessment
   8.4.1 Infrastructure
   8.4.2 Education and Training
   8.4.3 Capital Investment
   8.4.4 Social and Physical Environment
8.4.5 Regional Initiatives
8.4.6 Pricing
8.5 Conclusions

9. OVERVIEW: STRUCTURE AND PATTERN OF URBAN AND REGIONAL DEVELOPMENT

9.1 Economic Restructuring
9.2 Demographic Transition
9.3 Spatial Development
9.4 Regional Development and Competition
9.5 Overview
9.6 Policy Directions
  9.6.1 Creating the Conditions for More Competitive Production
  9.6.2 Building the Foundation for Innovation
  9.6.3 City as Product
9.7 Delivery Mechanisms and Institutional Innovation

APPENDIX I POPULATION TRENDS

APPENDIX II HOUSEHOLD FORMATION AND DEMAND FOR LAND

APPENDIX III EMPLOYMENT AND INVESTMENT

APPENDIX IV INFRASTRUCTURE INVESTMENT
  A. Macro-Economic Context
  B. Infrastructure Investment
  C. Transport Infrastructure Provision
  D. Telecommunications

APPENDIX V SOCIAL STRUCTURE

APPENDIX VI ENVIRONMENT: FROM IMPACT TO OPPORTUNITY
EXECUTIVE SUMMARY

Australia is faced with an increasingly competitive and internationalised economic system. Economic well being will depend on our ability to develop competitive strengths within this system.

Considerable progress has been made with macro-economic restructuring and micro-economic reforms. A further area of opportunity is to foster a form of urban and regional development which enhances the conditions for a more competitive economy.

Urban management should figure in the national armoury of economic development tools. Careful management of cities as the focus of production can yield multiple micro-economic efficiencies, a heightened capacity for technological innovation and an improved penetration of the growing cultural tourism market.

The relationship between urban development, management and wealth creation can be analysed in terms of:

- cities as efficient producers of goods and services
- cities as the foci of knowledge, information and innovation
- cities as marketable products in their own right

Knowledge of current development trends and processes is a prerequisite to identifying means of more effective policy and management initiatives. Just as growth and development have a spatial expression, so does the impact of current restructuring. Policy formulation cannot ignore spatial outcomes, but can use existing spatial arrangements to advantage.

Population Trends

Population growth is high but declining. The level of immigration is the major variable factor in population growth rate which has declined from 1.78 per cent in 1988 to 1.06 per cent in 1992-93.

Internal migration is resulting in a substantial redistribution of the population. Queensland’s growth rate is double that of the national average with movers originating predominantly in New South Wales or Victoria. Sydney and Melbourne however receive two thirds of all immigrants to the country.

The concentration of population into the major metropolitan areas has stabilised and some non-metropolitan locations are now growing at a faster rate. However, these countercumaranisation trends have focused on a relatively few locations, especially the coastal amenity regions of New South Wales and Queensland, and the areas abutting the periphery of the major metropolitan areas.

Suburbanisation is still the major factor in the intrametropolitan distribution of population. Peripheral development draws the population from existing locations quite close to the fringe. Population levels have stabilised in the inner city, but losses are accelerating in the middle suburbs as household sizes fall.

Average household size has fallen from 3.55 in 1961 to 2.80 in 1991. Single parent, and lone person households are growing most rapidly. However 70 per cent of all families still have resident offspring. All of these elements have implications for housing demand.
The population is progressively ageing, and this will accelerate as the baby boom generation begin reaching old age. Increasing concentrations of the aged will occur in the middle suburbs of the metropolitan areas.

Household formation and underlying housing demand are projected to fall. From a current level of 168,000 commencements (1993-94) the IPC forecast a fall to an average 117,000 in the medium term. IPC forecasts are generally considerably lower than are those by individual states as a result of different assumptions.

Metropolitan fringe growth is likely to remain the dominant expression of growth. However, with declining levels of overall demand the pressure for expansion even in these areas is likely to ease somewhat in the next 20 years.

The future growth composition and distribution of the population and the consequent demands for space and services are of considerable importance to the development of cities and regions. Not only will such development compete for investment with infrastructure and facilities needed for the traded goods sector, but the type of development itself may contribute to the competitiveness of Australia.

**Employment and Investment**

Structural shifts in the economy have resulted in employment being increasingly dominated by the consumer and producer services sector. The shift to services plus the emerging importance of elaborately transformed manufactures and the rise in tourism (now the largest earner), currently dominate the export sector.

The growth sectors of the economy have a distinctive geography at the regional level. Tourism employment and investment is most concentrated in Sydney, south east Queensland and Cairns plus a few other largely coastal regions. Export manufacturing is concentrated in Sydney and Melbourne. Producer services growth has been particularly strong in Sydney which is strengthening its role as Australia’s gateway and only ‘world city’.

Within cities there has been significant redistribution of employment to the middle and outer suburbs. Massive losses of manufacturing jobs have occurred in the inner city regions with some gains in this sector further out. Outer suburbs have had increases in the distributive and social services sectors.

Employment forecasts (DEET, 1991) anticipate a slowing of the growth in producer services, but strong growth in transport, community services, recreation and personal services.

The pattern of capital investment does not necessarily mirror the distribution of population and employment. It is influenced by the location of strategic infrastructure (airports, ports, transport and communications) and agglomerations of nationally and internationally linked advanced manufacturing and producer services.

There has been a steady fall in gross fixed capital expenditure in some sectors. If not corrected this could eventually lead to reduced production capacity and competitiveness. Capital investment in infrastructure and services is required to create and maintain strategic network linkages which are the key to export oriented activity.

New South Wales and Victoria have higher per capita levels of investment than Queensland despite their lower population growth rate. Sydney and Melbourne have increased their dominance as destination for private capital investment.
The strong export performance of both tourism and manufacturing have important urban and regional impacts. Whereas tourism is generating jobs and has a flow on population attracting effect, manufacturing has increased output but with a reduced labour input.

There are significant regional variations between the capital cities in terms of production costs and pricing policies of public utilities which influence decisions on enterprise location. Sydney and Melbourne have considerable cost advantages over Brisbane in factors such as energy, water supply and sewerage treatment.

Australia’s cities and regions are developing quite distinctive geographies of population, employment and investment. On the one hand population and employment in consumer related manufacturing and services; as dispersing to sun belt coastal regions and the metropolitan peripheries; on the other, investment in high technology manufacturing and producer services with national and international linkages are concentrating at strategic agglomerations in relatively few locations.

Infrastructure Investment

Investment in infrastructure can increase the efficiency of capital, particularly when targeted to trade exposed sectors and major nodes. However, gross fixed capital expenditure over all categories of infrastructure has declined from 8.0 per cent of GDP (1966-67) to 4.5 per cent (1992-93). At the same time final consumption expenditure increased from 11.2 per cent to 16.2 per cent.

Declining rates of infrastructure investment could contribute to reduced economic performance because of the link between infrastructure investment and growth in private sector productivity. The nature of this link is the subject of considerable debate.

Investment in urban arterial roads appear to be particularly important. Road transport costs are a significant input cost, but the value of the Australian net road stock declined from 17.5 per cent of GDP to just over 11 per cent. This was a result of static road investment at the same time as there was a substantial increase in traffic volumes.

Communications infrastructure will increasingly influence the form and economic capacity of cities and regions. Current trends are favouring existing centres of agglomeration thus enforcing their attractiveness, particularly for higher order activities.

Exports by air are increasing at a greater rate than sea exports and are of half the value despite the fact that total export tonnage by sea is over 1000 times as great. Air freight is likely to increase in significance with increases in value added exports.

Air freight is carried predominantly as cargo on passenger flights. There is some divergence between air passenger demand and air freight demand which will require effective connections between the centres of passenger and freight demand.

The size of the road freight task means that considerable benefits could be obtained by concentrating on improvement to urban infrastructure which would increase accessibility for moving freight between domestic origins and destinations by better linking of these with ports and airports.
Social Structure

Economic restructuring and policies to enhance competitive advantage may have differential social outcomes. Increasing social divisions will conflict with other government social justice priorities, and may act as an impedance to greater competitiveness.

Economic disparities, although much less than in some other countries, are still of concern. Both after-housing poverty and income disparities have grown recently.

Unemployment displays a very uneven spatial distribution, mostly affecting areas heavily dependent on manufacturing. Youth unemployment was nationally at a level of one-third the teenage workforce with highest instances in non-metropolitan areas. The long term unemployed were most prevalent in remote, resource based regions.

Socio-economic disadvantage within the two largest cities shows a very strong inner city concentration. This coincides with the areas most affected by restructuring and the loss of traditional jobs. Other areas where disadvantage is concentrated are industrial suburbs - both older inner and middle region areas, and even outer established industrial areas.

There is little evidence of concentrations of disadvantaged population in the outer suburbs of metropolitan areas except where these are highly dependent on manufacturing activities.

Environment

The environmental dimensions of urban and regional development have generally been understood in terms of the various impacts generated by projecting current patterns of growth and investment. Under the assumption of unchanged conditions (technology, planning etc.) there will obviously be significant environmental impacts in fast growing areas.

Environmental considerations however can also provide opportunities for sustainable economic growth and become a component of the competitive advantage of internationally oriented industries.

Cities generate significant negative externalities through the production of waste caused by both industrial and consumer activities. Energy production, distribution and usage, including transport are prime sources.

The costs imposed by environmental externalities can be greatly reduced - and hence general economic welfare increased - by a combination of total least costs planning approaches and the application of new control technologies. Both provide extensive industrial development and employment opportunities in their own right.

If urban policies aimed at reducing the environmental externalities of transport through appropriate consolidation policies, infrastructure provision and technological improvement are successful, then other environmental problems related particularly to land encroachment will also be addressed.

Road transport is a particularly significant generator of negative externalities through gaseous emissions, lead pollution and congestion. Measures to ameliorate these problems could be achieved through a mix of regulation and market incentives. Initiatives in these areas could themselves spur significant improvements in national competitive advantage.
Competitive success will itself be increasingly dependent upon minimising adverse impacts on the environment, particularly in the ability to attract footloose activity.

**Role of Government**

Investments in urban and regional development can complement macro- and micro-economic reforms in achieving the goal of greater economic competitiveness by recognising differences between regions, fostering strengths, and reducing weaknesses.

While establishing the right macro-economic environment is vital, it is not sufficient for a successful policy of enhancing competitive advantage.

A review of the relevant literature suggests a varied role for government with a focus on creating an environment in which firms can gain competitive advantage, rather than governments being directly involved.

The clustering of competitive industries indicates that the bases for advantages are very localised. Thus spatially specific initiatives which affect the local environment are an important policy tool.

The essential task of government is to create an environment where firms are innovative and dynamic. The role is thus one of ‘facilitator, signaller and prodder’. The most significant influences are in creating advanced factors, upgrading demand conditions, deconcentrating economic power and signalling.

The Kelty report’s emphasis on regional initiative as an impetus to further economic growth is sound. However, initiatives need to be targeted to areas which will enhance overall efficiency and productivity rather than be more widely dispersed. It is recognised that there may be social and environmental impacts of such an approach which need to be considered.

The long term success of encouraging growing competitiveness in Australia will be through fostering existing linkages and ensuring the establishment and maintenance of suitable infrastructure in those locations where the potential pay off is greatest.

The well documented trend for product innovation to cluster spatially in areas which provide a range of facilitating conditions provide a strong argument for a greater government role. Specific areas would include extending the coverage of the National Highway System within urban areas to encourage the development of the more trade-exposed industry sectors; restructuring fuel tax; upgrading key transport interchanges; privatising airports; build stronger links between industry, educational training and research institutions; ensuring adequate capital for small and medium sized business through access to superannuation funds; enhancing the environmental, cultural and recreational quality of cities and regions; and revising the pricing of government goods and services to make consumers more aware of the full costs their decisions impose on the community.

Institutional structures and relationships need to be clarified. There is need for co-operative intergovernmental arrangements in which each level has its respective role clearly defined and where co-operative arrangements are clearly spelt out. This should include a review of the role of, and criteria used by the Grants Commission in financial allocations, devising Commonwealth funding for relevant initiatives, and developing intergovernmental models for clustering support and development.
1 INTRODUCTION

The last decade has seen an unprecedented rate of change in world economic order. The development of global financial systems, international production systems and the increased mobility of both capital and population have exposed Australia to a very competitive world economy. The maintenance of living standards in this country is dependent on ensuring a role for Australia in this international framework. Considerable progress has already been made in terms of economic restructuring. However, there needs to be continuing efforts in further identifying and developing competitive opportunities. One area where such opportunities lie is through fostering a form of urban and regional development which enhances Australia's competitiveness, promotes the conditions for innovative initiatives, and builds on existing advantages. This report is concerned with the potential for enhanced competitiveness which could result from a greater effort being made in advancing the economic role of cities and regions.

The character of a national settlement system is a complex product of historical, physical, institutional, economic, and demographic factors. Once established, that very character can be an impediment to, or a conduit for future development. This report reviews trends in a number of indicators which allow us to identify the current status and trajectory of urban and regional development in Australia. The ultimate goal of the project is to raise questions about the implications of these trends, and particularly how they might affect Australia's ability to compete in an increasingly global economy.

The project is concerned with understanding change: change which is currently occurring within the national settlement system of Australia, the forces which are driving it, and the implications of the likely outcomes for future competitiveness and liveability of Australian cities and regions. Without understanding what the developmental trends are, and how and why they are shaping our future, it will be difficult to develop strategies to ensure a prosperous, equitable and sustainable set of outcomes.

It has long been acknowledged that Australia has developed a unique settlement system. It is the product of geography, a relatively small population in a vast and largely inhospitable land; of history, where separate states developed individual administrative structures under conditions of colonisation; and of resource endowment, where the economy has been dominated by the rural and mineral resources which have traditionally been exported in a relatively unrefined state. The settlement system thus developed as a widely dispersed set of primate cities generally dominant within their own states. Within these cities, population and economic activity have both tended to disperse as access and mobility have improved in an environment where land has been seen as a plentiful resource.

Economic growth has been steady and has provided both a growing employment base and the basis for a wide distribution of wealth. In particular the post World War II period saw Australia develop a strong industrial base, oriented toward import replacement and nurtured by a set of trade barriers which minimised competition for the fledgling economy. However, the stable period of economic growth came to a sudden end in the early 1970s, precipitated by the OPEC oil crisis and the subsequent instability in world economic and financial systems.

As a result of a number of global upheavals, Australia is currently faced with a number of major challenges - challenges which are contained within some of the major forces for change driving the development not only of Australia, but the world economy.

In the last decade it has been apparent that the reality of global competition dominates. Thus it is essential for national and sub national economies to develop capacities and capabilities to effect rapid adjustments to changing conditions if they are not to be sidelined. Future national economic health is
dependent on the ability to respond to this changing environment. Forces of globalisation, structural economic adjustment and demographic transition are all having major impacts on the evolution of the Australian economy. These have resulted in substantial impacts at both the national and the regional levels through both sectoral and spatial outcomes. Responses such as financial deregulation and the progressive reduction of tariff barriers have further exposed Australia to international competition and have hastened the development of industries where this country can best compete in the international system.

In this context a number of important questions can be raised. Among these are: What are this country's opportunities within an increasingly global economy? Can public sector action contribute to conditions which will enhance competitive advantage, and if so how? To what extent might economically driven responses conflict with or complement other social and environmental goals? And, how can cities and regions contribute to economic development?

To be able to assess Australia's ability to respond to such external forces, it is necessary to understand some of the current processes in economic, social, demographic, environmental and political arenas. Only by comprehending how and why growth and development are presently trending are we able to contemplate some of the opportunities and constraints which such trends embody.

1.1 The Brief

The brief required the preparation of an overview of recent trends and development prospects for the Australian urban system. The purpose is to provide benchmark data and a summary position statement to assist with the formulation of policy and the development of strategic programs by the Commonwealth, focused particularly on the role of the urban system in an internationally competitive Australian economy.

The key issues to be addressed include an analysis of where market trends and urban development strategies are taking our cities physically, and also how government, through the available instruments of fiscal policy, financial programs, legislation and other powers might influence the development of the national economy through involvement in the development of our cities.

This study is intended to draw out the linkage between the urban system and national economic performance in order that government action can be developed. A second goal is to provide benchmark information on trends in the Australian urban system, knowledge of which is important to the development of appropriate public sector responses.

1.2 The Tasks

Within the context of an analytical framework which emphasises the relationship between urban development outcomes and economic competitiveness, the study sets out to provide a descriptive analysis of metropolitan and non-metropolitan development. By understanding the current nature of development we can be better equipped to identify strategies which may guide future trends - ways which enhance Australia's economic potential.

The specific tasks to be addressed are:
• Population trends - including growth rates, natural increase and immigration, internal migration at both inter-regional and intra-metropolitan scales, and forecasts of future population levels.
• Household formation and demand for land.
• Employment and investment - particularly major patterns of change, both spatial and structural.
• Infrastructure provision - with emphasis on the relationship between infrastructure provision and the ability of the urban system to maximise its potential with regard to its role as an extension of productive capacity, creator of new knowledge, skills, innovation and creativity, and a liveable entity and environment.
• Social structure and social polarisation - a review of trends in indicators of social disparities in order to identify the extent to which there are growing social divisions as a result of changing economic processes, and if so how they might be addressed.
• Environmental factors - entailing a review and evaluation of available environmental indicators in order to assess the extent to which existing urban development processes undermine the conditions of environmental sustainability.
• Structure and pattern of Urban and Regional Development - an overview and synthesis of the above examining trends and forces effecting changes in settlement patterns. This will lead to a consideration of policy responses and policy options facing government at all levels.

1.3 Structure of Report

The report is structured in such a way as to emphasise the analytical and conceptual framework, basing the argument around the need and ability to harness changes in Australian economic structure to enhance competitive advantage in an increasingly global environment (Chapter 2). Then each of the specific analyses of trends has been abstracted from the more detailed appendices, and presented in the light of the analytical framework (Chapters 3-7). Chapter 3 examines population trends and the spatial expression of growth; Chapter 4 analyses the nature of economic activity, particularly employment and investment; Chapter 5 reviews issues relating to infrastructure provision; Chapter 6 outlines issues in social structure; and Chapter 7 assesses the environmental implications and opportunities.

Chapter 8 raises some of the issues confronting policy makers as they come to grips with both current development trends and the need to be more farsighted in contributing to an economic environment which fosters competitiveness and innovation. At the same time they have to ensure that social and environmental factors are seen to be part of the competitive advantage rather just as by-products which have to be managed.

Chapter 9 concludes with an overview of the trends and issues associated with the emerging pattern of urban and regional development, and provides a summary of the opportunities which might be developed.
2. SETTLEMENT PATTERNS AND ECONOMIC DEVELOPMENT

2.1 Recent Initiatives in National Structural Adjustment

Australia has been engaged in a major structural adjustment process for the past decade or so. This transition has been engineered mainly through traditional neo-classical type macro-economic instruments, namely:

- Gradual removal of tariff and other trade barriers.
- Floating of the exchange rate.
- Deregulation of the domestic financial system.
- Adoption of strict fiscal disciplines, including a re-evaluation of public sector borrowing (particularly for non-income producing infrastructure).

In more recent years, these macro-economic policy adjustments have been complemented with a major micro-economic reform program. This has focused on:

- Accelerated restructuring of key trade exposed industries (e.g. steel industry and car plans).
- Greater competition and improved productivity in the transport and telecommunication industries (which have a pervasive effect on industry cost structures).
- Labour market reform, both in relation to specific sectors (e.g. waterfront) and more generally (e.g. loosening of central wage fixing arrangements).

There have been some considerable achievements including:

- rapid growth in export volumes, underpinned by a general improvement in the competitiveness of Australian export industries;
- diversification of exports, including rapid growth from a small base in a number of areas of sophisticated manufactured goods.

For the first time, exports of urban origin have become an important part of Australian export earnings. Approximately a quarter of Australian exports by value added, have that value added to them in urban areas.

Australia is emerging from these adjustments as an internationalised, outward looking economy. There are now many signs that Australia is moving decisively away from dependence on commodity exports to a greater emphasis on elaborately transformed manufactures and high value added service exports.

The recent OECD Economic Survey of Australia, 1993-94 notes that:

Growth in export volumes of manufactures averaged 10 per cent over the seven years to FY 1992/93 (twice the OECD average) with elaborately transformed manufactures (ETMs) growing at an annual rate of 20 per cent. In FY 1992/93, total manufactures grew by 12½ per cent in volume, while ETMs grew by 15½ per cent. Tourism has also expanded rapidly.
These successes reflect significant structural improvements in the supply-side of the economy over the past decade:

- Pre-announced phased tariff reductions and microeconomic reforms (for example, imports and domestic transport) have lowered input costs to firms and heightened the international orientation of the manufacturing sector, as well as promoting rapid growth of intra-industry trade.

- International cost competitiveness, as measured by unit labour costs, improved by 20 per cent over the past three years and by 30 per cent over the past ten years, reflecting the success in translating a large nominal depreciation of the Australian dollar into a real depreciation.

- An export culture is developing, with some 700 'emerging exporters' across a wide range of industrial sectors leading a shift in export mix to higher value-added services and manufactured products. In contrast to previous experience, export growth has been driven not by low domestic demand, but by a trend in which small and medium-sized Australian companies play a much larger role.

- Proximity to the booming Asian market has raised the awareness of Australia's geographic advantages. Currently some 57 per cent of merchandise exports are directed to Asia, compared with 48 per cent in FY 1981/82.

- Exports of services, notably tourism, are expanding quickly, reflecting in part the success of introducing more flexible working conditions, deregulation, and heightened competition in transport and other service industries.

The growth and diversification of exports has been underpinned by a general improvement in the competitiveness of Australian export industries, some of which derives from the policy program outlined above. Factors contributing to the improved competitiveness include:

- An increase in business research and development activity.

- Reductions in strikes and absenteeism and improvements in the flexibility of labour.

- Increases in the resources devoted to education, coupled with improvements in the efficiency with which these resources were used.

- Increases in the productivity of the transport sector.

- Improved productivity in government business enterprises, particularly in electricity and communications.

The development of industry plans for some key sectors, such as motor vehicles, has also been most important in improved competitiveness and increased exports. Many of these changes have been interventionist rather than neo-classical in nature.

2.2 Adequacy of the National Policy Mix

There is no doubt that great progress has been made in repositioning the Australian economy. Prospective policy initiatives appear to focus on Australia's changing role in engineering global and regional trade liberalisation. Asia figures prominently in these efforts.
2.2.1 External Factors - General Agreement on Tariffs and Trends

The potential influence of the GATT changes for Australia's international trade are significant. The OECD estimates the final outcomes on agricultural and industrial products will provide a boost to the global economy of up to $A418 billion by 2002. Australia's share of economic benefits is estimated by the OECD at a minimum of $A2.5 billion. The most recent estimates by the Industry Commission (December, 1993) are that the long term effects of the Uruguay Round will be an increase in Australia's exports of over $A5 billion and an increase in Australia's GDP of around $3.7 billion.

The key outcomes of the Uruguay Round lie in the areas of agriculture, industrial products, services and intellectual property.

The agreement on agriculture delivers benefits to Australia in key farm sectors such as beef, rice, wheat and barley and dairy products to the order of $A1 billion a year.

In the area of industrial products, most tariffs are being cut by a third, with very deep cuts in some sectors of crucial importance to economic recovery in manufacturing in the industrialised economies. Key outcomes for Australia include coal access in the EU, Japan and Thailand, significantly improved access for non-ferrous metal, steel, processed foods and a wide range of high value-added manufactured exports. The estimated gains from savings in duties for Australian exporters is over $400 million with the additional benefits of a stimulus for expanded global trade.

The Uruguay Round marks the first time that GATT-style rules and principles will be applied to services trade (to be known as the General Agreement on Trade in Services (GATS). It will provide Australian service exporters with improved international trading opportunities in the telecommunications, financial services, insurance, business and professional services sectors.

Australia's service exports account for about 20 per cent of its total export trade and have been growing annually at about 7 per cent since 1983-84. The agreement will further reinforce that trend.

The Trade in Intellectual Property Rights (TRIPS) agreement will boost Australia's performance as an innovative developer and exporter of intellectual property - computer software, films, TV, music, and video, creative designs and patent - exports of which are moving towards $A500 million per annum.

The GATT changes therefore have the potential to benefit Australia's economy quite markedly. However, converting potential to actuality will require considerable effort in creating the conditions whereby Australia can capitalise on the opportunities created. The majority of these benefits, agriculture included, will depend on our infrastructure (i.e. arterial roads, rail, harbours, airports) having the capacity to handle the increased level of exports. The urban economic sectors (industry and services) will have enhanced potential if economic development synergies can be enhanced by urban management policies which ensure adequate infrastructure (particularly transport and communications) and create innovative industrial and business environments.

2.2.2 National vs. Spatial Policies

The Federal Government's employment strategy has just been released. Contained within this are plans for industry development policies and the Government's response to the Kelty Report on regional development. It also addresses the Government's preferred balance between industry policy initiatives which emphasise the broad preconditions of enterprise development, and those which are focused on particular sectors or regions. The emphasis is very much on market led adjustments.
It seems likely that, with some notable exceptions, national economic development policy will continue to treat the economy as if it operates in an aspatial domain where non-traded inputs to production (positive externalities) and the non-priced impacts of production (negative externalities) are, in effect, assumed away. This bias in the national economic policy mix may well reflect Australia's constitutional heritage. The levers available to the Commonwealth have, by definition, been national and aspatial in nature. Indeed, some of the institutions and policies which have flowed from these constitutional arrangements have sought to deny or suppress the influence of spatial factors. The make up of the Senate as the national house of review, the equalisation principles pursued by the Commonwealth Grants Commission, and telecommunications pricing policy are some examples.

The lack of a spatially informed paradigm for national economic development is potentially a serious weakness in an otherwise strong array of recent and prospective reform initiatives. Even in a world of information superhighways, overcoming the friction of distance in economic interaction remains a key area within which production efficiencies can be captured. Moreover, cities as large consumers of lumpy infrastructure investments offer major opportunities to conserve capital resources through improved inventory management.

Perhaps less obvious is the nexus between patterns of settlement and the propensity for knowledge creation and technological innovation within the national economy. In a post industrial context, where the knowledge content of goods and services is the primary source of competitive advantage, the traditional analytical models which have underpinned much macro-economic policy in western countries have been found wanting. The predictive value of these models, particularly with respect to medium and longer term horizons, is severely limited by the treatment of technological change (i.e. innovation) as an exogenous factor in the economic growth process, hence the emergence of New Growth Theory (NGT) and the search for new explanations for the acquisition and retention of national competitive strength.

Prominent amongst this new generation of theoreticians is Michael Porter (1990), whose landmark work, *The Competitive Advantage of Nations,* is widely quoted by commentators from all points on the political spectrum.

Porter addresses the question: “Why does a nation become the home base for successful international competitors in an industry?”, rather than a simple inter country comparison that would seek to explain “Why do some nations succeed and others fail in international competitions?”. So while the focus is on understanding how firms or industries have developed a competitive advantage based on characteristics or aspects of the home nation, any lessons or answers are obviously critical for national economic prosperity as well.

Porter asserts that the four broad attributes of a nation that shape the environment in which local firms compete - the so-called ‘determinants of national competitive advantage’ - are as follows:

1. *Factor conditions* - the nation’s position in factors of production, such as skilled labour or infrastructure necessary to compete in a given industry.

2. *Demand conditions* - the nature of home demand for the industry’s product or service.

3. *Related and supporting industries* - the presence or absence in the nation of supplier industries and related industries that are internationally competitive.

4. *Firm strategy, structure and rivalry* - the conditions in the nation governing how companies are created, organised and managed, as well as the nature of domestic rivalry.
"The determinants, individually and as a system, create the context in which a nation’s firms are born and compete" (Porter, 1990:71).

Two additional variables can influence the national system in important ways and are necessary to complete the theory. These are chance and government. Chance events are developments outside the control of firms (and usually the nation’s government), such as pure inventions, breakthroughs in basic technologies, wars,... Government, at all levels, can improve or detract from the national advantage. (Porter, 1990:73).

Policies influence the determinants in different ways, and need to be considered on the basis of how they influence the entire system of determinants, as much as any one aspect. The determinants as a system (Porter’s so-called national ‘diamond’) and the ‘external’ influence of chance and government are shown in Figure 2.1.

The range of determinants in this model reveals the extent of departure from neo-classical economic theory which has stressed a narrow field of factors of production (basic inputs such as land, labour, natural resources, and capital) in explaining economic comparative advantage.

Porter argues that comparative advantage based on factors of production is insufficient in explaining patterns of trade. The standard theory, he argues, takes no account of economies of scale, the differential impact of technology, differential products and variable pools of national factors. While factor comparative advantage remains important in certain industries (dependent on natural resources, unskilled or semi-skilled labour or where technology is simple and widely available), it is less so, or irrelevant to industries and segments of industries involving sophisticated technology and highly skilled employees, “precisely those most important to national productivity” (Porter, 1990:13).

---

**Figure 2.1: The Complete System of Competitive Advantage**

*Source: Porter (1990:127)*
2.2.3 Sources of Economic Growth

From 1968 to 1990, Australian real output grew at an average annual rate of 3.7 per cent, labour input at 1.2 per cent per annum (in hours) and the capital stock at 4.2 per cent per annum. Disaggregating the contributions to growth in output by the Cobb-Douglas production function, growth in labour input was responsible for 22 per cent, growth in capital stock for 39 per cent and 38 per cent was unexplained (the increase in total factor productivity).

This simple disaggregation does not take into account the substantial investments that have been made in education in recent years, adding to the quality of human capital. Neither does it take into account improvements in technology embodied in new capital. When adjustments are made for such factors, labour hours become responsible for 14 per cent of the growth in output, human capital for 25 per cent and physical capital for nearly 50 per cent, leaving an unexplained residual of only 11 per cent.

Converting to per capita terms, the average rate of growth in GDP per capita of 2.1 per cent p.a. from 1968 to 1990 may be disaggregated into:

- 0.6 percentage points due to growth in the capital stock and its utilisation (0.9 points if the growth in capital stock is credited with the contribution of embodied technical progress);
- 0.9 percentage points attributable to growth in human capital;
- a negative 0.3 percentage points attributable to various labour market changes, the chief of which is a reduction in average hours worked per worker;
- an unexplained residual of 0.8 percentage points due to total factor productivity (0.4 points if the capital stock is credited with embodied progress).

The total factor productivity growth (residual) of 0.8 percentage points (excluding embodied technical progress from capital) compares unfavourably with many overseas countries. European countries generally managed about 1.5 percentage points and Japan 1.8.

When human capital and embodied technical progress which is included in the physical capital stock are included in the estimation process, these capital factors are central to explaining growth in output per head.

Australia's rate of increase in capital per worker was only half that for the OECD as a whole and, after allowing for Australia's younger population, government expenditures on education as a percentage of GDP it came 18th out of the 22 OECD countries (17th on adjusted basis). These two factors are likely to account for the relatively disappointing growth in output per head.

When contributions to output growth are considered at an industry level, economies of scale and scope account for the greater part of the unexplained residual. The economies of agglomeration, the fundamental rationale for cities, are probably an important part of overall scale economies.

With an increased emphasis on the role of manufacturing exports in raising potential economic growth rates, it is in urban areas that increased infrastructure investment is most likely to be required to assist economic growth:

- In pricing the development infrastructure, where the neoclassical policy approach is having increasing influence; and,
In the development of human capital, again an area where Australia has been lagging and where urban areas will be the main focus of development, by virtue of their concentration of population and related networks.

The risk of depending solely on a neoclassical policy approach is that such interventionist priorities will fall away, infrastructure investment and investment in human capital (for example) being skimped on in favour of a more hands-off approach, which is likely to favour growth of some of the more traditional resource-intensive industries, particularly mining. Urban priorities are likely to suffer in such an approach.

2.2.4 The Creation of Competitive Advantage

Australia's export structure has become far more diversified over the past decade. Two areas have been particularly successful:

- Services (especially tourism and education but also with success in financial and business services).
- Manufactured goods subject to export incentive arrangements linked to the tariff or to government procurement.

In the growth of manufactured exports, urban infrastructure requirements are important inputs to production. Urban infrastructure can no longer be seen as essentially redistributive. It becomes an important foundation on which economic diversification is built. Government services to business, particularly those services on which competitiveness is built, are also likely to require emphasis.

It is important to recognise that the competitive advantage sought in manufacturing and many services is created, not natural, which means that ultimately it is footloose. The creation of competitive advantages is easier if the following apply:

- The area in which advantage is created is attractive to those vitally involved in the creation of advantage, particularly any necessary highly-trained or creative personnel. This places emphasis on a range of urban quality of life components as important stimuli of economic growth.
- The competitive advantage should be the work of as many people as possible. Porter has described how both competition and cooperation may be needed for the development of competitive advantage.

A government which wishes to promote economic diversification needs an eye for detail, unlike a government which solely wishes to pursue neo-classical (or libertarian) economic policies. If it is to be successful, it must come down from the national level and develop strategies at the industry level and at the regional level.

In simple terms the basic factors of production are less important to competition because of:

- technological change (which has reduced the dependency on labour and enabled synthetic materials and alternative production processes to be applied);
- comparable factor endowments (most world trade now takes place among advanced nations with broadly similar factor endowments);
globalisation (which has led to worldwide selling, firms locating operations in different countries, or forming alliances with firms from other nations, which have the effect of decoupling firms from the factor endowment of a single nation).

Porter also focuses on the way individual determinants that define the national environment are mutually dependent, because the effect of one often depends on the state of others. For example, promising demand conditions, measured by the sophistication of home (or domestic) buyer needs, will not translate into advanced products, unless the quality of human resources, one element of factor conditions, available to industry are able to meet buyer needs. On the other hand advantages in one determinant can also create or upgrade advantages in another.

In this way external economies become important. “These are economies that accrue beyond the individual firm but within the group of firms in a locality or nation” (Porter, 1990:144). Where the conditions exist for the creation of external economies, the value of collective activity becomes more than the sum of the output from individual firms. This notion of economic outcomes unexplained by, or external to, trading relationships, is often assumed away in neo-classical economic models. Porter introduces it in his discussion of how the individual determinants in the diamond combine into a dynamic system, highlighting especially the relationship between the elements of domestic rivalry and geographic industry concentration.

Domestic rivalry is a key influence on the determinants of the system because it creates pressure for critical factor creation (upgraded infrastructure, including education), upgrades and expands home demand, encourages improvements and specialisation in related and supporting supplier industries and influences government policy directions.

All these pressures are intensified if the rivals are geographically concentrated. Clusters of related and rival industries stimulate innovation and improvement. For example, “Universities located near a group of competitors will be most likely to notice the industry, perceive it be important, and respond accordingly. In turn, competitors are more likely to find and support local university activity. Supporters located nearby will be best positioned for regular interchange and co-operation with industry research and development efforts” (Porter, 1990:157). Proximity also increases the concentration of information and its likely impact. The speed of information flow and the extent of diffusion encourage competition and upgrade.

In summary it is clear that clustering, and therefore, the spatial dimension are important aspects of economic activity. “The phenomenon of industry clustering is so pervasive that it appears to be a central feature of advanced national economies” (Porter, 1990:149).

Porter examines internationally successful firms and industries in nine industrial (or newly industrialised) countries to provide substantial and compelling evidence for his theories.

In Porter’s view then, sustainable and true competitive advantage is determined by the capacity of firms (and ultimately) nations to continually upgrade through technological improvements and innovation, to face competition and understand their environment, and how to improve it. Examples of where this has occurred show that geographical concentrations of industrial activity make a positive contribution. Neo-classical economic theory does not give due acknowledgment to technological upgrading and innovation, and the spatial dimension, in explaining economic capacity and activity.
Prud'homme (1993) has also examined the link between urban policy and macro-economic policy using French and Japanese data. He notes that standard macro-economics ignores cities and space. It relates to what, how and for whom goods and services are produced but is less concerned about where. However, he also argues that the where question (i.e. the spatial dimension) is important.

Different economic variables have different degrees of mobility e.g. savings, goods, information are highly mobile - infrastructure and housing stock are least mobile or fixed. Thus the classical factors of production (i.e. capital, labour, goods) are most mobile while other important factors such as infrastructure are much less mobile or completely static (i.e. a dam for water supply headworks and the main trunk lines and reticulation system).

Prod’homme also believes that cities can be considered more or less as a bundle of externalities, for example congestion, pollution, crime and blight representing negative externalities; agglomeration, networks, representing positive externalities. Consequently, cities influence four key macro-economic variables:

- **Productivity** - as a general rule the larger a city the higher its productivity but this only eventuates if the city is well managed in delivering public services/infrastructure.

- **Employment** - more efficient labour markets exist in larger cities (i.e. more chance of employees finding the job they want, employers finding the employee they want - this depends very much on structure and management). Also, larger cities have better capacity to handle economic adjustment (i.e. businesses declining, new business starting up).

- **Public Finance** - local taxes (i.e. metropolitan, provincial city) and their relative rates will influence economic activity (i.e. household saving and hence consumption, profitability of enterprises).

- **Environment** - some negative environmental factors increase with city size (e.g. doubling of $SO_2$ in a given location leads to 3 or 4 times the environmental damage). However, there can be economies of scale (e.g. waste disposal). Also, the marginal cost of pollution decreases with city size (i.e. a site is either spoiled or not spoiled rather than more or less spoiled). Further, denser cities are resource savers (i.e. less land and energy per capita). Finally, transport flows increase with dispersion.

Porter, Prud’homme and others of the New Growth Theory school point to a need to broaden the base of policy instruments in the pursuit of national economic development. It is the contention of this paper that urban policy is a key tool in this regard.

### 2.3 The Role of Urban Policy in National Economic Development: An Analytical Framework

The relationship between urban management and wealth generation can be analysed in terms of:

1. **Cities as efficient (or otherwise) producers of goods and services.** Here the emphasis is on the cost side of the production equation. As well as transportation costs, relevant issues include the cost of capital and the cost of attracting and retaining skilled staff.

2. **Cities as creators of new markets.** As alluded to in the foregoing section, cost containment by itself is no longer sufficient to underpin the competitive advantage of nations. Value adding through product differentiation is vital. Increasingly, product differentiation is
dependent upon knowledge embodiment. Many of these factors impacting on rapid knowledge creation (and therefore market creation) are inextricably bound up with the quality of the urban setting.

3. Cities as marketable products in their own right. Given their role in expressing national and regional cultural values, cities have a strategic role in terms of national tourism development. This is particularly so in the context of rapid global growth in cultural terms.

The elements in this trilogy are not mutually exclusive. For example, if there is a greater propensity for technological innovation in particular forms and patterns of urban development, this can impact both on production cost efficiencies and the creation of pure economic rent through product differentiation.

Nor is the framework intended as a holistic model to guide urban management reform. Clearly such reform must also address social justice and ecological sustainability issues explicitly.

2.3.1 Urban Management and Production Costs

Urban structure and the pattern of settlement have a pervasive influence on all aspects of the production process. As obvious as this point may be, it is difficult to visualise because the impacts are incremental and cumulative. Occasionally a crisis will reveal the vulnerability (and, conversely, the efficiency) of urban production systems (e.g. the recent LA earthquake). But, more often, policy is driven by a kind of complacency where the efficiency of urban areas is taken for granted.

Yet there are clearly a large number of issues linking efficiency and productivity to urban form. Some of these are listed below:

- The cost of sprawl; the heavier infrastructure costs associated with ad hoc and excessively low density patterns of settlement may act as an unnecessary drain on the national capital pool.
- Scale economies in the labour market; EPAC (1991) discusses the efficiency advantages of having highly concentrated labour markets.
- Infrastructure investment and economic performance have been linked in a number of studies in Australia and overseas. Strong correlations between investment and labour productivity occur although the causality is questioned. The question is whether investment in infrastructure leads or follows productivity increase. In quantitative terms studies in the US and elsewhere have found an elasticity of productivity of 0.24 with the implication that a 1 per cent increase in core infrastructure investment will lead to a 0.24 per cent increase in private sector production (Aschauer, 1990).
- Australian analysis by Allen Consultancy Group (1993) found similar elasticity values. The conclusion is that a $1 billion road investment program would produce a gross recurrent annual benefit of $940 million or 0.26 per cent of GDP. Economic aspects of funding the investment would need to be deducted to reach a net result. A major reason for this result is the low rate of increase in road investment. Between 1967 to 1991, the value of Australia’s road stock has declined from about 17.5 per cent of GDP to just over 11 per cent. At the same time volumes of traffic have increased. The importance of road transport costs as a factor of production (i.e. 2 to 6 per cent of total input costs) mean that under investment in roads increases costs and thus reduces competitiveness and employment.
• Urban congestion is having significant effects, estimated at about $2 billion annually in both Sydney and Melbourne.

• Investment in rail infrastructure also has significant economic benefit and in many cases these benefits occur to non-rail users. Analysis of a Sydney CBD to Sydney Airport link shows a BCR of 1.64. Electrification of the Sydenham line in Melbourne showed a return of $7,420 million annually from an investment of $3,700 million. Double deck trains in Melbourne indicated a return of between $656 million to $1403 million for an outlay of $413 million (1989$). Best practice applied to Australia's rail system could produce savings of $2,200 million per annum with a multiplier effect of 2 (Allen et al., 1993, p.92).

• Regional case studies in Geelong and North West Melbourne, which involved extensive interviews with businesses, indicated that the cost of transport and congestion were critical factors affecting productivity (Stanley & Carter, 1985; Stanley, Carter, Read, Loder & Mahtorana, 1986).

2.3.2 Urban Management and Innovation/Creativity

Other things equal, one would expect that the propensity for technological innovation will be greater in more highly urbanised economies. Urban concentration supports specialisation and increasing depth of knowledge. These factors, in turn, provide a platform for new ideas.

In the new global economy, the advantages of urbanised communities are magnified as a result of the international tradability of specialised producer services; something made possible by advances in communication technology and relatively inexpensive air travel. Tertiary services in cities are no longer tied to a local manufacturing or agricultural hinterland. With the growing exportation of services like engineering consulting, management consulting, advertising, software and system development, financial brokering and specialised legal services, comes essentially cost free importation of embodied knowledge and skills which further enrich the producer service base.

But, it is becoming increasingly clear that particular patterns of settlement and urban structures are more conducive of innovation. A body of theory is beginning to develop around studies which have sought to explain the emergence of high value added, particularly high technology, industries in certain places (e.g. Silicon Valley, California; Boston's Highway 128; England's Cambridge Science Park; New York Biotechnology Industry). Examples of such literature include Malecki (1985), Hall (1990) and Blakely (1991).

In his review of the distribution of high-technology activities in the USA, Malecki (1984:266) observed that:

An urban environment of some threshold size seems most critical.... Generally, an urban milieu with excellent universities, abundant social and cultural activities, and a job market that allows individuals (and spouses) to switch jobs without relocating is the type of place where high-tech activities are found.

EPAC (1991:45) touch on this theme in their comment that international firms in particular prefer to locate in cities offering a wide range of amenities perceived to be required by executives and senior staff. Blakely (1991:232) extends such observations to conclude that quite radical shifts are required in planning and urban design practice:

... lifestyle and a creative atmosphere are the major locational choice factors. While lifestyle means different things to different people, there are several important coincidental
ingredients in communities ranging from Seattle to Los Angeles. These factors include relatively easy access to preferred recreational areas, good housing and school choices, cultural diversity and an active community social life. In essence, the community presents a milieu that is attractive for a lifelong experience and not merely for work. The new city will merge those things that modern life has split apart - work, play, shopping, education and leisure. In essence, the physical zoning of the past and current regulatory systems will be rethought to provide a more homogenous environment that allows functional rather than territorial discrimination. (However), the notion of planning a city as a social experience rather than to accommodate business activity is not well developed in the professional planning literature.

Hall (1990) completed a significant review of this emergent body of literature. As a central part of this review he posed the following question - “Why do innovative industries develop in certain places at certain times?” He concludes that traditional locational theories are limited in terms of their ability to answer this question:

- Neo-classical theories (von Thunen, 1966; Christaller, 1966; Losch, 1954 cited in Hall, 1990) and the Weberian theory of the locational triangle are limited, primarily because they are static and are far too narrow in terms of the factors they take into account. These models do not include consideration of the forces which lead to rise and decline of industries in time or the changing circumstances over time which lead to a change in location. These models do however, recognise the agglomerative processes which are still a critical factor in new growth industry location.

- Marxist theory is better at handling dynamics, particularly decline and contraction as a result of competition and profit. Theories which have derived from Marxist theories (i.e. product-profit cycle theory and industrial complex theory) are therefore better at explaining the new generation of economic activities but still do not offer great insights into the emergence of new areas of innovation (i.e. the choice of initial location).

Hall believes that more recent theories provide much better explanations. These include Perroux’ (1955, 1961) concept of growth poles and Aydalot’s (1986; Aydalot & Keeble, 1988) and Andersson’s (1985; Andersson & Stromquist, 1988) notions of the innovative or creative regional milieu. These theories place significant store on the value of knowledge, technological innovation, social and cultural environments conducive to novel ideas and products, well developed communication, transport and exchange systems, low barriers to the diffusion of innovation and high levels of synergy; not just between like-minded people but between disparate socio-economic cultural backgrounds - the archetype of an open society.

Hall’s (1990:20-21) conclusion is noteworthy:

The entrepreneurs responsible (for technological innovation) are new actors on the economic stage, typically starting infant industries which may rapidly grow into major corporations as mass production is accompanied by process innovation and routinisation.

They may be found everywhere, but they are much more likely to make their breakthroughs in certain kinds of regions. They may be old-established, cosmopolitan, liberal metropolitan cities, but are often emerging city regions which serve as entrepots between the older-developed world and a frontier beyond it. Their economies are expanding rapidly through imports of goods from the developed world, and they have a high rate of immigration, predominantly of young people, who are highly informal structures for the exchange of technical knowledge and conceptual ideas. Barriers to the diffusion of innovation are so low as to be almost non-existent; there is a constant search for the novel. Levels of synergy, not
only between like-minded individuals but also between quite disparate socio-economic-cultural groups, are very high; this is the archetype of an open society.

Willoughby (1993) in looking at the concept of *local milieu* of knowledge based industries based on an examination of the biotechnology industry in the US, included an analysis of the general locational influences of leading edge technology development. He states that:

Cities, or urban regions, have been recognised as the locus for leading edge technological development, with a number of prominent 'international' cities or regions receiving the greatest attention: for example, the San Francisco Bay Area, the greater Los Angeles region, Cambridge in Massachusetts, or Cambridge and the M4 Corridor in Britain (1993:2-3).

Willoughby goes on to suggest that although there is no generally accepted theory yet about the way in which high technology industries affect urban and regional form, and conversely, the influence of form on the prospects for the establishment of high technology industries, "a consensus does appear to have emerged that a shift from an industrial style economy (with its emphasis on the flow of resources and goods, and the accumulation of tangible assets), to an advanced - industrial style economy (with its emphasis on the flow of information and the accumulation of knowledge) will be accompanied by a shift away from the '19th century agro-industrial' city form (with its simple, centre-periphery land-use patterns) to something more complex and probably more decentralised." (Willoughby, 1993:3).

Saxenian (1989, cited in Willoughby 1993) has identified the following features which act as definitive parameters of high technology regions:

- A high calibre research university to ensure a science-base and supply of scientists and engineers.
- An ample supply of venture capital to fund new firms.
- Public investment devoted to research and the procurement of new technologies.
- A quality of life able to attract and retain footloose, highly qualified professionals.
- The absence of trade unions.
- An industrial park to house start-up firms.
- Adequate infrastructure to ensure efficient transportation and communication linkages

Innovative milieux depend on external stimuli being applied to firms and enterprises. Such firms must also have an internal culture that is conducive to novel ideas and approaches to operations (Brotchie, Batty, Newton & Hall, 1991:267).

Innovation is a complex process which presupposes collaboration between and linkage of complementary functions: fundamental research, applied research, development, preparation of prototypes, industrial investment, putting into production, marketing and adaptation of production to the market ... Of course it is not a matter of claiming that innovation takes place linearly from upstream to downstream, but of stressing that the process encompasses several aspects, several stages and thus multiple entry points. The factor triggering innovation may appear at any stage ...

This range of characteristics is most likely to be provided in urban centres where there is a multitude of social, economic and cultural factors evident. An open, communicative environment which is responsive to external stimuli is critical. However, this openness should not extend to such a degree that the socio-economic fabric of the milieu loses its coherence and the interdependence between its components is fractured. As Maillat (1991:274) concludes:

Innovation is thus conditioned by the characteristics of the milieu, that is the degrees of extroversion and of integration within the milieu. When the milieu succeeds in reconciling openness (acceptance of new ideas which trigger innovation) and closure (coherence of the socioeconomic fabric), it is able to stimulate and support the creativity of firms and, in
return, to be enriched by the innovation they achieve. If it is too open it shatters or disintegrates; if it is too integrated it becomes too inward-looking and loses its competitiveness.

An important thrust of this literature is that urban structure needs to be interpreted broadly for the purpose of developing innovative enhancement policies. As well as the traditional elements of livability (i.e. accessibility, clean environment) urban structure must embody the media and cultural institutions (i.e. the informal mechanisms for information exchange and ideas building) as key elements of productive infrastructure. The implications for policy then are that such innovative environments can be fostered by public action.

### 2.3.3 Urban Management and Cities as Products in their Own Right

Cultural tourism is a strategic global growth industry. It can be regarded as a classic example of a superior good (proportionately more is consumed as incomes rise). MacCannell (cited in Kelly and Dixon, 1991) notes that all tourists desire this deeper involvement with society and culture to some degree; it is a basic component of their motivation to travel. The growth of tourism of this nature provides cities and regions with an opportunity to promote themselves in a way which accessed this particular source, and to provide tourists with a wider range of experiences and opportunities.

There is considerable evidence that culturally-driven tourism is rapidly growing. Much of this evidence is quoted in Zeppel and Hall (1991):

- Visitor attendance at historic sites in the USA had a 25 per cent to 30 per cent growth per year during 1982 - 1984;
- Historic and cultural attractions accounted for 29 per cent of Canadian tourism spending in the early 1970s;
- The 1986 (Australian) International Visitor Survey showed that 29 per cent of overseas tourists visited museums and art galleries, 19 per cent visited outdoor folk museums or historic parks and 16 per cent attended live theatre and music performances;
- Cultural expeditions are the second most popular type of advertised special interest travel (after outdoor adventure activities).

Zeppel and Hall (1991) also refer to various surveys of the socio-economic profile of cultural tourists. Generally this group is referred to as up-scale, comprised largely of individuals who are professionals or managers with college or graduate school education and who earn higher than average incomes. Such a profile may be indicative of the long term growth potential of this tourism sector.

Domicelj (1992) also argues that “Cultural aspects of tourism are increasing. Reasons include higher level of education, growth in special interest tours, a change towards short breaks for cultural attractions and dissatisfaction with a bland international culture of the traditional tourism”.

International tourists currently contribute around $8 billion a year to Australia's foreign exchange earnings (Bureau of Tourism Research, 1994). Surveys of international visitors to Australia (Bureau of Tourism Research, 1991) show that of the 2.2 million visitors to Australia the majority visit major cities. In the case of Victoria for example, 31.6 per cent of Australia's total (698,286) visited the State, but only 4.8 per cent visited country areas. A feature of these visitors is the fact that the majority stay in Melbourne and take day trips to see Ballarat’s Sovereign Hill and Phillip Island’s penguins.
Thus the major cities are the prime location for accommodation and the variety and range of experiences available enhance the attractiveness of the stay and increases the propensity to spend, thus increasing exports earnings. In terms of international visitors, each visitor to Victoria spends $117 per visit night on average with a total expenditure of $1,400 million (VECCI, 1992). The multiplier effects of tourist expenditure are significant with VECCI estimating that for every $1 million of tourist expenditure there is another $2.8 million of income generated in the economy. In predominantly urban based activities, shopping is a large and growing part of the expenditure of visitors to Australia. In 1992-93 $1.5 billion was spent on shopping - thus this sector earned as much in foreign exchange as did crude oil, aluminum, or lead and zinc (Bureau of Tourism Research, 1994). Given the growth in tourism, this sector obviously has considerable, further potential.

As potential show cases for local, regional and national culture, cities can be managed to generate a competitive edge in the global tourism market. Indeed, this can have flow on effects in terms of footloose investment. National boundaries are becoming increasingly irrelevant in international trade relations with global trade treaties and the advent of cheap travel and almost instantaneous data transfer. This means that firm to firm and city to city relationships will be much more important in the formation of trading alliances and networks. In this context, the image, appeal and cultural signature of urban environments could have a telling effect on the capacity of regions to attract international investment.

2.3.4 Summing Up

This section has argued that urban management should figure in the national armory of economic development tools. Macro-economic levers, and sectorally directed reforms are no longer adequate by themselves, especially in a highly competitive international environment where embodied ideas and knowledge or intellectual capital is the key asset base.

Careful management of the cities and settlement patterns generally can yield multiple micro-economic efficiencies, a heightened capacity for technological innovation and improved penetration of the growing cultural tourism market.

So what should be the direction of change in the management of Australian cities to further strengthen the nation's international competitiveness? Before tackling this question, it is important to reflect on the context within which any policy changes might be contemplated. The next section reviews the forces shaping our cities and the current trends in development which are apparent. We also postulate a realistic future scenario given current policy settings.
3. POPULATION TRENDS

A knowledge of current trends and impending changes in population is of fundamental importance to an understanding of the dynamic of the Australian urban system. Too often in a consideration of urban development, population growth, composition and distribution are all seen as a static backdrop against which economic, political and social forces operate to shape cities. But population trends actively influence the development of the urban system, and the dynamic character of population provides both the impetus for change and the evolving outcome to challenge policy makers.

Changes in the size, distribution and composition of the population are largely outside the direct influence of government. Even setting immigration targets is becoming increasingly difficult through both the responsiveness of immigration and emigration to change in economic conditions, and through the increasing blurring of categories between long and short term migrants or visitors. However, the trend toward a larger, older, more ethnically diverse population which is undergoing substantial shifts in spatial distribution at national, regional and local levels, have significant policy ramifications. For example the distribution of population determined both political representation, and the level of financial resources allocated by the Commonwealth to State and Local Government. The composition of the population determines the needs of the population, many of which are met by public services and expenditure. And the nature of the population in terms of the skills they exhibit and the activities they pursue, contribute materially to the country's economic performance. Understanding the trends in, processes of and implications from population dynamics is an important first step in identifying opportunities and constraints to a more competitive Australia.

3.1 Population Growth

On 30 June 1993, Australia's population was estimated to be 17,661,500 (ABS, 1993a). National growth rates have fluctuated quite sharply in recent years (in 1988 reaching 1.78 per cent per annum, but by 1992-93 fell to 1.02 per cent) but the rate is still very high in relation to other developed countries. In the intercensal period 1986-91 there has been an average addition of around 250,000 per year to the population. The fluctuations in growth are largely a function of the level of immigrant intake (Figure 3.1). In 1988 there was a net gain of 172,800 from international migration, but in 1992-93 the net gain as down to 35,100. Although the Minister of Immigration sets the planned target for immigration each year, the year to year fluctuations correspond closely with shifts in the overall economic situation in Australia. This volatility makes population projections very difficult (a topic discussed later).

The other two major influences on population levels, fertility and mortality, impact on rates of natural increase which has been the largest component of population growth. These have been more stable than immigration but are also showing some significant long term trends. Fertility rates have declined as part of a Euro-American world trend toward smaller families. The total fertility rate in 1961 was 3.55 births per woman over the span of child-bearing age, but by 1976 had declined below replacement level (2.1) and in 1988 bottomed at 1.88. The post war baby boom however was a major interruption to the long term trend of fertility decline and the impact of this generation has remained very important, both through echoes in fertility rates (it has currently risen again to 1.89 (1992), and in changes in their consumption of goods and services (most particularly housing), as they have aged and increased in affluence. There has also been a significant improvement in mortality levels. During the last two decades, increases in life expectancy have added to population growth. Prominent among these changes has been a major improvement in the life expectancy of older adults, primarily due to reduced death from heart disease.
3.2 Population Composition

A number of the components of demography discussed above affect the composition of the population. Both fertility and mortality influence age structure while the nature of immigration obviously determined the ethnic composition of the population. These elements together with trends in household structure and the occupational characteristics of the workforce, are fundamental to gaining an understanding of the particular needs of a population, and also their potential workforce participation.

3.2.1 Immigration and Ethnicity

It is difficult to exaggerate the significance of international migration in the development of the Australian urban system. In 1991, 23 per cent of Australians were recorded as having been born overseas. Israel is the only other country to have this scale of immigration. A further 19.6 per cent of the Australian born population had at least one parent born overseas. Hence around 42 per cent of Australians are first or second generation immigrants.

The source of immigrants has varied greatly. In the post World War II period, there has been a series of migrant waves, each characterised by a different mix of birthplace groups, reflecting both changes in Australia’s immigration policy, and the way national and global economic and political situations have changed.
Table 3.1: Australia: Changing Birthplace Distribution, 1947-91

<table>
<thead>
<tr>
<th>Birthplace</th>
<th>1947 (000's)</th>
<th>1954 (000's)</th>
<th>1961 (000's)</th>
<th>1971 (000's)</th>
<th>1981 (000's)</th>
<th>1991 (000's)</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>502.0</td>
<td>626.0</td>
<td>718.3</td>
<td>1046.4</td>
<td>1086.8</td>
<td>1122.4</td>
</tr>
<tr>
<td>New Zealand</td>
<td>43.6</td>
<td>43.4</td>
<td>47.0</td>
<td>80.5</td>
<td>176.7</td>
<td>276.1</td>
</tr>
<tr>
<td>Italy</td>
<td>33.6</td>
<td>119.9</td>
<td>228.3</td>
<td>289.5</td>
<td>275.9</td>
<td>254.8</td>
</tr>
<tr>
<td>Yugoslavia b</td>
<td>5.9</td>
<td>22.9</td>
<td>49.8</td>
<td>129.8</td>
<td>149.3</td>
<td>161.1</td>
</tr>
<tr>
<td>Greece</td>
<td>12.3</td>
<td>25.9</td>
<td>77.3</td>
<td>160.2</td>
<td>146.6</td>
<td>136.3</td>
</tr>
<tr>
<td>Vietnam</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.7</td>
<td>41.1</td>
<td>122.3</td>
</tr>
<tr>
<td>Germany</td>
<td>14.6</td>
<td>65.4</td>
<td>109.3</td>
<td>110.8</td>
<td>110.8</td>
<td>114.9</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2.2</td>
<td>52.0</td>
<td>102.1</td>
<td>99.3</td>
<td>96.0</td>
<td>95.8</td>
</tr>
<tr>
<td>China a</td>
<td>6.4</td>
<td>10.3</td>
<td>14.5</td>
<td>17.6</td>
<td>25.9</td>
<td>78.8</td>
</tr>
<tr>
<td>Philippines</td>
<td>0.1</td>
<td>0.2</td>
<td>0.4</td>
<td>2.6</td>
<td>15.4</td>
<td>73.7</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1.8</td>
<td>2.3</td>
<td>5.8</td>
<td>14.9</td>
<td>31.6</td>
<td>72.6</td>
</tr>
<tr>
<td>Lebanon</td>
<td>1.9</td>
<td>3.9</td>
<td>7.3</td>
<td>24.2</td>
<td>49.6</td>
<td>69.0</td>
</tr>
<tr>
<td>Poland</td>
<td>6.6</td>
<td>36.6</td>
<td>60.0</td>
<td>59.7</td>
<td>59.4</td>
<td>68.9</td>
</tr>
<tr>
<td>India</td>
<td>6.2</td>
<td>12.0</td>
<td>14.2</td>
<td>29.2</td>
<td>41.7</td>
<td>61.6</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>0.8</td>
<td>1.6</td>
<td>3.5</td>
<td>5.6</td>
<td>15.7</td>
<td>59.0</td>
</tr>
<tr>
<td>Malta</td>
<td>3.2</td>
<td>20.0</td>
<td>39.3</td>
<td>53.7</td>
<td>57.0</td>
<td>53.8</td>
</tr>
<tr>
<td>Ireland</td>
<td>39.3</td>
<td>38.2</td>
<td>37.1</td>
<td>41.9</td>
<td>45.8</td>
<td>52.4</td>
</tr>
<tr>
<td>USA</td>
<td>6.2</td>
<td>8.3</td>
<td>10.8</td>
<td>30.0</td>
<td>32.6</td>
<td>50.6</td>
</tr>
<tr>
<td>South Africa</td>
<td>5.9</td>
<td>6.0</td>
<td>59.7</td>
<td>54.5</td>
<td>50.8</td>
<td>44.2</td>
</tr>
<tr>
<td>USSR b</td>
<td>6.8</td>
<td>60.1</td>
<td>7.9</td>
<td>12.7</td>
<td>27.0</td>
<td>49.4</td>
</tr>
<tr>
<td>Other Countries</td>
<td>42.9</td>
<td>11.1</td>
<td>186.1</td>
<td>313.7</td>
<td>468.0</td>
<td>738.7</td>
</tr>
<tr>
<td>Total Overseas Born</td>
<td>744.2</td>
<td>1286.5</td>
<td>1778.8</td>
<td>2579.3</td>
<td>3182.5</td>
<td>4125.2</td>
</tr>
<tr>
<td>Australian Born</td>
<td>6835.2</td>
<td>7700.1</td>
<td>8729.4</td>
<td>10176.3</td>
<td>11393.9</td>
<td>12725.2</td>
</tr>
<tr>
<td>Total Population</td>
<td>7579.4</td>
<td>8986.5</td>
<td>10508.2</td>
<td>12755.6</td>
<td>14576.3</td>
<td>16850.3</td>
</tr>
</tbody>
</table>

*Birthplace not stated has been distributed pro rata across all countries. b The data in this table refers to the period before the break-up of the former USSR and the former Yugoslavia. The names of the countries used are therefore correct for the period referred to.  a Includes Cambodia and Laos in 1971.  b Excludes Taiwan Province. e Includes Singapore in 1947. f Includes Syria in 1947.  g Includes Sri Lanka in 1947.  h Includes the Baltic States.

Source: ABS 1993c

The Anglo-Celtic origin has remained the largest source of migrants, although the relative proportion of intake has fallen from 78.7 per cent in 1947 to 18 per cent in 1991. However, the mix of other (mainly non-English speaking) birthplace groups in the incoming stream has undergone substantial shifts with different groups dominating successive waves over the post-war period. In the most recent flows ethnic Chinese from a range of Asian countries is the most significant single group.


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Australia</td>
<td>6,835,171</td>
<td>90.2</td>
<td>10,176,320</td>
<td>79.8</td>
<td>11,372,114</td>
</tr>
<tr>
<td>UK &amp; Eire</td>
<td>541,267</td>
<td>7.1</td>
<td>1,088,210</td>
<td>8.5</td>
<td>1,132,523</td>
</tr>
<tr>
<td>Southern Europe</td>
<td>52,312</td>
<td>0.7</td>
<td>539,634</td>
<td>4.2</td>
<td>518,784</td>
</tr>
<tr>
<td>Asia*</td>
<td>19,619</td>
<td>0.3</td>
<td>112,107</td>
<td>0.9</td>
<td>371,538</td>
</tr>
<tr>
<td>New Zealand</td>
<td>43,619</td>
<td>0.6</td>
<td>80,466</td>
<td>0.6</td>
<td>176,695</td>
</tr>
</tbody>
</table>

* Includes Middle East.

Source: Price 1975; ABS 1981 and 1991 Australian Censuses
An important issue related to the future of immigration is the growth in non-permanent movements to Australia. One dimension of this is the exponential rise in visitors (the number of tourists trebled to 3 million in the last decade). There appears to be a new form of international movement developing whereby non-permanent movements of varying duration becomes of greater significance and in some respect meets the needs previously met by immigration. The future is likely to see much more international mobility, not only among the overseas born, but by Australian-born working overseas. There are opportunities in this process to develop business and trade linkages with the origin regions from which these visitors/residents come, and this could be particularly significant in building stronger ties with some of the Pacific Rim countries. However, it does mean that the one element of population policy which could be controlled is now becoming more difficult.

3.2.2 Household and Family Structure

Households and families are the fundamental units into which Australians group themselves. They are the basic unit of consumption of many resources so an understanding of changes in household configuration is important to planning the efficient and equitable provision of a wide rate of service. Central to the nature of household structure is the consumption of housing.

Profound changes are occurring in household and family structure. In particular households are smaller, and the growth in household formation far outstrips the rate of population growth. Table 3.3 shows that average household size has fallen from 3.55 persons per household in 1961 to 2.80 in 1991. Apart from lower fertility, and hence fewer children, the lowering of average household size can be attributed to a growing diversity of household type. In particular there has been increasing proportion of single parent families and lone person households.

Table 3.3: Australia: Households and Population, 1961-91

<table>
<thead>
<tr>
<th>Census</th>
<th>Households&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Growth (%)</th>
<th>Population&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Growth (%)</th>
<th>Persons per Household&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>2,782.0</td>
<td></td>
<td>10,508.2</td>
<td></td>
<td>3.55</td>
</tr>
<tr>
<td>1966</td>
<td>3,155.3</td>
<td>2.55</td>
<td>11,599.5</td>
<td>2.00</td>
<td>3.47</td>
</tr>
<tr>
<td>1971</td>
<td>3,670.6</td>
<td>3.07</td>
<td>12,755.6</td>
<td>1.92</td>
<td>3.31</td>
</tr>
<tr>
<td>1976</td>
<td>4,140.5</td>
<td>2.44</td>
<td>13,548.4</td>
<td>1.21</td>
<td>3.12</td>
</tr>
<tr>
<td>1981</td>
<td>4,668.9</td>
<td>2.43</td>
<td>14,576.3</td>
<td>1.47</td>
<td>2.98</td>
</tr>
<tr>
<td>1986</td>
<td>5,187.4</td>
<td>2.13</td>
<td>15,602.2</td>
<td>1.37</td>
<td>2.88</td>
</tr>
<tr>
<td>1991</td>
<td>5,750.1</td>
<td>2.08</td>
<td>16,850.3</td>
<td>1.55</td>
<td>2.80</td>
</tr>
</tbody>
</table>

Note: Growth rates are compound. All figures are enumerated.
<sup>a</sup>In addition there were 77,902 households (158,257 persons) in caravans in caravan parks in 1986 and 85,121 households (164,051 persons) in 1991.
<sup>b</sup>Includes full blood Aborigines since 1966.
<sup>c</sup>Excludes persons in non-private dwellings.

Source: Indicative Planning Council for the Housing Industry 1993a

These trends have important implications for housing needs in Australian cities. Smaller households may be less well served by the current housing stock than have been larger groups. However it is also important not to lose sight of the fact that families with children (whether or not dependent) still make up the great majority of households, and their housing needs are fundamental to the way cities have, and continue to develop. Because young people are staying home longer, or are moving in and out of the parental home, a static view of household structure may give a misleading picture of housing use and actual housing demand. If we enumerated all households with offspring rather than just families with dependants, 70 per cent of families are in this position (see Table 3.4).
Table 3.4: Australia: Distribution of Population Living in Private Dwellings Between Different Household Types, 1986 and 1991

<table>
<thead>
<tr>
<th>Household Type</th>
<th>No. (000’s)</th>
<th>Per cent</th>
<th>No. (000’s)</th>
<th>Per cent</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two Parent Families</td>
<td>9,339.4</td>
<td>62.8</td>
<td>9,245.8</td>
<td>59.0</td>
<td>-1.0</td>
</tr>
<tr>
<td>One Parent Families</td>
<td>945.3</td>
<td>6.3</td>
<td>1,488.8</td>
<td>9.5</td>
<td>+57.5</td>
</tr>
<tr>
<td>Couple Families</td>
<td>2,507.5</td>
<td>16.9</td>
<td>2,717.5</td>
<td>17.3</td>
<td>+8.4</td>
</tr>
<tr>
<td>Other Families *</td>
<td>585.9</td>
<td>3.9</td>
<td>527.1</td>
<td>3.4</td>
<td>-10.0</td>
</tr>
<tr>
<td>Group Households</td>
<td>511.4</td>
<td>3.4</td>
<td>571.5</td>
<td>3.6</td>
<td>+11.8</td>
</tr>
<tr>
<td>Lone Person Households</td>
<td>988.0</td>
<td>6.6</td>
<td>1,130.3</td>
<td>7.2</td>
<td>+14.4</td>
</tr>
<tr>
<td>Total</td>
<td>14,877.5</td>
<td>100.0</td>
<td>15,681.0</td>
<td>100.0</td>
<td>+5.4</td>
</tr>
</tbody>
</table>

* In 1991 includes 235,549 persons in ‘non-classifiable’ households.
Source: ABS 1986 and 1991 Censuses, 1991 data preliminary only

A further implication of the rising incidence of single parent families is that this group have substantially lower incomes (the median income of single parents in mortgaged dwellings is only half that of couples with children, while in rented dwellings it is only 44.5 per cent of that of couples with dependent children). The increasing proportion of children living in single parent families has resulted in more children living in poverty.

3.2.3 Changing Age Structure

The age structure of the population is of significance in the determination of needs/demand for particular goods and services. Stage in the life cycle influences the nature and level of expenditure, and thus aggregate national demand for products and services, both public and private.

A major feature of demographic analysis is the progressive ageing of the population. In 1971, 8.3 per cent of Australians were aged 65 years and over; by 1991 this had increased to 11.3 per cent. In the first half of the 1980’s the fastest growth rates were in the ‘older’ aged cohort (75-84 years) and this trend will continue such that there will be a substantial increase in the very old. Later however (2011-31) there will be a big increase in ‘young’ aged due to the baby boom generation reaching old age (see Table 3.5).

Table 3.5: Australia: Actual and Projected Change in the Older Population 1981-91, 2001-31

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>55-64</td>
<td>1326.2</td>
<td>1435.4</td>
<td>1419.8</td>
<td>1833.3</td>
<td>2615.6</td>
<td>3294.7</td>
<td>+8.2 +29.1 +25.9</td>
</tr>
<tr>
<td>65-74</td>
<td>919.1</td>
<td>1029.4</td>
<td>1153.0</td>
<td>1306.0</td>
<td>1644.5</td>
<td>2735.5</td>
<td>+11.1 +13.3 +66.3</td>
</tr>
<tr>
<td>75-84</td>
<td>409.0</td>
<td>499.0</td>
<td>602.0</td>
<td>836.2</td>
<td>928.0</td>
<td>1731.0</td>
<td>+22.0 +38.9 +86.5</td>
</tr>
<tr>
<td>85+</td>
<td>101.2</td>
<td>126.7</td>
<td>152.1</td>
<td>250.5</td>
<td>356.9</td>
<td>579.8</td>
<td>+25.2 +64.7 +62.5</td>
</tr>
<tr>
<td>Total</td>
<td>1429.3</td>
<td>1646.7</td>
<td>1907.2</td>
<td>2392.7</td>
<td>2929.4</td>
<td>5045.9</td>
<td>+15.2 +25.5 +72.3</td>
</tr>
</tbody>
</table>

* Census Count Population
The increase is an aged dependent population (compared to the economically active group, 15-64 years) is forecast to increase dramatically (currently 17.1 per cent, but by 2031, will be over 30 per cent). There is a significant shift occurring in the nature of the dependent population with the aged dependants exceeding juveniles.

The inevitable ageing of the population has many implications for government policy. In particular, per capita government social expenditure in the 75+ age groups is more than three times those in the under 60 aged groups and this will rise.
A further issue is where that aged population will be located and how institutional arrangements can be put in place to ensure appropriate services are provided. Much of the ageing is likely to be in situ, in the middle suburbs of the large metropolitan areas. These areas have not previously hosted large proportions of aged, and thus new services provision will be required.

3.3 Population Distribution

There are considerable variations in patterns, trends and levels of population growth between different parts of Australia. These are planning issues. Such differences stem from some of the dynamics already discussed; immigration and natural increase in particular. The latter although not uniform between areas, is generally regarded as a constant. Immigration however tends to concentrate on a limited number of locations. But it is internal migration which is responsible for the substantial shifts which are occurring in the subnational population.

3.3.1 Population Distribution by State

At the broadest subnational level, changing population by state has been an obvious component of population change in Australia. In terms of shares of population, there has been a consistent increase in Queensland (from 14.5 per cent of the national population in 1961 to 17.1 per cent in 1991), Western Australia (7.0 to 9.5 per cent) and the two territories. All other states shares have progressively shrunk. In the 1988-93 period Queensland's annual growth rate has been double that of the national average, while those for Victoria, New South Wales, Tasmania and South Australia have consistently been below the national average. Victoria has suffered a very substantial drop in growth in 1993, down to 0.3 per cent, the lowest of all states and territories, and the rate of growth in both Western Australia and Northern Territory have slowed. Queensland thus has increasingly become the focus. The recent boom in migration to Queensland is the product of both structural and cyclical changes to the economies of each state. As some of the cyclical factors in particular improve from the very sharp shocks experienced in the early 1990s by Victoria and South Australia in particular this movement should be slow.


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>37.3</td>
<td>36.2</td>
<td>35.1</td>
<td>34.1</td>
<td>5,898.7</td>
</tr>
<tr>
<td>Vic.</td>
<td>27.9</td>
<td>27.6</td>
<td>26.4</td>
<td>25.6</td>
<td>4,420.4</td>
</tr>
<tr>
<td>Qld.</td>
<td>14.5</td>
<td>14.2</td>
<td>15.7</td>
<td>17.1</td>
<td>2,961.0</td>
</tr>
<tr>
<td>SA</td>
<td>9.2</td>
<td>9.2</td>
<td>8.8</td>
<td>8.4</td>
<td>1,446.3</td>
</tr>
<tr>
<td>WA</td>
<td>7.0</td>
<td>8.1</td>
<td>8.7</td>
<td>9.5</td>
<td>1,636.1</td>
</tr>
<tr>
<td>Tas.</td>
<td>3.3</td>
<td>3.0</td>
<td>2.9</td>
<td>2.7</td>
<td>466.8</td>
</tr>
<tr>
<td>NT</td>
<td>0.3</td>
<td>0.7</td>
<td>0.8</td>
<td>1.0</td>
<td>165.5</td>
</tr>
<tr>
<td>ACT</td>
<td>0.6</td>
<td>1.2</td>
<td>1.5</td>
<td>1.7</td>
<td>289.3</td>
</tr>
<tr>
<td>Australia</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>..</td>
</tr>
</tbody>
</table>

Source: ABS, 1993c
3.3.2 Population Migration

Queensland’s status as the fastest growing state is based on its dominance of net interstate migration flows (see Figure 3.4). In the 1988-93 period, interstate migration accounted for a net gain of approximately 250,000 - half of the growth experienced by Queensland in that period.

Most of those interstate migrants originate in either New South Wales, or Victoria. Both have undergone a net migration loss equivalent to more than their population growth in the early 1990s.

![Figure 3.4: Net Estimated Interstate Migration, States and Territories, 1990/1-1992/3](source)

At the same time New South Wales and Victoria hosted more than two thirds of all incoming immigrants in the 1988-93 period. New South Wales captured 42 per cent with Victoria taking an additional 26 per cent. Queensland on the other hand has not proved attractive to a large immigrant community, despite having the fastest expanding economy.

3.3.3 Urban Concentration

Despite the rural images often used to portray Australia, the reality has always been a high degree of urbanisation. The harsh physical landscape, the history and culture of white settlement, and the colonial then federal form of administration means that development has focused on a few large cities. Over 60 per cent of Australia’s population is currently concentrated in metropolitan areas (those where population is over 100,000), and 40 per cent are located in the two major cities, Sydney and Melbourne, both of which have populations in excess of 3 million.

The trend toward progressive metropolitan concentration has occurred over a long period of time - although now has stabilised.
Figure 3.5: Australia: Changing Distribution of Population Between Metropolitan, other Urban and Rural Sectors, 1921-91

Table 3.7: Estimated Resident Population in Capital Cities and other Major Cities, 30 June 1986 to 1992 (in Thousands)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney*</td>
<td>3,741.6</td>
<td>3,528.5</td>
<td>3,591.0</td>
<td>3,622.9</td>
<td>3,643.7</td>
<td>3,672.9</td>
<td>3,699.8</td>
<td>+1.07</td>
</tr>
<tr>
<td>Melbourne*</td>
<td>2,967.9</td>
<td>3,004.5</td>
<td>3,043.6</td>
<td>3,086.6</td>
<td>3,126.9</td>
<td>3,156.7</td>
<td>3,177.9</td>
<td>+1.15</td>
</tr>
<tr>
<td>Brisbane*</td>
<td>1,217.3</td>
<td>1,238.4</td>
<td>1,264.5</td>
<td>1,300.2</td>
<td>1,330.9</td>
<td>1,358.0</td>
<td>1,385.5</td>
<td>+2.18</td>
</tr>
<tr>
<td>Adelaide</td>
<td>1,003.5</td>
<td>1,011.9</td>
<td>1,021.1</td>
<td>1,033.5</td>
<td>1,044.6</td>
<td>1,057.2</td>
<td>1,065.3</td>
<td>+1.00</td>
</tr>
<tr>
<td>Perth</td>
<td>1,050.1</td>
<td>1,079.6</td>
<td>1,110.5</td>
<td>1,147.4</td>
<td>1,175.4</td>
<td>1,188.0</td>
<td>1,205.3</td>
<td>+2.32</td>
</tr>
<tr>
<td>Hobart</td>
<td>179.0</td>
<td>1800.2</td>
<td>181.0</td>
<td>182.6</td>
<td>185.3</td>
<td>187.0</td>
<td>188.3</td>
<td>+0.85</td>
</tr>
<tr>
<td>Darwin*</td>
<td>75.4</td>
<td>77.0</td>
<td>75.9</td>
<td>76.0</td>
<td>76.5</td>
<td>76.7</td>
<td>77.6</td>
<td>+0.48</td>
</tr>
<tr>
<td>Canberra*</td>
<td>280.9</td>
<td>287.9</td>
<td>295.0</td>
<td>299.8</td>
<td>305.8</td>
<td>313.4</td>
<td>319.5</td>
<td>+2.17</td>
</tr>
<tr>
<td>Newcastle*</td>
<td>417.0</td>
<td>422.2</td>
<td>427.0</td>
<td>432.9</td>
<td>439.0</td>
<td>444.9</td>
<td>450.7</td>
<td>+1.30</td>
</tr>
<tr>
<td>Wollongong*</td>
<td>233.0</td>
<td>235.9</td>
<td>238.4</td>
<td>240.6</td>
<td>242.8</td>
<td>244.9</td>
<td>247.4</td>
<td>+1.00</td>
</tr>
<tr>
<td>Gold Coast*</td>
<td>215.7</td>
<td>225.6</td>
<td>242.3</td>
<td>261.0</td>
<td>271.7</td>
<td>279.6</td>
<td>290.0</td>
<td>+5.06</td>
</tr>
<tr>
<td>Geelong*</td>
<td>146.1</td>
<td>1477.2</td>
<td>148.3</td>
<td>149.1</td>
<td>151.0</td>
<td>151.6</td>
<td>151.5</td>
<td>+0.61</td>
</tr>
<tr>
<td>Townsville*</td>
<td>106.9</td>
<td>109.0</td>
<td>110.3</td>
<td>112.6</td>
<td>114.7</td>
<td>116.2</td>
<td>118.4</td>
<td>+1.72</td>
</tr>
<tr>
<td>Sunshine*</td>
<td>87.3</td>
<td>91.5</td>
<td>97.6</td>
<td>106.8</td>
<td>112.8</td>
<td>119.3</td>
<td>125.4</td>
<td>+6.22</td>
</tr>
</tbody>
</table>

* Capital City Statistical Division
+ Statistical District of 100,000 or more
* Includes Queanbeyan (in NSW)
* Includes part of Tweed Shire (in NSW)
* Preliminary data only

Source: ABS 1993b
A much heralded population ‘turnaround’ which saw non-metropolitan areas increase their share of population in the 1970’s has provided hope that at least some areas outside the biggest centres will participate in growth and development (see Table 3.8). The effect in some of these non-metropolitan centres has been greater diversity in the population and a decreasing reliance of non-metropolitan communities on traditional rural primary industries. However the counter-urbanisation trend has focused strongly on a relatively few locations (particularly the rapidly growing coastal amenity regions of New South Wales and Queensland, and the ex-urban periphery of the major metropolitan areas (Maher and Stimson, forthcoming). There is little evidence of a widespread regional renaissance.

Table 3.8  Australia: Population Growth by Section of State, 1954-91

<table>
<thead>
<tr>
<th>Census Year</th>
<th>Metropolitan No.</th>
<th>Non-Metropolitan No.</th>
<th>Other Urban No.</th>
<th>Rural No.</th>
<th>Australia No.</th>
<th>%</th>
<th>%</th>
<th>%</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1954</td>
<td>4,813,121</td>
<td>4,173,409</td>
<td>2,214,280</td>
<td>1,959,129</td>
<td>8,966,530</td>
<td>53.6</td>
<td>46.4</td>
<td>24.6</td>
<td>21.8</td>
</tr>
<tr>
<td>1961</td>
<td>5,885,121</td>
<td>4,623,065</td>
<td>2,696,147</td>
<td>2,026,918</td>
<td>10,508,186</td>
<td>56.0</td>
<td>44.0</td>
<td>25.7</td>
<td>18.3</td>
</tr>
<tr>
<td>1966</td>
<td>6,730,663</td>
<td>4,871,231</td>
<td>2,887,299</td>
<td>2,198,952</td>
<td>11,601,894</td>
<td>58.0</td>
<td>42.0</td>
<td>24.9</td>
<td>17.1</td>
</tr>
<tr>
<td>1971</td>
<td>7,695,194</td>
<td>5,049,444</td>
<td>3,186,617</td>
<td>2,564,827</td>
<td>12,744,638</td>
<td>60.4</td>
<td>39.6</td>
<td>25.0</td>
<td>14.6</td>
</tr>
<tr>
<td>1976</td>
<td>8,093,138</td>
<td>5,454,820</td>
<td>3,522,686</td>
<td>2,921,952</td>
<td>13,347,698</td>
<td>59.7</td>
<td>40.3</td>
<td>26.1</td>
<td>14.2</td>
</tr>
<tr>
<td>1981</td>
<td>9,203,318</td>
<td>5,564,012</td>
<td>3,287,438</td>
<td>2,603,600</td>
<td>14,376,330</td>
<td>63.2</td>
<td>36.8</td>
<td>22.6</td>
<td>14.2</td>
</tr>
<tr>
<td>1986</td>
<td>9,817,933</td>
<td>5,765,875</td>
<td>3,499,012</td>
<td>2,566,865</td>
<td>15,583,808</td>
<td>63.0</td>
<td>37.0</td>
<td>22.5</td>
<td>14.5</td>
</tr>
<tr>
<td>1991</td>
<td>10,563,364</td>
<td>6,278,205</td>
<td>3,776,530</td>
<td>2,501,655</td>
<td>16,841,569</td>
<td>62.7</td>
<td>37.3</td>
<td>22.4</td>
<td>14.9</td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1976</td>
<td>8,654,328</td>
<td>4,900,703</td>
<td>2,997,043</td>
<td>1,888,602</td>
<td>13,555,031</td>
<td>63.9</td>
<td>36.1</td>
<td>22.1</td>
<td>13.9</td>
</tr>
<tr>
<td>1981</td>
<td>9,202,318</td>
<td>5,564,012</td>
<td>3,287,438</td>
<td>2,603,600</td>
<td>14,376,330</td>
<td>63.2</td>
<td>36.8</td>
<td>22.6</td>
<td>14.2</td>
</tr>
<tr>
<td>1986</td>
<td>9,817,933</td>
<td>5,784,223</td>
<td>3,517,560</td>
<td>2,566,865</td>
<td>15,602,156</td>
<td>62.9</td>
<td>37.1</td>
<td>22.5</td>
<td>14.5</td>
</tr>
</tbody>
</table>

Per cent Change

<table>
<thead>
<tr>
<th></th>
<th>Metropolitan %</th>
<th>Non-Metropolitan %</th>
<th>Other Urban %</th>
<th>Rural %</th>
<th>Australia %</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 1934-61</td>
<td>22.3</td>
<td>10.8</td>
<td>21.8</td>
<td>-1.6</td>
<td>16.9</td>
</tr>
<tr>
<td>1961-66</td>
<td>14.4</td>
<td>5.4</td>
<td>7.1</td>
<td>3.0</td>
<td>10.4</td>
</tr>
<tr>
<td>1966-71</td>
<td>14.3</td>
<td>3.7</td>
<td>10.3</td>
<td>-6.0</td>
<td>9.8</td>
</tr>
<tr>
<td>1971-76</td>
<td>5.2</td>
<td>8.0</td>
<td>10.9</td>
<td>3.1</td>
<td>6.3</td>
</tr>
<tr>
<td>1976-81</td>
<td>5.0</td>
<td>11.5</td>
<td>12.9</td>
<td>9.0</td>
<td>7.6</td>
</tr>
<tr>
<td>1981-86</td>
<td>15.6</td>
<td>-5.2</td>
<td>-12.2</td>
<td>8.2</td>
<td>6.9</td>
</tr>
<tr>
<td>1986-91</td>
<td>7.6</td>
<td>9.9</td>
<td>7.9</td>
<td>10.4</td>
<td>8.1</td>
</tr>
<tr>
<td>B 1976-81</td>
<td>6.3</td>
<td>9.5</td>
<td>9.7</td>
<td>9.3</td>
<td>7.5</td>
</tr>
<tr>
<td>1981-86</td>
<td>6.7</td>
<td>7.8</td>
<td>6.4</td>
<td>9.8</td>
<td>7.1</td>
</tr>
<tr>
<td>1986-91</td>
<td>6.6</td>
<td>10.4</td>
<td>10.3</td>
<td>10.8</td>
<td>8.0</td>
</tr>
</tbody>
</table>

Note:  A. Each section of state as defined in the report of each census.
       B. Based on the section of state as defined in the report of the 1981 census. Non-metropolitan includes migratory population.


To a large degree the urban concentration of population in the largest centres is maintained by immigration. In the first two post-war decades, both Sydney and Melbourne had small net gains from internal migration, although this was, insignificant when compared to the impact of immigration. During the 1976-86 period however, both cities have undergone a substantial net internal migration loss. In Sydney between 1986 and 1991 there were 142,000 outmovers to elsewhere in Australia. However, international migration remained an important source of growth particularly in Sydney.

<table>
<thead>
<tr>
<th>Year</th>
<th>City</th>
<th>Natural Increase</th>
<th>Total</th>
<th>International</th>
<th>Internal</th>
<th>Total Population Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sydney</td>
<td>379</td>
<td>457</td>
<td>441</td>
<td>17</td>
<td>836</td>
</tr>
<tr>
<td></td>
<td></td>
<td>45.3</td>
<td>54.7</td>
<td>52.7</td>
<td>2.0</td>
<td>100</td>
</tr>
<tr>
<td>1947-66</td>
<td>Melbourne</td>
<td>366</td>
<td>491</td>
<td>485</td>
<td>6</td>
<td>857</td>
</tr>
<tr>
<td></td>
<td></td>
<td>42.7</td>
<td>57.3</td>
<td>56.6</td>
<td>0.7</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Sydney</td>
<td>237</td>
<td>92</td>
<td>184</td>
<td>-92</td>
<td>329</td>
</tr>
<tr>
<td></td>
<td></td>
<td>72.0</td>
<td>28.0</td>
<td>55.9</td>
<td>-28.0</td>
<td>100</td>
</tr>
<tr>
<td>1976-86</td>
<td>Melbourne</td>
<td>205</td>
<td>3</td>
<td>91</td>
<td>-88</td>
<td>208</td>
</tr>
<tr>
<td></td>
<td></td>
<td>98.6</td>
<td>1.4</td>
<td>43.8</td>
<td>-42.3</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Sydney</td>
<td>160</td>
<td>16</td>
<td>158</td>
<td>-142</td>
<td>174</td>
</tr>
<tr>
<td></td>
<td></td>
<td>92.0</td>
<td>9.2</td>
<td>90.8</td>
<td>-81.6</td>
<td>100</td>
</tr>
<tr>
<td>1986-91</td>
<td>Melbourne</td>
<td>137</td>
<td>53</td>
<td>105</td>
<td>-52</td>
<td>190</td>
</tr>
<tr>
<td></td>
<td></td>
<td>72.1</td>
<td>27.9</td>
<td>55.3</td>
<td>-27.4</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Hugo 1989a:68; ABS 1990c:10; Author’s estimates for 1986-91 using ABS Census and Vital Statistics Data

Thus the large scale of international migration into Australia has tended to mask a substantial metropolitan to non-metropolitan deconcentration of the Australia-born. Not only have the overseas-born been more concentrated in large cities but they are being an increasing component.

The areas where there has been net in-migration to non-metropolitan areas are concentrated:

- along the eastern coasts, particularly New South Wales, South East Queensland and North Queensland
- in an arc around the major metropolitan areas, forming what Stimson and O’Connor (1993) have dubbed mega-cities
- in some specialised areas where leisure and recreation are significant (snowfields, Murray River)
- along the Hume Highway linking Melbourne and Sydney
- coastal areas north and south of Perth
- some sparsely settled but resource rich areas

The limited areas where growth is currently occurring demonstrates how difficult it will be to revive regional Australia in any large scale manner, as is envisaged by the Kelty Committee (1993).
3.3.4 Intra-Metropolitan Distribution

While concentration is the hallmark of Australia’s population at a metropolitan level, deconcentration is the characteristic within the metropolitan boundaries (see Figures 3.6 and 3.7).

Population densities within Australian cities are among the lowest of any in the world, a product of the dominance of free standing single family dwelling units in the housing stock. The predominant form of growth of the major urban areas has been by outward extension, with newly built suburbs drawing population from locations further in a series of linked moves. The pattern of net intra-urban residential moves which occurred in Melbourne between 1986 and 1991 is illustrative of the trends in all areas. Extensive new construction to the south east, north and west of the city have drawn residents from the SLA’s relatively close to the fringe. They in turn have been replenished either by migrants from further in, or by immigrant arrivals.

However, there have been some significant changes over time. Inner urban areas, which have experienced declines in population over the past few decades have now stabilised somewhat, and some have even increased their resident population. On the other hand, the middle suburbs developed in the early post-war period are now experiencing substantial losses as a result of the original families maturing to the child launching stage where adult children move out to set up separate households, while the parents on the whole remain. This has implications both for the location of the ageing population mentioned above, and for the nature of housing consumption (small households relatively large houses).

3.4 Future Population Trends

Projecting future population levels and distribution is a highly subjective exercise. We have already pointed out the volatile nature of some elements of population change, particularly that of immigration. Thus population projection can only be made on the basis of what population of the future will be like if certain assumptions hold. As social and economic conditions change these assumptions continually need revision.

The difficulty of projecting population extends in two dimension. Longer term projections are inevitably less reliable than are short term projection because the conditions upon which the assumptions are based are more likely to alter in an unpredictable manner. Likewise projections for small areas are inherently less reliable than for larger units because of the greater number of unknowns particularly relating to population shifts.

ABS produce projections of population and these form the basis of most other household formation and new housing demand. The most current ABS projections unfortunately are based on the 1986 census figures and are now somewhat out of date. A new set based on the 1991 Census are currently being prepared but will not be available until later this year.

The current national projections (ABS, 1988) estimate an increase in population of between 19.3 and 20 million by the year 2000, between 21.8 and 24.7 million and 2021 and between 22.5 and 26.8 million in 2031 (see Table 3.10). The ranges are derived from different assumptions regarding the level of immigration.
Figure 3.6: Sydney Statistical Division: Percentage Population Change, between 1986 and 1991

Source: ABS 1986 and 1991 Censuses
Figure 3.7: Melbourne Statistical Division: Percentage Population Change, between 1986 and 1991

Source: ABS 1986 and 1991 Censuses
Table 3.10: Population of Australia, 1991 to 2031, Selected Population Scenarios

<table>
<thead>
<tr>
<th>Net Migration Gain (a)</th>
<th>1991</th>
<th>2001</th>
<th>2011 (Million)</th>
<th>2021</th>
<th>2031</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero</td>
<td>17.1</td>
<td>18.2</td>
<td>18.9</td>
<td>19.3</td>
<td>19.3</td>
</tr>
<tr>
<td>50,000</td>
<td>17.2</td>
<td>18.9</td>
<td>20.3</td>
<td>21.4</td>
<td>22.2</td>
</tr>
<tr>
<td>100,000</td>
<td>17.3</td>
<td>19.5</td>
<td>21.5</td>
<td>23.2</td>
<td>24.7</td>
</tr>
<tr>
<td>125,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(A/B)</td>
<td>17.3</td>
<td>19.8</td>
<td>22.1</td>
<td>24.2</td>
<td>26.0</td>
</tr>
<tr>
<td>(C)</td>
<td>17.3</td>
<td>19.7</td>
<td>21.8</td>
<td>23.7</td>
<td>25.2</td>
</tr>
<tr>
<td>(P)</td>
<td>17.3</td>
<td>20.1</td>
<td>22.7</td>
<td>25.4</td>
<td>27.9</td>
</tr>
<tr>
<td>(M)</td>
<td>17.3</td>
<td>19.7</td>
<td>21.7</td>
<td>23.5</td>
<td>24.9</td>
</tr>
<tr>
<td>150,000</td>
<td>17.5</td>
<td>20.5</td>
<td>23.1</td>
<td>25.6</td>
<td>27.9</td>
</tr>
<tr>
<td>200,000</td>
<td>17.7</td>
<td>21.2</td>
<td>24.5</td>
<td>27.7</td>
<td>30.7</td>
</tr>
</tbody>
</table>

(a) Population issues Committee projections for all series excepting 125000 net migration gain. Four alternative projections undertaken by the Australian Bureau of Statistics have been used for the 125000 net migration gain scenario. They are:

- 125000(A/B) Mortality 1986-88 mortality rates will decline to 1996 according to short-term rates of mortality decline; from 1997 rates will decline according to the long-term rates of mortality decline. Fertility - Total Fertility Rate will decline linearly from 1984 in 1989 to 1780 in 1996 and remain constant thereafter.
- 125000(C) Mortality as above Fertility - Total Fertility rate will decline linearly from 1984 in 1989 to 1660 and remain constant thereafter.
- 125000(P) Mortality as above Fertility - Total Fertility rate will increase linearly from 1984 in 1989 to 2011 in 2005 and remain constant thereafter.
- 125000(M) Mortality - no further improvements Fertility - as per 125000(A/B)

All other migration scenarios assume fertility and mortality levels as indicated for 125000(A/B) projection scenario.

Source: NPC 1991:37

Australian Bureau of Statistics also carried out projections for each states and territories. These projections assume a continuation of the late 1980s trends with respect to interstate and overseas migration.

Table 3.11: Total Number and Percentage Distribution of Projected Population by State and Territory

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>5771.9</td>
<td>7202.2</td>
<td>7352.2</td>
<td>6519.6</td>
<td>8225.1</td>
<td>8538.8</td>
<td>7708.4</td>
</tr>
<tr>
<td>Vic.</td>
<td>4321.5</td>
<td>5414.3</td>
<td>5501.7</td>
<td>4932.5</td>
<td>6179.6</td>
<td>6378.1</td>
<td>5863.0</td>
</tr>
<tr>
<td>Qld.</td>
<td>2834.1</td>
<td>4172.4</td>
<td>4064.4</td>
<td>3531.5</td>
<td>5182.3</td>
<td>4912.0</td>
<td>4660.6</td>
</tr>
<tr>
<td>SA</td>
<td>1424.6</td>
<td>1678.8</td>
<td>1658.9</td>
<td>1562.9</td>
<td>1817.2</td>
<td>1768.9</td>
<td>1676.6</td>
</tr>
<tr>
<td>WA</td>
<td>1594.7</td>
<td>2509.0</td>
<td>2484.8</td>
<td>2040.2</td>
<td>3308.1</td>
<td>3163.0</td>
<td>2888.8</td>
</tr>
<tr>
<td>Tas.</td>
<td>451.1</td>
<td>504.2</td>
<td>484.3</td>
<td>479.9</td>
<td>508.5</td>
<td>461.6</td>
<td>462.1</td>
</tr>
<tr>
<td>NT</td>
<td>156.3</td>
<td>200.5</td>
<td>227.7</td>
<td>187.2</td>
<td>242.9</td>
<td>313.0</td>
<td>312.9</td>
</tr>
<tr>
<td>ACT</td>
<td>278.7</td>
<td>422.0</td>
<td>392.5</td>
<td>344.0</td>
<td>545.0</td>
<td>473.2</td>
<td>473.0</td>
</tr>
<tr>
<td>Aust.</td>
<td>16833.1</td>
<td>22103.3</td>
<td>21795.9</td>
<td>19597.9</td>
<td>26008.7</td>
<td>26008.7</td>
<td>24045.3</td>
</tr>
</tbody>
</table>

Note: For Assumptions of Population Scenarios see Table 57.

Source: NPC 1991:37
In that set, Queensland’s share of national population is forecast to increase to over 18 per cent by 2001 (from 16.8 per cent in 1989) and to 19 per cent by 2031. This is lower than current rates of increase would suggest. On the other hand Western Australia’s share is forecast to rise from 9.5 per cent to around 11 per cent in 2001 and 12 per cent in 2031. Given current processes this may be high.

The NPC (1991) has made projections of population growth for Australia’s five major cities. With an estimated net annual gain of 150,000 immigrants they estimate that 6.7 million of a total growth of 10.5 million would locate in these five cities. The estimated population in each city is displayed in Table 3.12.

Table 3.12: Population of Australia’s Major Cities, 1990 to 2030, Selected Migration Scenarios

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>Zero</th>
<th>100,000</th>
<th>150,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney</td>
<td>3.5</td>
<td>3.6</td>
<td>4.8</td>
<td>5.2</td>
</tr>
<tr>
<td>Melbourne</td>
<td>3.0</td>
<td>3.2</td>
<td>3.9</td>
<td>4.1</td>
</tr>
<tr>
<td>Brisbane</td>
<td>1.3</td>
<td>1.6</td>
<td>2.7</td>
<td>3.2</td>
</tr>
<tr>
<td>Adelaide</td>
<td>1.0</td>
<td>1.1</td>
<td>1.4</td>
<td>1.6</td>
</tr>
<tr>
<td>Perth</td>
<td>1.1</td>
<td>1.4</td>
<td>2.2</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Note: Populations are for statistical divisions

Source: NPC 1991:61

3.5 Household Formation and the Demand for Land

In order to get a better understanding of the planning implications of future population trends it is necessary to translate population projections into their impact on the nature and rate of household formation. Much service provision, particularly housing demand and infrastructure need, is dependant more on the growth of households than of population. The major player in the analysis of trends in household formation as a contributor to the nature of housing demand in particular, is the Indicative Planning Council for the Housing Industry (IPC).

3.5.1 The Underlying Requirements for New Dwellings.

The IPC role is to estimate the underlying requirement for new dwellings, where this is defined as: the number of new dwellings which would satisfy the trend demand for housing taking into account assumption regarding:
- demographic changes
- broad economic trends
- the number of vacant dwellings in the stock
- replacements required to offset losses of existing dwellings.

3.5.2 National Trends

Household formation rates have begun to level off for most age groups after a steady increase prior to the 1980's. This downward trend is expected to continue.
The underlying demand for new dwellings over the past decade or so has varied from a low of 116,000 in 1984 to a high of 165,000 in 1989. These fluctuations are related to immigration levels, but also to economic conditions such as finance availability and cost.

Table 3.13: Underlying Requirements for New Dwellings ('000s), States and Territories 2011-12.

<table>
<thead>
<tr>
<th>State/Territory</th>
<th>1997-98 to 2001-02</th>
<th>2002-03 to 2006-07</th>
<th>2007-08 to 2011-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>33.9</td>
<td>31.9</td>
<td>31.1</td>
</tr>
<tr>
<td>Vic.</td>
<td>24.9</td>
<td>22.5</td>
<td>21.3</td>
</tr>
<tr>
<td>Qld.</td>
<td>30.9</td>
<td>30.2</td>
<td>29.8</td>
</tr>
<tr>
<td>SA</td>
<td>7.2</td>
<td>6.7</td>
<td>6.4</td>
</tr>
<tr>
<td>WA</td>
<td>15.5</td>
<td>15.2</td>
<td>14.9</td>
</tr>
<tr>
<td>Tas.</td>
<td>2.2</td>
<td>2.0</td>
<td>1.9</td>
</tr>
<tr>
<td>NT</td>
<td>1.5</td>
<td>1.4</td>
<td>1.3</td>
</tr>
<tr>
<td>ACT</td>
<td>3.2</td>
<td>3.1</td>
<td>3.0</td>
</tr>
<tr>
<td>Aust.</td>
<td>119.3</td>
<td>112.9</td>
<td>109.7</td>
</tr>
<tr>
<td>NSW</td>
<td>31.5</td>
<td>29.4</td>
<td>28.6</td>
</tr>
<tr>
<td>Vic.</td>
<td>23.5</td>
<td>21.1</td>
<td>19.9</td>
</tr>
<tr>
<td>Qld.</td>
<td>30.0</td>
<td>29.3</td>
<td>29.0</td>
</tr>
<tr>
<td>SA</td>
<td>7.0</td>
<td>6.4</td>
<td>6.1</td>
</tr>
<tr>
<td>WA</td>
<td>14.5</td>
<td>14.3</td>
<td>14.0</td>
</tr>
<tr>
<td>Tas.</td>
<td>2.1</td>
<td>2.0</td>
<td>1.8</td>
</tr>
<tr>
<td>NT</td>
<td>1.4</td>
<td>1.3</td>
<td>1.2</td>
</tr>
<tr>
<td>ACT</td>
<td>3.1</td>
<td>3.0</td>
<td>2.9</td>
</tr>
<tr>
<td>Aust.</td>
<td>113.1</td>
<td>106.8</td>
<td>103.5</td>
</tr>
</tbody>
</table>

Source: IPC, 1993a

Due to the current high levels of affordability in housing (lower housing prices and mortgage interest rates) there has been a short term boom in housing construction which has caused a revision in the forecast level of commencements for 1993-94 from 157,000 to 168,000. However, in the medium term (1991-96) a decline to an average 117,000 per annum is forecast. Long term projections foresee even further falls, as illustrated in the accompanying graph (Figure 3.8).

Figure 3.8: IPC Projections of Underlying Requirements to 2011, Australia (in thousands)

Source: IPC, 1993a
3.5.3 State Forecasts

Projections at a state level are also made by the IPC and by some individual state authorities. There are some discrepancies between these stemming from different assumptions and these are highlighted below. The state forecasts are generally higher than are the IPC set.

New South Wales

The IPC project a steady decline in long-term underlying demand in NSW from an average 32,600 1992-96 to 28,600 (2007-2011). This is 10,000 lower than the estimates made by the NSW Department of Planning largely a function of assumptions made regarding immigration and interstate migration.

Victoria

The IPC forecast a decline of new dwelling requirements from 24,000 to 19,000. Now dated Victorian Treasury estimate (1989) also foresee a decline, but with higher levels of activity.

Queensland

The IPC forecast a decline over the projection period although this will not be as marked as in the other states (32,000 down to 29,000).

Figure 3.9: IPC Projections of Underlying Requirements to 2010 for New South Wales, Queensland and Victoria (in thousands)

Source: IPC, 1993c

The Queensland Department of Housing, Local Government and Planning on the other hand envisage a slight increase rising from 34,000 to over 35,000 by the middle of the next decade (2006-2011).
Western Australia

The IPC have forecast a slight increase in underlying demand for Western Australia moving from 13,500 to 14,000, while the W.A. Department of Planning and Urban Development are forecasting a decline but on a much higher volume (18,000 down to 16,800).

Other States and Territories

Only IPC forecasts are available for other states and territories. These project for the period 1992-96 to 2006-11.

- South Australia - decline from average 7,200 over first period to 6,100 over second
- Tasmania - decline from 2,300 to 1,800
- ACT - decline from 3,200 to 2,800
- NT - decline from 1,400 to 1,200.

3.5.4 Sub-state and Metropolitan Forecasts

Forecasts at this scale are considerably more difficult than at higher levels because of the increase in complexity of accurate estimates. Sub-state forecasting is not done by the IPC and only a few states have done their own. Only in Victoria and Queensland has there been an attempt at projecting LGA level changes.

New South Wales

NSW Department of Planning projections break sub-state analysis into Sydney and balance of NSW. While new dwelling requirements are expected to decline substantially for non-metropolitan NSW (from 20,100 in 1991-96 to 16,900 in 2006-2011), a small increase is forecast for Sydney Statistical Division (22,300 to 22,600).

Victoria

The opposite is anticipated for Victoria. A substantial decline in projected dwelling commencements was projected for metropolitan Melbourne (23,000 down to 14,000) while non-metropolitan Victoria was forecast to rise from 13,000 to 14,000.

Forecasts for within Melbourne have also been made by the Department of Treasury. Using a fourfold categorisation into inner, middle, outer and fringe zones substantial decreases in underlying demand are forecast for the outer areas, largely because these areas are reaching a fully built stage. However smaller declines are also forecast to occur in the fringe areas except in the North where levels of construction have been a little lower in the past.

Queensland

Because of the structure of local government in Queensland, sub-state forecasts are less detailed than for Melbourne. High and increasing levels of underlying demand are anticipated for LGA’s surrounding Brisbane. Albert Shire is forecast to have a requirement for 58,100 new dwellings over the period 1991-2006 while Logan is projected to have 41,200 for the same period. On the other hand demand in Brisbane is likely to decline sharply (15,000 in 1991-96 to 7,6000 in 2001-2006).
Western Australia

All nine statistical divisions in WA are expected to decline with the biggest decrease occurring in the Perth SD (13,700 to 12,800). No further spatial disaggregation is available.

In summary the level of underlying demand for dwellings is of considerable significance for the planning of urban areas. Unfortunately the most significant information needed for planning decisions is at the local area where services are needed. Forecasting is at its least reliable at this level.

That State Planning Authority projections do not match those of the more nationally focused IPC is a reflection of the very subjective nature of forecasting. Practically all state forecasts are above that of the IPC - in other words the assumptions that each state is using places their state in a more favourable light than does the national body. Yet not everyone can be gainers in what is effectively a zero-sum game. However, significance can be drawn from the generally downward trend of most forecasts regardless of the level at which they start out.

Where available figures for metropolitan fringe growth indicate that outward expansion is likely to remain the major expression of growth. Queensland in particular envisages very substantial continuing development outside Brisbane in Albert, Logan as well as the Gold and Sunshine Coasts. However, with declining overall levels of demand, the pressure for expansion even in these areas is likely to ease somewhat in the next twenty years.

3.6 Conclusions and Implications

There are many significant implications in trends in population numbers distribution and composition, and in the demand for housing and land. There will be considerable pressure on the public sector to respond to these trends of changing needs and demand for either the type or location of development, service needs, social outcomes and environmental impacts. The form of development and particularly the degree and nature of future urban development is both a product of these trends, and the focus for initiative to develop a more competitive Australia.

One of the major implications of the population trends described above related to the nature and form of housing provision and associated service provision. Australians have traditionally had very high expectations for the quality and size of the dwelling stock they occupy. The expectations have in large part been encouraged by a series of government programs over a long period of time which have encouraged high levels of investment in housing. The improvement of housing standards has largely been achieved through the provision of separate free standing dwellings most commonly located on the expanding fringe of large metropolitan areas. However, quality growth in the housing stock during the 1980's may reflect diminishing returns on housing investment. It is possible that tax measures combined with the deregulation of housing finance, may have brought about higher investment in owner-occupied then rented dwellings; additions to dwellings which increase capital value but not rental returns; and an increase in the number of unoccupied or under-utilised houses (holiday homes or part time dwellings) (EPAC, 1990).

Investment is fundamental to growth in living standards. Yet the level of savings in Australia has been insufficient to finance investment with the result that there has been a reliance on foreign borrowings to finance domestic investment. Reduced levels of investment in housing which will occur if the predicted fall in underlying demand for dwellings is accurate have implications for investment in other sectors. Gross investment in housing as a percentage of GDP has already fallen from 5.6 per cent in the 1970s to 4.9 per cent in the 1990’s (EPAC, 1990). A slowing in the growth
of housing and other non-tradable sectors could make room for expansion of export and import competing sectors.

Low density development, associated with lags in the funding and provision of infrastructure and services, raises a number of issues about continued suburbanisation. In transport for example limitations in arterial road capacity, speed of traffic on local streets, and the shortage of public transport are all pertinent issues. Other problems of access arise in relation to employment, social services, shopping and education which requires considerable travel and likely car dependence.

Peripheral development is also expensive. Estimates of aggregate infrastructure costs excluding both developer and land costs in Sydney has been estimated at $51,000 per lot; in Melbourne $42,000 - 47,000; and in Perth $43,000 (EPAC, 1991). Growing constraints on public sector borrowing have meant that wither low density growth has to be slowed in favour of other forms of development, or other forms of funding such as developer levies or direct user charges will need to be introduced. The cost of infrastructure provision does vary substantially. A strategic approach to development could lead to significant economic benefits if more efficient use was to be made of both established and new infrastructure. Assuming a cost per cost for infrastructure of even $40,000, with an estimated 117,000 lots required per year, a 10 per cent saving could realise an annual benefit of 468 million.

However, the corollary of limiting expansion on the edge of the city is that existing infrastructure will be more heavily utilised. The commonly made assumption that spare infrastructure capacity exists in developed areas has not been thoroughly tested, nor has there been any comprehensive assessment of the quality of existing facilities or the costs involved in upgrading them to present day standards (Industry Commission, 1993).

There are also implications in any changes in the funding of infrastructure. For instance if developer are to recover their costs, land will have to sell at prices substantially higher than current vacant land does. Were this to happen there would be significant equity considerations. Changes would be largely passes forward to the occupants of new dwellings, while large capital gains would be received by existing property owners at prices rose (EPAC, 1991:42). Any move to alter the availability and/or pricing of land will have to be thought through carefully.

A more efficient use of residential infrastructure can be achieved through infill development and urban consolidation but this will satisfy only part of the demand. The assumption that changing household numbers and types will be reflected in changed demand for housing types and location needs to be fully explored. Single family dwellings are a very flexible form of accommodation suitable for use by a range of household types. Given the growing fluidity family and household composition they provide a more adaptable living environment than does other housing forms. In addition families have traditionally moved to the suburbs to obtain high quality housing at affordable prices. Because much of the existing stock of this type is occupied (although often at falling levels of occupancy) younger families seeking to upgrade have relied on a new supply to provide opportunities to move.

Other implications of population trends relate to the ageing of the population, which will have its greatest impacts in the middle suburbs of the major metropolitan areas. This ageing in situ will place considerable demands on services provided by local government which may not be equipped to deal with these trends. The ageing population will on the whole increasingly over-consume housing (small households, large houses) in these areas and contribute to new development pressures elsewhere. A strategy of both reducing transaction costs and providing suitable alternative accommodation within the region would be one way of approaching this problem.
Ethnic mix is another important urban feature. Post-war immigration in Australia has occurred in a series of waves, each of which is characterised by a different mix of birthplace groups. Each group has added another element of diversity to the national population and although they are strongly represented in Australian cities, their intra-urban and inter-urban distribution has varied according to the circumstance which prevailed at the time their wave was at its peak. This multicultural dimension of Australia’s population offers a major opportunity in our economic development through trading links with home countries, socio-cultural milieus of cross fertilising of ideas and products and as an attraction to tourists through the cosmopolitan nature of our cities and regions.

Trends in population composition and distribution are generally beyond the scope of government intervention. However there does need to be considerable attention to the implications of such shifts.

Massive population movements whether they are to the south-east coast of Queensland or the suburbs of Perth bring changes in the demand for many publicly provided goods and services, ranging from physical infrastructure through to social services. To that extent the various levels of government must be prepared to react to the changing needs and there must be appropriate intergovernmental arrangements to ensure that these services are developed efficiently and effectively.

However, such trends as have been observed also raise the question of the extent to which current governmental policy (at whatever level) is contributing to the current processes. Many of these questions do not have an obvious answer. For example is suburbanisation a product of a subsidised system of infrastructure provision, and is housing consumption distorted by the taxation system? Are housing consumption adjustments to more closely reflect needs being constrained by transaction costs which keep households from moving to more appropriate accommodation? Or is the production of more appropriate housing into locations where it is most needed being obstructed by local planning strategies?

These are issues which need to be clarified. Most are in the realm of State or Local Government but the Commonwealth clearly has a major role in its control of funding. The development of urban areas which are less demanding of public and private investment will require a concerted effort not only to comprehend the complexity which drives urban development, but also to convince the public at large that such changes are a necessary precursor to greater growth and prosperity.

In conclusion the nature of population trends, including growth rates, composition and distribution and the consequent demands for space and services are of utmost importance to the future development of our cities and regions. Not only will the development compete for investment in infrastructure and facilities oriented more towards the traded goods and services sector, but the type of development which occurs may itself contribute to the competitive situation of Australian region. There is little doubt that the development focus will remain strongly on the existing major urban areas, and increasingly to a few locations within there where strong groupings of cognate activity are forming. However the viability and potential of such linked spaces will depend to a large degree on the overall nature of development, the costs imposed and the liveability of the environment which is created. To that extent it is the local planners who must react to some of these large scale processes in a way which both enhances a viable form of development, but at the same time does not create uneven or unfair effects on different elements of the population.
4 EMPLOYMENT AND INVESTMENT

Trends in the structure of employment and investment in economic activity reflect a number of factors. Increasingly the processes of globalisation and internationalisation are important, as are the impacts of changes in policies such as industry protection, and changing patterns of distribution of population which generates local demand for goods and services. The spatial outcomes of these trends are reflected in patterns of employment and investment in cities and regions which is uneven.

It is worthwhile analysing these patterns at the national, regional and sub-metropolitan scales not only to identify variations in the economic performance and position of cities and regions, but also in order to address the equity implications of structural economic change and adjustment. It is, however, difficult to conduct such disaggregated analysis in Australia, particularly for investment in economic activity, because of the limitations in Australia's official data sources which are available at only a highly aggregated spatial scale.

Despite the limitations of data sources, it is possible to develop an analysis of trends in patterns of employment by industry sector and of trends in capital investment in a range of economic activity sectors in Australia and to identify significant spatial variations in these patterns at the national and broad regional (State and Territory) levels of scale and for some indices at the sub-metropolitan level of scales.

This section of the Report summarises the detailed analyses undertaken in Appendix 3. The analysis focuses on:

- Patterns of structural and spatial change in employment by industry sector in the nation and its States and Territories.
- Variations in patterns of employment between metropolitan cities.
- Variations in patterns of employment with respect to the internal structure of metropolitan cities.
- Projecting future trends in patterns of employment.
- Trends in aggregate patterns of capital investment by public and private sectors.
- Changing state shares in private capital investment and various industry sectors.
- Variations between metropolitan cities in trends in investment in various industry sectors.
- Patterns of foreign investment trends.
- A consideration of the impacts of fixed and operational costs on industry and employment locations.

A significant consideration for policy is the degree to which there is congruence or divergence emerging across Australia's cities and regions in the trends and patterns of population distribution, of investment in economic activities and of employment. In part these trends create the need for policy responses through shifts in the location of demand for particular categories of goods and services. They also point up the areas where policy intervention is likely to be most successful through the identification of emerging concentrations and mixes of particular types of activities.
4.1 Structural and Spatial Change in Employment

National Patterns

In the context of globalisation of production processes and the internationalisation of capital and division of labour, the role of cities and regions have changed dramatically over the last two decades or so. Globally linked city regions are now the nexus of the emerging global society and global networks and linkages are reshaping both the structure and the spatial outcomes of the economies of nations in ways that are largely beyond the control of national and local governments.

The external focus of internationalisation together with policy shifts (particularly reduced tariff protection and financial deregulation), have caused substantial restructuring of patterns of economic activity and employment in Australia since 1971 (see Figure 4.1).

The relative share of manufacturing employment has fallen from 25 per cent to 14 per cent.

The share of employment in community services and public administration has increased from 15 per cent to 23 per cent.

The share of employment in finances, property and business services has increased from 7 to 12 per cent.

The clear shift towards an economy in which employment is increasingly dominated by the consumer and the producer services sector is in line with trends world-wide in advanced post industrial societies and is also emerging in the newly industrialised nations.
The nature of work has also changed. Two-thirds of the 737,000 new jobs created between 1986 and 1993 have been part-time.

Table 4.1 Employment Change (1986-1993)

<table>
<thead>
<tr>
<th>Place</th>
<th>Jobs 1986-1993 (000)</th>
<th>Job Change 1986-1993 (000)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Full Time</td>
</tr>
<tr>
<td>Sydney</td>
<td>1651</td>
<td>85</td>
</tr>
<tr>
<td>Melbourne</td>
<td>1405</td>
<td>59</td>
</tr>
<tr>
<td>Brisbane</td>
<td>644</td>
<td>123</td>
</tr>
<tr>
<td>Adelaide</td>
<td>469</td>
<td>27</td>
</tr>
<tr>
<td>Perth</td>
<td>561</td>
<td>85</td>
</tr>
<tr>
<td>Hobart</td>
<td>77</td>
<td>3</td>
</tr>
<tr>
<td>Canberra</td>
<td>160</td>
<td>31</td>
</tr>
<tr>
<td>Australia</td>
<td>7716</td>
<td>737</td>
</tr>
</tbody>
</table>


It is significant that employment growth is focused primarily on small enterprises as larger firms have shed labour and non-core functions (see Figure 4.2). The viability of growth in the small business sector is an increasingly crucial issue and has significant policy ramifications that relate to matters such as taxation, labour market response, financial institution lending policies, and the potential roles of enterprise zones.

Figure 4.2 Where the Jobs Are: Employment by Type of Employer (% change on previous year)

Source: Access Economics
The shift towards a services dominated economy and the emerging importance of internationally competitive elaborately transformed manufacturers (ETM's) is apparent in the dramatic changes that have occurred since the mid 1980's in the sectoral patterns of Australia's exports (see Figure 4.3): tourism has been the leading export industry since 1988/89, and manufactures are now third after coal. ETM's and services exports, which are urban-based, are clearly emerging as export strengths for Australia. It is in these areas where the country's strength appears to be. The importance of smaller firms has been recognised in the recent Government statement on industry development policies through incentives for research and development for smaller firms and enhanced diffusion of new technologies, support to improve networking and management skills and in improved access to finance in particular (Working Nation, 1994, p. 9).

![Figure 4.3 Australia Export Earnings by Sector 1984/85 - 1990/91](image)

Source: ABS and BTR

Regional Patterns

There are marked regional variations in the trends and patterns of employment across industry sectors. While this has always been the case, significant new patterns are evident in the creation of jobs, rate of loss of jobs, and sectoral share shifts particularly between the capital cities, reshaping the different roles that they are playing in the national economy and the degree to which they are linked internationally.

Patterns of growth and loss of employment by industry sectors in the metropolitan cities showed the following (see Figures 4.4 to 4.8).
Figure 4.4  Change in Jobs by Industry, Sydney (1981-1991)

Figure 4.5  Changes in Jobs by Industry, Melbourne (1981-91)
Figure 4.6  Changes in Jobs by Industry, Brisbane (1981-91)

Figure 4.7  Changes in Jobs by Industry, Adelaide (1981-91)
The growth sectors of the economy have a distinctive geography at a regional level. Tourism employment and investment is most concentrated in Sydney, south east Queensland and Cairns and selected other coastal regions, export manufacturing has concentrated on Melbourne and Sydney; and producer services growth has been particularly strong in Sydney with about 80,000 jobs created in this sector between 1981 and 1991.

Very large losses in the transformative sector of industry (manufacturing and construction) have occurred in Melbourne and Sydney between 1981 and 1991. Melbourne alone lost over 70,000 jobs in this sector in ten years.

Producer services (including finance, business, property and research) were the major growth area in employment in Sydney and Melbourne, and while they were important in the other metropolitan cities, social service (encompassing public administration, defence and community services) dominated job growth in Adelaide, Brisbane and Perth.

Distributive services (wholesale, retail, transport, communications and storage) had considerable growth in jobs in all the cities, and were particularly significant in Brisbane.

In terms of internal patterns of employment shown by industry sector, it is striking how dominant Sydney is as a services city, with over 15 per cent of its employment in 1991 being in the finance, property and business services sector. Melbourne (17.3 per cent) and Adelaide (15.3 per cent) have the highest level of employment in manufacturing industries, reflecting to a degree their historic roles under the protected industries policies. Brisbane is clearly a services dominated city, particularly in
consumer services and public administration. Perth also is a services city. Adelaide (21 per cent) and Perth (19.9 per cent) have very high concentration of employment in community services.

Sub-metropolitan Patterns

There are well established theories on why there is marked spatial differentiation within cities in the structure of employment and patterns of economic activity. Analyses of employment structure by zones and sectors in Australia's capital cities reveals broad patterns typified by traditional 'white' and 'blue' collar sectors which match the broad patterns of distribution of incomes. In the post World War II era, employment growth tended to both concentrate within major commercial agglomerations (especially the CBD) as well as being dispersed to the new industrial states and retail concentrations in the rapidly growing suburbs. However, during the last 10 to 20 years economic restructuring has changed the pattern of job growth and decline and relative distribution of the labour force across industry sectors in a manner which has created even more marked spatial variations in trends in labour markets and patterns of employment and unemployment.

Over the decade 1981 to 1991 patterns of jobs growth and decline within the metropolitan cities reveals the following (see Appendix 3, Figures 9 to 13).

- Employment growth was greatest in the outer regions of each metropolitan area, while loss of jobs occurred most commonly in the central and inner regions. For example in Sydney the large outer LGAs of Blacktown and Penrith as well as those that make up the broad western region (Parramatta, Auburn and Holroyd) have had the largest increases in overall employment. In Melbourne the eastern outer region centred on Knox and Nunawading gained 31,000 jobs. Outer suburban job growth has been closely associated with growth in the distributive and the social services sectors.

- Massive jobs losses have occurred in inner city regions, particularly from the transformative sector. For example, inner Sydney lost 25,000 jobs and inner Melbourne lost 15,000 jobs in this sector alone. Older industrial suburbs, such as Leichhardt, Marrickville and Canterbury-Bankstown in Sydney, and Brunswick-Coburg, Preston-Northcote, and Footscray-Essendon-Williamstown in Melbourne likewise experienced a significant loss of transformative jobs. Similar job losses occurred in the inner and middle suburbs of Adelaide, Brisbane and Perth.

- Employment in the distributive activities declined in the inner zones of most metropolitan cities, but grew elsewhere, particularly in the outer areas which this sector dominated. This pattern is well illustrated in Melbourne where these activities led to jobs growth in the western-outter, Melton-Werribee, Mornington-Peninsula, eastern-outer, eastern-fringe, southern-outer, Dandenong-Springvale, and south-eastern-outer areas.

- There was a pattern of strong jobs growth in social services in many of the lower socio-economic status areas in the outer suburbs of metropolitan cities. For example, in Sydney this was most marked in Liverpool, Campbelltown, Wollondilly, Blue Mountains and Penrith.

- Growth in jobs in producer services activities was widespread, but it was most typically associated with the higher and middle socio-economic status areas in both the inner and outer parts of the metropolitan areas. For example producer services had jobs growth in Sydney in the CBD area, Leichhardt-Marrickville, the eastern suburbs, St George, Ashfield, Burwood, Drummoyne, Concord, Strathfield, Baulkham Hills, Lower North West, Mosman, North Sydney, Willoughby and Ku-ring-gai, and in Melbourne in inner Melbourne and the eastern suburbs. A similar pattern is evident in the other cities, where massive inner city loss of jobs, particularly in the transformative sector, is being compensated for by growth in producer...
services in the central area; transformative activity is shifting to the outer suburbs; and there is strong growth particularly in distributive activities and social services. Details of these are contained in Appendix 3 - Figures 3.9 - 3.13.

4.2 Likely Future Trends in Employment

The Commonwealth Department of Employment, Education and Training (DEET, 1991) has produced a detailed and interesting study which concludes that there may be a somewhat different national pattern of trends in industry employment and output over the remainder of the decade to the year 2001 compared to the previous two decades. The findings have significant implications for cities and regions. The DEET study predicts:

- Growth in output, but not necessarily significant growth in employment, in rural, mining and manufacturing activities.
- A slowing in the recent rapid growth in employment in producer services activities.
- Strong growth in construction, transport (especially air), recreation and personal services.
- Growth in community services.

The study suggested that there would be substantial variations in employment growth by State and Territory. Queensland and Western Australia are projected to grow strongly. But it makes the point that the distribution and expansion of employment across industry sectors within each state will depend largely on both national industry trends and state industry mixes. Government policies are identified as crucial factors and in particular transport and infrastructural expenditures. The DEET study projects that:

- If national industry trends are reflected at the state levels, there will be a substantial shift of employment within states towards the construction industry, and the services sectors encompassing wholesale and retail, community services and recreation.
- Agriculture, electricity, gas and water sectors will have declining employment levels, and this will be greatest in Queensland, Tasmania, Western Australia and South Australia.
- The manufacturing sector employment will grow in New South Wales and Victoria despite continuing declines in the relative share of this sector.

Importantly the study suggests that the processes of employment growth exerted by structural change are likely to be different from those experienced in the 1980s and that the growth of each State’s employment share will be characterised by a different mix of industries.

4.3 Capital Investment and Economic Activity

Economic activity patterns reflect largely the investment decisions of corporations (trans-national and national), firms, individual operators and financial institutions (international and domestic). Decisions on private sector investment in capital and plant, in research and development activity, and human resources are crucial inputs to the process of production of goods and the provision of services. One may go even further to suggest that the decisions made on investment in economic activity - what, where, when and how much - and the capital flows that are thus generated, are the
over-riding factor in determining what activities contract and expand, where they are located, and the levels of employment that they generate.

An analysis of trends in the pattern of investment across economic activity sectors and over space will tell us much about the competitive advantage of both activities and locations.

In addition to private capital investment, levels of and trends in, public capital investment are important for the provision of infrastructure. Public and merit services are widely acknowledged as having an important catalytic effect on attracting private capital investment in addition to playing a necessary role in providing the basic infrastructure to enable manufacturing, services and other urban and regional functions to operate.

Capital investment patterns vary substantially over space, and do not always mirror other patterns of distribution, such as population and employment. Capital investment in both building and plant and in human capital, is influenced by the location of strategic infrastructure (e.g. airports, ports, transport and communications networks) and agglomerations of nationally and internationally linked advanced manufacturing and producer services activities. Thus, it could be imputed that patterns of capital investment will reflect the tendencies of economic activities to either disperse or concentrate and agglomerate as well as reflecting decisions about public expenditure at all levels of government in infrastructure and facilities.

Aggregate Patterns of Investment

Gross fixed capital expenditure in Australia was $75.6 billion in 1992/93, representing 19.3 per cent of GDP. Gross fixed private sector investment was $56.4 billion, or 14.04 per cent of GDP, and gross fixed public sector investment was $19.2 billion, or 4.79 per cent of GDP.

![Figure 4.9 Change in Gross Fixed Capital Expenditure as a Percentage of GDP, 1984/85-1992/93]

Source: ABS (1993e)
Throughout the 1980s and into the 1990s there has been a steady decline in fixed capital expenditure in many sectors of the economy as a proportion of GDP. Since 1988/89 during the recession years non-dwelling construction investment and real estate transfer expenditures have declined sharply, and even housing expenditure has declined along with other industry sector expenditures as a percentage of GDP. Between 1984/85 and 1991/92:

- General government fixed capital expenditure declined from 3.78 per cent to 2.56 per cent of GDP.
- Public enterprise gross fixed capital expenditure declined more rapidly from 4.3 percent to 2.9 per cent of GDP.
- Only in telecommunications and electricity generation have public sector outlays maintained parity with GDP (see Appendix 3 - Figures 14 to 21).

It is apparent from the 1991/92 national accounts data that gross fixed capital expenditure in some sectors has reached a level where consumption of fixed capital exceeds the level of new fixed capital investment. If this trend for the ratio of new fixed capital investment and capital consumption to drop were to continue, Australia’s net worth may ultimately decline, leading to reduced production capacity and competitiveness. If cities and regions that are the lynchpins of Australia’s export-thrust and which need to provide the strategic network linkages are not the targets of capital investments at a level sufficient to provide infrastructure and services required to enhance their continued competitiveness, then the future prosperity of the nation will be at stake. In addition, regions that are lacking in competitiveness are in need of strategic targeted capital investment in infrastructure and services that will help them overcome their deficiencies.

4.4 Changing State Shares and Private Capital Investment

There are considerable variations between the States and Territories in levels of, and trends in, private capital investment.

In 1993 private gross fixed capital expenditure per capita on non-dwelling construction ranged from a low $580 in the Northern Territory to a high of $922 in Western Australia. It was $892 in the ACT, $839 in New South Wales and $800 in Victoria, $796 in Queensland, and $600 in South Australia. Per capita expenditure on equipment ranged from $125 in the Northern Territory and $728 in the ACT to a high of $2166 in Western Australia.

O’Connor and Stimson (1994) have analysed the changing state share of private capital investment in Australia over the period 1982 to 1992. The patterns indicate the following:

- The relative share of New South Wales was on the rise for most this period, while Victoria was static or in decline for capital investment in manufacturing, financial services and non-residential construction.
- While the ‘sun-belt’ states of Queensland and Western Australia were attracting increasing shares of population, their performance in share of private capital investment was poor and Queensland actually lost share substantially over most of the period.
- New South Wales and Victoria had higher per capita levels of investment than Queensland, despite having lower population growth rates, and they have higher per capita rates of fixed capital accumulation and productivity than the growth states.
There has been only a minor change in shares of GDP, with Victoria falling slightly, reflecting little change in the geography of production and investments (see Appendix 3, Figures 22-25).

Metropolitan City Investment

O’Connor and Stimson (1994) and O’Connor (1990) have demonstrated that over the last decade Sydney and Melbourne have maintained, and in some instances increased their dominance as destinations for private capital investment. Brisbane, the rapidly growing metropolis in south east Queensland, only shows up as a growth area for residential investment. Analysis conducted for capital investment in various economic sectors revealed that:

- Sydney was the dominant city for investment in commercial office construction, capturing over 38 per cent of the nation’s investment in that boom sector, reflecting its national gateway role.
- Melbourne was the dominant city for investment in factory construction.
- Sydney had the highest levels of performance for attracting investment in transport and communications, surging ahead of Melbourne.
- Sydney dominated investment in hotel construction.
- Patterns of capital investment in consumer generated activities - retailing, health and education - reflect population growth, with Brisbane performing strongly, but Perth performing relatively poorly.
- In retail capital investment, Sydney performed particularly strongly and Melbourne lost badly in its share.
- Melbourne and Sydney continued to dominate for investment in Research and Development activities, with there being slight gains in Brisbane and minor losses in Adelaide and Perth. Canberra performed strongly in Research and Development investment.

![Figure 4.10](image-url)

**Figure 4.10** Research and Development by Share of States, 1978-1990

Source: O’Connor & Stimson (1994)
The strong export performance of both tourism and manufacturing have important urban and regional impacts. Tourism is of major significance for Sydney, south-east Queensland, and north Queensland. Manufacturing is concentrated in Sydney and Melbourne. The urban impacts vary however. Tourism is generating jobs and has a flow on population attracting effect whereas manufacturing has increased output but with a reduced labour input. Thus there is a growing disarticulation of population growth and employment. New elements are appearing in the population growth-economic development nexus. Instead of restructuring being associated with job loss and population decline in some regions, and job growth associated with job increase in others, it now appears that restructuring to higher standard jobs can occur in regions of population loss. The high technology focus of many such jobs together with their strong agglomerative tendencies and relatively low labour inputs, may have such a result.

On the other hand, a growing proportion of population relocation is unrelated to employment except in an indirect way. Some groups have achieved greater locational discretion - especially retirees who are no longer faced with locations constrained by workplace, and who have both the proceeds of a house sale, and increasingly the cushion of lump sum payment to expand their choice. The spending power of these particularly in the retail and personal services arena. The unemployed and those seeking new or better business opportunities particularly in the services sector are reinforcing the general northward drift of the population.

Thus in spatial terms, a major impact of the structural economic shifts being experienced is the differentiation in employment growth and structure at a regional level in Australia.

4.5 Foreign Investment

Australia is a nation that traditionally has been highly dependent on foreign direct investment (FDI) for the development of all sectors of its economy. This dependency has continued with the rise of the services sector including tourism.

FDI literally flooded into Australia in the 1980's. Analysis conducted by Daly and Stimson (1992, 1994) has shown that:

- Between 1983/84 and 1988/89 FDI increased an average of 34 per cent annually, increasing from $81.9 billion to $222.9 billion.
- While the United Kingdom and United States remained the main sources of FDI, their relative shares decreased substantially in favour of Asian sources of investment, with Japan in particular playing a major part.
- There was a substantial shift in the destination of FDI away from the resources and manufacturing sectors to the property and business services, including tourism. Property attracted 28 per cent of total FDI in 1985/86, but this increased to 46 per cent at the peak of the boom with Japan supplying 33 per cent of borrowed investments.

In 1988/89 tourism attracted 15.6 per cent of total FDI, 70 per cent of which was from Japan. The geographic distribution of FDI changed dramatically as a result of these sectoral shifts in destination. Between 1985/86 and 1988/89:

- New South Wales attracted 32 per cent and Queensland 21 per cent of total FDI approvals by value
• New South Wales attracted 57 per cent and Queensland 27 per cent of FDI in property and business services
• Queensland attracted 54 per cent and New South Wales 37 per cent of FDI in tourism

![Graph showing foreign direct investment in Australia](image)

**Figure 4.11** Foreign Direct Investment in Australia: Finance, Property and Business Sectors by Country of Origin, 1984/85 - 1991/92

Source: ABS Cat. No. 53053.0

The concentration of foreign direct investment in New South Wales and Queensland is associated with the growth of the tourism industry, but also in property investment. While the former will add to Australia’s economic performance, property investment is a less productive form.

### 4.6 Impacts of Fixed and Operational Costs on Industry Sector

In its desire to become more competitive internationally, Australian industry is paying greater attention to the impact of development and operational costs and their variations between regions in making location decisions. Typically State government industry strategies aim to create packages of cheap land, buildings and one off initiatives to assist industry. However, it is doubtful if such strategies are appropriate for today’s world and for the future as industries contemplating expansion of operations or contemplating commencing operations are concerned to minimise variable costs of energy, transportation and material supplies. Thus, production costs and pricing policies of public utilities, including long term contractual agreements, are now crucial factors that influence decisions on locations for investments in new or expanded economic activity for manufacturing industries.
There are significant regional variations between the capital cities in these particular costs:

- Sydney appears to have considerable variable and operational cost advantages, as does Melbourne, particularly in costs of energy (gas and electricity) and water supply and sewerage treatment.

- Brisbane is at a cost disadvantage in a number of factors such as energy, water and waste disposal.

### Table 4.2 Capital City Variation in Selective Industry Costs

<table>
<thead>
<tr>
<th>City</th>
<th>Gas/GJ$</th>
<th>Electricity/Kwh</th>
<th>Water Supply cents/kl</th>
<th>Sewerage/kl</th>
<th>Solid Waste/tonne$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melbourne</td>
<td>$2.10</td>
<td>4.50 cents</td>
<td>$0.64</td>
<td>$1.15-1.50</td>
<td>$17</td>
</tr>
<tr>
<td>Sydney</td>
<td>$3.05</td>
<td>5.50 cents</td>
<td>$0.61</td>
<td>$1.35-1.50</td>
<td>$13-15</td>
</tr>
<tr>
<td>Brisbane</td>
<td>$3.75</td>
<td>6.05 cents</td>
<td>$0.67</td>
<td>$2.30</td>
<td>$47</td>
</tr>
<tr>
<td>Adelaide</td>
<td>$2.65</td>
<td>7.15 cents</td>
<td>$0.88</td>
<td>N/A</td>
<td>$16</td>
</tr>
<tr>
<td>Perth</td>
<td>N/A</td>
<td>8.22 cents</td>
<td>N/A</td>
<td>N/A</td>
<td>$25</td>
</tr>
</tbody>
</table>

$ a$ Australian Gas Industries Association

$ b$ Selected Local Authorities

Sources: Direct contact with major industrial manufacturers

It is not unlikely that Sydney and Melbourne will continue to dominate as advantageous locations for manufacturing, not only because of market factors, but also because of variable and operational cost factors.

It would seem that there is room for State governments to actively examine the profit margins for public utilities and to proceed with micro-economic reforms to reduce public utility charges and to reconsider their use of public utilities to generate state and local authority revenue - if Australian cities are to maximise their international competitiveness as locations for manufacturing activities.

### 4.7 Sydney’s role as a ‘World City’

Sydney is continuing to emerge as a ‘world city’ in terms of growing range of functions which are linked to a global role. An intensification of its national gateway function, and its growing dominance in the finance and business services sector of the national economy, are evidence of this. Forty-eight per cent of all in-bound international air passengers pass through Sydney.

It is also now the dominant location of activities in the international business and finance sectors - 150 international institutions are headquartered in Sydney compared with 43 in Melbourne (Daly and Stimson, 1992). Sydney dominates in commercial banking headquarters (10 to 4 over Melbourne), and in Merchant banking (81 to 6). Of the 100 largest Australian companies headquartered in each of the two major cities, Sydney moved from 45 to 60 between 1984 and 1989, while Melbourne fell from 41 to 29.

Apart from the growing national dominance of Sydney as Australia’s ‘international’ city, a growing regional dichotomy is developing between the high population growth states of Queensland and to a lesser extent Western Australia, and the slow or no-growth regions in the south east of the country. It
is the latter group that have undergone the most severe effects of restructuring and have suffered most from their recent recession in terms of unemployment rates.

To a large degree the dichotomy reflects differences in the sectoral industry structure of these areas - on the one hand the population growth driven services dominated ‘sun-belt’ regions (which also have substantial mining and agricultural sectors) and on the other hand, those areas with a legacy of manufacturing industry which developed under high levels of tariff protections. The recent reduction in this protection has opened these areas to the chill winds of international competition, and thus some painful restructuring.

Predicting the continuing impacts of structural economic change in Australia is difficult. There are however, likely to be continuing differences in the potential levels of demand for specific types of labour which will continue to influence both industry sectors and regions differently.

4.8 Conclusions and Implications

It is evident that there is an incongruence between trends as the spatial patterns of population, investment in economic activity and employment in cities and regions in Australia. Work being conducted by Daly, O’Connor and Stimson (1993 and continuing) provides a framework for analysing the relationships between these patterns as a result of processes that have been conveyed in this Report (see Appendix 3, Figure 28). It is possible to draw a number of at least tentative conclusions:

- Population is continuing to disperse through processes of sun-belt migration to coastal regions, suburbanisation and spill-over to areas surrounding metropolitan regions.

- The differential growth of population in local areas creates consumer demands which have generated jobs growth, particularly in consumer services, including social services and in coastal areas in tourism. Some growth in jobs in transformative non-export manufacturing is also occurring.

- Depopulation is continuing in many inner city and inner suburban areas of metropolitan cities and in many non-coastal non-metropolitan regions, with associated job loss.

- Processes of globalisation and internationalisation and structural economic change have fundamentally changed the employment by industry structure of cities and regions, and have resulted in marked differentiation within cities in urban labour markets. Relatively few locations have emerged with concentrations of employment in ETM’s and producer services that are export oriented. Vast areas of cities and some regions have been affected adversely by these processes and have experienced severe labour shedding.

- Sydney has emerged as the pre-eminent world city, Australia’s international gateway and place of increasing concentration of internationally linked activities.

- Sydney and Melbourne dominate as locations for investment in ETM activities, producer services and high tech Research and Development activities. New South Wales, and Sydney in particular, is gaining in its share of private capital investment in non-dwelling sector activities.

- Within metropolitan cities, and in particular in Sydney and Melbourne, there is strong evidence of increasing concentration of internationally linked activities at strategic
agglomerations, including the CBD, inner city and outer urban technology parks, and selected suburban commercial centres.

- Sydney, Gold Coast and the Cairns region in far north Queensland are the leading destinations for international tourism, and have attracted strong investment in tourism facilities and employment growth in this services sector.

- Foreign investment has become concentrated increasingly in the property and business services sector, including tourism, and it is being directed predominantly to metropolitan CBD locations in Sydney as well as to other capitals and to coastal tourism locations, predominantly Gold Coast and Cairns.

- While Brisbane and to lesser extent Perth metropolitan regions have experienced strong growth through internal migration and associated investment in housing and generation of consumption-related production and services employment they have performed poorly in attracting wealth generating investment in ETM's and producer services.

It is possible to conclude that across Australia's cities and regions, there are developing distinctive geographies of population and of investment in economic activities and employment. On the one hand population and employment in consumer related manufacturing and service is dispersing, albeit to distinct sun-belt coastal regions and to metropolitan outer suburban areas; while on the other hand investment in ETM's and producer services that have international or even only national linkages are concentrating at strategic agglomerations in relatively few locations.

There are significant policy implications in these trends, particularly where the goal is to build up innovative clusters of enterprise. In particular, given the current developments, there are a relatively small number of locations which have, or potentially might develop, clusters of activity of sufficient scale to create conditions conducive to developing strong linkages and a dynamic of growth and innovations. The implication is that any public initiatives to develop infrastructure to support such concentrations should build on existing strengths, rather than attempting to scatter investment over a wide range of locations.

This will require a thorough identification of regional strengths by identifying existing clusters of activity, and seeking means to build there further.
INFRASTRUCTURE INVESTMENT

Urban infrastructure is a critical component of urban and regional systems not only in terms of its economic influence but also in terms of social equity, environmental quality and its effect on spatial form. The context of this study was consideration of the influence of urban development on national economic development. Thus the focus here is on the role of urban infrastructure in:

- reducing the costs of production
- contributing to an environment or set of circumstances which lead to innovative and creative industry and businesses; and
- providing factors which contribute to the value of cities or regions as products in their own right

Urban infrastructure and its potential to influence the economic well-being of cities and regions is wide ranging particularly when an appropriately broad definition of infrastructure is considered (see Table 5.1). Thus an investigation of our infrastructure investment and expenditure regimes and their relationship to economic performance should provide useful insights into how we can manage the supply of infrastructure to assist in economic development. A wider discussion of this question is included in Appendix 4B.

Table 5.1 Urban Infrastructure Types and Components

<table>
<thead>
<tr>
<th>Type</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hydraulic Services</td>
<td>- Water Supply</td>
</tr>
<tr>
<td></td>
<td>- Sewerage</td>
</tr>
<tr>
<td></td>
<td>- Drainage</td>
</tr>
<tr>
<td>2. Energy</td>
<td>- Electricity</td>
</tr>
<tr>
<td></td>
<td>- Gas</td>
</tr>
<tr>
<td>3. ‘Solid’ Waste Disposal</td>
<td>- Putrescible waste</td>
</tr>
<tr>
<td></td>
<td>- Inert ‘clean fill’ waste</td>
</tr>
<tr>
<td></td>
<td>- Intractable hazardous waste</td>
</tr>
<tr>
<td>4. Transport - People &amp; Freight Movements</td>
<td>- Air</td>
</tr>
<tr>
<td></td>
<td>- Sea/Other Water systems</td>
</tr>
<tr>
<td></td>
<td>- Road (Truck, Bus, Car, Taxi)</td>
</tr>
<tr>
<td></td>
<td>- Rail (Train, Light Rail, Tram)</td>
</tr>
<tr>
<td>5. Communications - Information Exchange</td>
<td>- Telephone/fax</td>
</tr>
<tr>
<td></td>
<td>- Television/radio/print media</td>
</tr>
<tr>
<td></td>
<td>- Postal / courier services</td>
</tr>
<tr>
<td>6. Education</td>
<td>- Tertiary, both university and TAFE</td>
</tr>
<tr>
<td></td>
<td>- Secondary</td>
</tr>
<tr>
<td></td>
<td>- Primary</td>
</tr>
<tr>
<td></td>
<td>- Pre-school</td>
</tr>
<tr>
<td>7. Health</td>
<td>- Hospitals</td>
</tr>
<tr>
<td></td>
<td>- Community Health Centres</td>
</tr>
<tr>
<td></td>
<td>- Nursing Homes</td>
</tr>
<tr>
<td></td>
<td>- ‘Special’ (e.g. repatriation/rehabilitation)</td>
</tr>
<tr>
<td>8. Community Support</td>
<td>- Community/Neighbourhood Centres</td>
</tr>
<tr>
<td></td>
<td>- Child Care</td>
</tr>
<tr>
<td></td>
<td>- Maternal and Child Health Centres</td>
</tr>
<tr>
<td></td>
<td>- Senior Citizens</td>
</tr>
<tr>
<td></td>
<td>- Youth Centres/Facilities</td>
</tr>
<tr>
<td>9. Public Order &amp; Safety</td>
<td>- Police &amp; Safety</td>
</tr>
<tr>
<td></td>
<td>- Fire</td>
</tr>
<tr>
<td></td>
<td>- Ambulance</td>
</tr>
<tr>
<td></td>
<td>- Other Support (e.g. rescue)</td>
</tr>
<tr>
<td>10. Recreation/Leisure</td>
<td>- Open Space (active and passive)</td>
</tr>
<tr>
<td></td>
<td>- Art Centres</td>
</tr>
<tr>
<td></td>
<td>- Sports Centres</td>
</tr>
<tr>
<td></td>
<td>- Libraries</td>
</tr>
<tr>
<td></td>
<td>- Places of Assembly (e.g. public theatres, meeting venues)</td>
</tr>
</tbody>
</table>
5.1 Infrastructure Investment - Patterns And Trends

5.1.1 Capital Investment - Private and Public

Australia has traditionally devoted a high share of its national product to investment (compared to other OECD countries). However, in recent times, and in particular when compared to population growth, it is apparent that the growth in Australia's capital stock (as a result of investment) has "been average at best" (EPAC, 1990:5). If investment in infrastructure that enhances productive capacity (rather than just 'keeping up' with previous year's levels or labour force growth) is isolated then real declines can be observed.

However, increasing investment to enhance the capital stock is not an end in itself. Two aspects are critical, given competitive pressures and scarcity concerns. These are:

(i) increasing the efficiency of capital; and

(ii) targeting it to trade exposed industry sectors and major nodes.

Increasing capital efficiency involves ensuring that projects competing for investment are appropriately weighted so that the allocation of capital, and the utilisation of existing capital is maximised. Relevant areas of reform include:

- the much debated tax advantage afforded to owner-occupied housing (reducing this may release domestic savings for more productive uses);
- tax rate distortions in favour of long lived assets (buildings and structures) rather than plant and equipment and other business asset; and
- the environment for competition (using regulation, incentives, the operation of public enterprises, etc.)

Targeting export producing or import-competing sectors, and nodes of business activity, will ensure that the key goal of enhancing private productivity is met. This process is part of efficiently allocating capital but it also recognises that economic welfare is enhanced by facilitating the development of income producing activity, and it is a theme of this report that nodes or clusters of activity may facilitate this.

5.1.2 Infrastructure Expenditure - Capital and Recurrent

Capital and recurrent expenditure by government on infrastructure has the potential to assist in economic development. For example, targeted capital investment in infrastructure, such as roads for the trade-exposed sector of the economy and maintenance expenditure on transport and communication systems ensures that infrastructure continues to provide the service required by industry and business.

In examining patterns and trends in infrastructure expenditure, this analysis is limited by the data categories identified by the Australian Bureau of Statistics. Hence, precise reconciliation with the types of infrastructure identified in Table 5.1 is not possible. However, the ABS categories give a breakdown which gives a useful general distinction between different types of infrastructure. For this analysis the following categories have been included, including sub-categories in some cases:
The Australian Urban System: Trends and Prospects

Education • Health • Fuel and Energy • Transport • Communications • Public Order and Safety • Housing and Community Amenities • Recreation and Culture • Social Security and Welfare

In the last 30 years there have been changes in the structure of infrastructure expenditure (i.e. certain categories have seen increased expenditure, whereas expenditure in other categories has decreased). In addition, the level and mix of infrastructure expenditure in economic, compared to non-economic infrastructure, is also changing over time. However, the distinction between what constitutes economic and non-economic infrastructure is not clear. Key criteria are whether such infrastructure is of direct benefit to the trade exposed sectors of the economy and the relative importance of that type of infrastructure in the cost structures of those sectors.

The most useful way that this can be considered is in the context of a broad, qualitative comment on the value of these various types of infrastructure. In the context of this study the qualitative discussion needs to reflect the three components of the analytical framework. This discussion is set out in Table 5.2.

Thus, an analysis of the patterns and trends associated with expenditure on these types of infrastructure over time, will provide insights into whether our investment and expenditure strategies are focused on the most beneficial types of infrastructure.

5.1.3 Infrastructure Expenditure - Patterns and Trends, 1966 - 1993.

This analysis of infrastructure expenditure is based on gross fixed capital expenditure (GFCE) and final consumption expenditure (FCE) which is compared to total population and GDP. It covers the period 1966-67 to 1992-93 and includes comparison of expenditure patterns in constant 1992-93$ and as a percentage of GDP.

Figure 5.1 compares trends for Australia in FCE and GFCE and also shows the relationship of both to population and GDP ($ values are 1992-93). The second graph in each figure shows Gross Fixed Capital Expenditure and Final Consumption Expenditure by government as a percentage of GDP and again illustrates the drop off in capital expenditure compared to current expenditure.

When these data are disaggregated there are different patterns again. Figures 2 to 16 located in Appendix 4B show the relationships for:

- All Education (Figure 2)
- Tertiary Education (Figure 3)
- Primary and Secondary Education (Figure 4)
- Health (Figure 5)
- Fuel and Energy (Figure 6)

There are defined by ABS as:
Gross fixed capital expenditure: Expenditure on new fixed assets less net sales of second hand assets. The term gross in the title indicates that no account is taken of depreciation in this category.
Gross consumption expenditure: General government's expenditure on provision of goods and services less the value of its output sold to others.


### Table 5.2: Infrastructure Types And Importance To Economic Performance

<table>
<thead>
<tr>
<th>Infrastructure Type</th>
<th>COMPONENTS OF THE ANALYTICAL FRAMEWORK:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Production Costs</td>
</tr>
<tr>
<td></td>
<td>• Creative and Innovative Product Development</td>
</tr>
<tr>
<td></td>
<td>• Cities As Products</td>
</tr>
</tbody>
</table>

| Infrastructure Type                                                                 | Description                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Education (tertiary secondary and primary)                                                                                                                          | A well educated workforce with relevant skills will reduce production costs. On-going training and re-skilling programs are vital to improve productivity. Also a well educated workforce, particularly with higher order qualifications at the tertiary level in fields such as engineering, science, medicine with continuation into research and development leads to new product development. Furthermore, export of education is a $1.1 billion industry for Australia and demand in Asia is likely to continue to grow strongly as the region grows. |
| Health (hospitals, medical research institutions, etc.)                                                                                                             | A quality health regime assists the workforce to remain healthy and be rehabilitated after illness or injury. Also, health infrastructure contributes to the overall well being of a community. High quality health services and facilities attract qualified people and entrepreneurs. Clusters of health related research and development can lead to new products and technology for export. Furthermore, high quality medical research institutions and hospitals provide scope to attract overseas medical visitors for knowledge and technology transfer. |
| Fuel and Energy (electricity generation and gas supply)                                                                                                            | An efficient and low cost source of energy is critical to economic performance. Clusters of energy generation with high level of expertise, such as La trobe Valley and Hunter Valley, can lead to development of new technology which can be exported. High order expertise in energy production in a city or region can also attract energy sector visitors from overseas for knowledge and technology transfer. |
| Communications (and Other Transport)                                                                                                                               | The capacity to communicate effectively (both cost wise and system wise) is critical to efficient and effective operations. Remote to remote communication, which allows interaction to occur between dispersed locations and cost savings to be achieved (e.g. CAD design by telecommunications networking) is of increasing importance to industry. The capacity to interact internationally and with other areas of research and economic activity provides exposure to new ideas and information. Real time communication capacity is of significant importance. The capacity to communicate in both voice, text and data in a form that can be readily manipulated is necessary (e.g. data or text by modem as distinct from communication by letter or fax). If unique systems or new technology are developed, there is scope to attract overseas visitors which leads to knowledge and technology transfer. |
| Housing and Community Amenities (this includes expenditure on sanitation and protection of the environment i.e. sewage, water supply and drainage) | Hydraulic services are generally not a major, direct influence on the cost of production because of universal availability and the fact that they are paid for through municipal rates which are linked to rents. However, if hydraulic services were not provided, then significant costs could be imposed on industry. Also, this form of infrastructure has limited direct influence on the potential of a city or region to develop creative and innovative products but quality living and working environments are attractive places to live. Creative solutions to housing problems may have export value. For example, pilot projects in public housing and land development (e.g. Green Street, ULA, etc.) could be attractive to housing sector visitors and thus lead to knowledge and technology transfer. |
| Recreation and Culture                                                                                                                                              | Of little direct influence on the cost of production. However, investment in major cultural infrastructure and high quality open space and recreation facilities are factors which influence creative and innovative people to develop new ideas and products. Major, high order recreation and cultural features can create nodes of attraction to tourists (e.g. Arts Centre, Melbourne; Opera House, Sydney; Melbourne Cup; Adelaide Arts Festival, etc.). |
| Social Security and Welfare                                                                                                                                           | Some elements of social security are important, more in the area of re-current expenditure (e.g. child care, workcare, etc.) as they potentially assist workers to be more efficient through the support provided. These services increase the flexibility of the workforce. |
The Australian Urban System: Trends and Prospects

The trends of note are:

- A general reduction in gross fixed capital expenditure in most categories (all Figures).
- Dramatic variations in gross fixed capital expenditure in air and water transport (Figure 9 & 10).
- A significant reduction in gross fixed capital expenditure on roads (Figure 8).
- Increases in final consumption expenditure in most categories except air transport, and communications and other transport (all Figures).
- Significant increases in final consumption expenditure in social security and welfare (Figure 15).
- A dramatic increase in expenditure on fuel and energy gross fixed capital expenditure in the late 1970s early 1980s. This is a result of Victoria’s investment in electricity generation (Figure 6).
- A significant decrease in gross fixed capital expenditure for transport and communication and a steady increase in final consumption expenditure (Figure 7).
- A strong peak in gross fixed capital expenditure in housing and community amenities in the mid 1970s with a strong decrease since (Figure 13).

In terms of infrastructure expenditure as a percentage of GDP the following points are noteworthy:

- Gross fixed capital expenditure over all categories of infrastructure has declined from around 8.0 per cent of GDP in 1966-67 to about 4.5 per cent in 1992-93. In the same time, final consumption expenditure has increased from 11.2 per cent to around 16.2 per cent.
- There was a rapid increase in final consumption expenditure on education and health in the early 1970s from around 1.5 per cent each to about 4.5 per cent for education and 3.0 per cent for health. These levels has largely been maintained for health and, although education declined in the late 1980s, the level has tended to increase again this decade.
- Gross fixed capital expenditure on fuel and energy infrastructure has varied significantly over the period from around 1.6 per cent in 1966-67 to a peak of 2.0 per cent in 1982 and has since declined dramatically to 0.4 per cent in 1992-93.
Figure 5.1  Total Infrastructure Expenditure - All Categories Compared to Population and GDP 1966-67 to 1992-93*  

* Commonwealth, State and Territory and Local Governments Combined 

Source: ABS
• Final consumption expenditure in transport and communications has increased from 0.14 per cent in 1966-67 to 1.1 per cent in 1992-93, whereas gross fixed capital expenditure has declined steadily from around 3.2 per cent to just over 2.0 per cent. Within this general category the most notable changes have been:
  - road transport - gross fixed capital expenditure down from 1.6 per cent to 0.8 per cent.
  - air transport - gross fixed capital expenditure shows dramatic changes, particularly since the mid 1980s representing the lumpy nature of this type of infrastructure expenditure.
  - water transport - dramatic changes in gross fixed capital expenditure investment in the 1970's with a steady decline since from a peak in 1972-73 of around 0.36 per cent, to 0.5 per cent in 1992-93.
  - gross fixed capital expenditure in other transport and communication (which comprises mainly communications) has fluctuated significantly within the range of 0.5 per cent to almost 1.1 per cent of GDP, 1992-93 investment was 0.6 per cent of GDP.

• Gross fixed capital expenditure in public order and safety increased steadily over most the period from around 0.6 per cent of GDP in 1966-67 to about 1.8 per cent in 1988-89. Since then it has generally declined to 1.1 per cent in 1992-93.

• There was a dramatic increase in expenditure on gross fixed capital expenditure for housing and community amenities in the 1972-73 to 1974-75 period, peaking at 1.9 per cent of GDP in 1974-75. Since then there has been a general decline to around 0.8 per cent in 1992-93.

• There have been steady increases in both final consumption expenditure and gross fixed capital expenditure in recreation and culture, but there have also been significant fluctuations. Gross fixed capital expenditure over the period has increased from around 0.18 per cent to 0.25 per cent and final consumption expenditure from around 0.30 per cent to 0.59 per cent.

• Final consumption expenditure in social security and welfare has increased steadily and significantly from 0.2 per cent in 1966-67 to 1.0 per cent in 1992-93.

5.2. Transport Investment And Economic Performance

5.2.1 Context

Declining rates of infrastructure investment could well contribute to reduced economic performance because of the link between some areas of infrastructure investment and growth in private sector productivity. These hypotheses are difficult to prove conclusively but it is clear that infrastructure investment has declined substantially compared to measures of economic performance (i.e. GDP) and recurrent expenditure by governments.

Over the past two decades, capital expenditures have accounted for about one quarter of Gross Domestic Product (GDP), having reached thirty per cent during the high growth 1960s. The public sector contributes about 25 per cent of national GDP and owns about one third of the capital stock, including most transport and educational facilities, communications and electricity, gas and water
supply facilities and many public buildings. During the 1960s, public investment accounted for over 8 per cent of GDP, declining since that time to just over 6 per cent of GDP during the 1985-89 period.

EPAC (1990) considered this declining trend in public investment and expected some modest improvement in the 1990s, under such influences as major renewals programs by some public enterprises. This was thought to be consistent with maintenance of a GDP growth rate of about 3 per cent per annum. EPAC stressed the need to make more effective use of available capital.

It is generally recognised, however, that a growth rate of this order will do little to make inroads into Australia's current high levels of unemployment. What can be said about the case for increasing investment in infrastructure as a means of increasing the potential growth rate of the national economy and helping to lower unemployment levels and what role do urban areas have in such a strategy?

5.2.2 Public Investment, Labour Productivity and GDP Growth

A recent report by the Allen Consulting Group Pty Ltd. (Allen et al., 1993) for the Australian Automobile Association has considered this question in detail, particularly as it relates to the question of investment in roads. The report also draws on wider material for its conclusions. The following summary draws heavily on the Allen report and work by Cox (1992).

The effect of net public capital spending on labour productivity growth in Australia and various other countries has been examined by a number of authors, including Cox (1992) and Aschauer (1989), and strong correlations have been identified. These relationships are shown in Figure 5.2.

US economists (Ford and Poiret, 1991; Aschauer, 1989; Attaran and Auclair, 1990) have examined the relationship between productivity, and infrastructure spending and productivity and public capital stocks. These results are illustrated in Figure 5.3 and again suggest strong links are evident in the Ford and Poiret analysis prior to 1950.

![Figure 5.2: The Effect of Net Public Capital Spending in Various Countries](Source: Cox, 1992)
US Productivity Between 1889 and 1987 (Ford and Poret 1991)

Relationship Between Public Capital and Productivity in the US (Aschauer 1989)

The Relationship Between US Productivity and Highway Investment (Attaran and Auclair 1990)

Figure 5.3 Relationships Between Productivity and Public Infrastructure Investment and Public Capital (US) Stocks

Source: Cox 1992
Similar analysis in other OECD countries by Ford and Poiret (1991) and Otto and Voss (1992) also show similar links between infrastructure spending and productivity. These relationships are shown in Figure 5.4.

![Figure 5.4](image-url)

**The Relationship Between Infrastructure Spending and Productivity in UK and Canada (Ford and Poiret 1991a)**

![Figure 5.4](image-url)

**The Relationship Between Infrastructure Spending and Productivity in Australia (Ford and Poiret 1991a)**

![Figure 5.4](image-url)

**Relationship Between Government Capital Investment and Private Total Factor Productivity in Australia (Otto and Voss 1992)**

*Figure 5.4  Relationships Between Productivity and Infrastructure Spending and Government Capital Investment (UK, Canada and Australia)*

Source: Cox 1992
The Allen report also notes that research in the US and elsewhere has found an elasticity of productivity for the US of 0.24 with respect to core infrastructure investment (e.g. roads). The implication is that a one per cent increase in core infrastructure investment leads to an increase of about 0.24 per cent in private sector productivity. The work of Aschauer and Munnell (1990a,b) suggests that the returns from investment in capital assets such as roads can be two to five times greater than the return from the private investment.

There has been considerable debate around the validity if these findings. In particular, the nature of the causal relationship has been subject to much debate: does increased infrastructure investment lead to improved private productivity or is the link the other way around, the gains from rising private productivity growth pulling public investment along? The Industry Commission (1993:172) notes that:

- Critics of Aschauer (such as Aaron, 1990; Winston, 1990; Musgrave, 1990) have charged that the empirical work overstates the impact on productivity by ignoring the other factors and is dominated by trend factors; the direction of causation between public investment and output growth is unclear; and that even if historical empirical relationships were estimated correctly, they provide no clear indications of current policy.

- A recent OECD study (Ford and Poiret, 1991), revisited the Aschauer hypothesis using the same methodology, but included data for other periods in the United States and for several other OECD countries, including Australia. Its results provided little support for the hypothesis. The OECD study found that for Australia, there was no significant relationship between infrastructure spending and productivity. Indeed, the results appeared to indicate that infrastructure investment lagged total factor productivity.

- Munnell (1990) examined the impact of public infrastructure on output, employment growth and private investment at the state and regional level in the United States in order to ascertain whether variations in public infrastructure by States had any impact on State-by-State employment growth. Munnell covered 48 states over the period 1970 to 1986 and concluded that those which had invested more in infrastructure tended to have greater output, more private investment and more employment growth. Her work indicated that public investment comes before the pick up in economic activity and serves as a base for economic performance.

- Barro (1989) carried out cross-country analysis of post-war economic growth. His study of 72 countries found that successful countries tended to have large public infrastructure investment shares of GDP. However, as the Economic Planning Advisory Council (EPAC, 1990) pointed out, it is not clear whether a large public investment share makes countries successful or is just a feature of countries which have been successful for other reasons.

- EPAC (1990) looked at the level of public infrastructure spending in Australia and its relationship with private productivity. The study found that while the private rate of return and public infrastructure moved in tandem until the mid-1980s, with the former lagging the latter by a few years, in the late-1980s the private rate of return recovered to the levels of the early-1970s while public infrastructure continued to decline.

The Allen Group's (1993) review of much of this work supports the leading role of public infrastructure and its relationship with productivity. This report examined the relationship between road investment in Australia and growth in Australian private sector productivity and found similar elasticity values to the Aschauer work (0.24 per cent). The conclusion from their analysis is that investment in road infrastructure yields very high returns, the 0.24 per cent elasticity implying a one-off $1 billion road investment increase would produce a gross recurring annual benefit of $940 million. The economic impacts of funding the infrastructure would need to be deducted to reach a net impact.
5.2.3 Increased Road Investment

Further analysis by the Allen group looked in detail at the prospective macro-economic impacts of increased investment in particular categories of road, from national highways, through rural and urban arterials to rural and urban local roads. The conclusions from this analysis indicated that the GDP gains from a one-off $1 billion increase in urban arterial roads expenditure (equivalent to 0.26 per cent of GDP, in particular, would be an on-going annual increase of about 0.2 per cent in GDP (strictly speaking the Allen return is calculated as a year 10 rate of return). Comparable results from the expenditure of an additional $1 billion on other road types were:

- urban freeways + 0.15 per cent annual increase in GDP;
- rural national roads and arterials + 0.07 per cent GDP increase; and,
- urban and rural local roads + 0.03 per cent GDP increase.

The latter result was found to be a break-even result in economic terms, whereas the result for urban arterials was argued to indicate a benefit cost-ratio of the order of 10. All of these returns were calculated including the economic effects of a assumed tax increase of $1 billion to fund required expenditure increase.

The significance of many business costs which are directly influenced by infrastructure availability and quality supports this type of finding on the value of infrastructure spending. For example, road transport costs typically account for between two and six per cent of the total input costs of manufactured products, and average about 7 per cent of the cost of agricultural products. These are significant cost shares.

Over the period from 1967 to 1991, the value of the Australian net road stock declined from about 17.5 per cent of GDP to just over 11 per cent. This decline occurred because road spending barely increased in real terms over the period. At the same time, road traffic volumes increased strongly, at about 3 per cent p.a. for car travel and about 7 per cent p.a. for tonne kilometres of road freight. Such additions to demand for the use of facilities, on which expenditure is barely growing in real terms, can be expected (after a time) to lead to increasing user costs and declining service standards.

Urban areas were particularly affected by these trends, urban arterial road spending falling in real terms. Recent studies on the costs of urban road congestion (costed at about $2 billion annually in both Sydney and Melbourne) illustrate the resulting cost problems, about half these congestion costs being borne by business (Stanley and Ogden, 1993). In light of such trends, it is not surprising that the Allen study should find that urban arterial roads show the highest economic returns from marginal expenditure increases.

It is a moot point whether sustaining an increase in road expenditure over the long terms would continue to show macro economic gains significantly larger than the estimated direct gains to road users. However, it seems clear that, in the face of sustained growth of traffic well ahead of growth in expenditure, returns for sustained expenditure increases over a number of years should be high.

The findings of the Allen work are complemented by results of an unpublished analysis undertaken by John Stanley and Associates Pty Ltd. for Vicroads, on the prospective macro-economic benefits of the Western and Southern Bypasses of Melbourne. That analysis showed that, in the early years after route opening, benefits to the wider economy would be expected to be lower than those directly accruing to road users. This result reflects the tendency for some benefits to leak offshore, through increased imports. Over time, however, the gains in GDP grow to the point where they exceed the direct user benefits. This is a consequence of the long term impacts of the transport cost reductions improving business competitiveness of the trade-exposed sector, allowing it to increase its exports.
performance. The Stanley analysis, using the National Institute of Economic and Industry Research IMP model, traced the flow of gains over time. The Allen work was of benefits at a single point in time (ten years of gains project completion). In both cases, however, the tendency for project macro-economic benefits to be a larger than is estimated by conventional benefit assessments emerged.

These studies provide strong support for the notion that increased investment in road infrastructure would have strong positive macro-economic benefits. The road studies are cited in this report because they are the most recent of which the authors are aware. Similar findings may apply to other sectors, although the experience of tight funding of roads over the past to decades suggests that this particular sector may hold opportunities which are better than many others.

5.2.4 Investment in Rail Infrastructure

The Allen group’s (1993) study of Land Transport Infrastructure - Maximising the Contribution to Economic Growth, mainly examined the road transport system but included some consideration of rail infrastructure. The key conclusions are:

- Information available from rail authorities indicates that “... in many cases, returns on investment in urban rail significantly depend on benefits to non-rail users. These benefits were identified as taking the form of benefits to road users or through urban consolidation effects” (Allen et al., 1993:91).

- “A BCR of 2 was reported (at a discount rate of 7 per cent) on an investment of 1990 $5.5 billion in the now disbanded VFT project” (VFT Consortium 1993, cited in Allen et al., 1993:91). This excluded non-user benefits such as reduced airport and road user costs.

- Evaluation of a rail link between Sydney airport and Central Sydney (Denis Johnston and Associates 1993, cited in Allen et al., 1993:91) “…identified a BCR of 1.64 (discount rate of 7 per cent) on expenditure of $600 million (in present value terms). The evaluation included consideration of factors such as direct effects on rail systems revenues and costs, urban consolidation benefits, environmental benefits and road user benefits”.

- The Victoria Public Transport Corporation’s evaluations of the introduction of double deck trains (PTC 1989) and the electrification of the Sydenham rail line (PTC 1990) show the importance of returns to non-rail users from investment in rail systems. For double deck trains an investment of $413 million (1989$) gave a total high car trip scenario benefit of $1403 million and a low car trip scenario benefit of $656 million. The electrification of Sydenham rail line gave an annual benefit of $7,420 million (1990$) from an investment of $3,700 million. The results are shown in Appendix 4C, Figure 20.

- The Industry Commission (1991) investigated the effects of applying best international practice to the Australian rail system. The results illustrated that “savings of $2,200 million work their way through the economy and eventually bring welfare benefits of $4,400 million or 1.5 per cent of GDP, that is a value added multiplier affect of 2” (Cox 1992:32).

5.2.5 General Conclusion

While there are technical doubts about the strength of the findings in the work of Aschauer and others into the links between public infrastructure investments and the growth of private sector productivity, this brief discussion has demonstrated that, where investment is targeted at reducing business input
costs which are a significant part of the total business cost structure, substantial business benefits should be expected from the investment. The weight of evidence supports the view that the benefits concerned flow widely through the economy, to the point that the end benefit level is larger than the direct user or beneficiary gains resulting from the investment. The case for roads (particularly those serving freight flows) is strong because of two decades of relative neglect. It may be less true of sectors such as electricity generation, where capacity expansion of a major scale has occurred in more recent times.

Investment in particular types of infrastructure (e.g. telecommunications, transport and higher education) will help create the necessary conditions for the development of innovative and creative milieux of new growth development (e.g. high technology precincts). If this is linked with other macro and micro economic policy initiatives such as tariff reductions, increased education spending, support for research and development, and initiatives which help increase business networking and diffusion of technology the potential opportunities will be more likely to be realised.

The main Government policy tools for infrastructure planning and management are investment, pricing, regulation and administration. Economic benefits can flow from investment, more efficient and effective use can flow from proper pricing, regulation can assist in managing resource use where full pricing may be politically unacceptable and more efficient administration can achieve cost savings with consequent flow on effects from reallocation of savings to other production sectors of the economy.

5.3 Telecommunications Infrastructure and Influence on Urban Form

There is a degree of conventional wisdom which suggests that advances in telecommunications capacity and capability will allow more and more people to become more dispersed in their employment locations and ultimately for most people to live and work in the same location by teleworking and communicating with others on a real time basis. However, this new telecommunications technology also appears to be creating some counteracting forces which work in favour of centralised urban systems.

Provision (and therefore take-up) of advanced, leading edge telecommunications technology occurs first in the major urban centres which have the highest volume of potential demand and the greatest capacity to pay for the necessary networks. This tends to reinforce any existing locational advantages of these areas created by their telecommunications capacity and services.

These advantages are further reinforced by the rapidly developing, exponential advances in capacity and services. Because leading edge centres of demand receive new technology first, they are able to widen the gap between themselves and lower order centres of demand. By the time many lower order centres begin receiving today's technology, it is likely to be superseded by the next generation of technology which is already being installed in the leading edge centres and congestion is not necessarily an inhibiting factor to additional development.

A feature which distinguishes telecommunications infrastructure from other forms of infrastructure (such as roads, rail, hydraulic services) and reinforces major centre/secondary centre differences is that it has a very low requirement for scarce urban space. This contrasts with the space requirements of the other forms of urban infrastructure. Thus, as the need for increased capacity arises it is relatively simple to insert the new technology in existing major centres.
These factors can be summarised as:

- The high cost of new telecommunications technology means it is first provided in high demand/high market potential areas (i.e. our major cities). These become leading edge centres of demand.

- The capacity of new telecommunications technology is exponentially increasing which means that the leading edge centres of demand, which first receive new technology, keep widening the gap.

- The capacity to universally provide new telecommunications technology does not keep pace with the capacity to develop new technology and this again tends to widen the gap.

- The limited space demands of telecommunications technology (as distinct from other urban infrastructure which has much greater space demands) means that communications congestion can more readily be overcome in major centres and does not represent the same constraint that congestion of other infrastructure represents.

However, the weight of these influences on urban form and development needs to be considered. There are two schools of thought and hence two questions to be answered:

- telecommunications are a key determinant of business/industry locational decision making and are a major impact on whether cities or regions attract or lose business;

- telecommunications is a necessary but not sufficient condition for business/industry locational decision making and therefore does not have major impact on regional development.

Surveys of industry indicate that communication issues tend to rate low in relocation decision making (Loveland, 1990). Newton (1994) has established the “telecommunications services provide a necessary but not sufficient condition for a region’s economic well being”. One of the main reasons appears to be the limited utilisation of new technology. Newton suggests that this is a function of education and that investment in education and training is “a vital ingredient in the overall recipe for development in Australia”.

If this scenario of increased knowledge and understanding were to eventuate, it may well mean that the apparent unimportance of telecommunications capacity to locational decision making could be replaced by it being given a much higher priority. Such an outcome could well reinforce the trends now evident for leading edge centres to further increase their relative attractiveness.

There is now some evidence that telecommunications capacity is an important factor in locational decision making of businesses. The McKinsey report (1994:50-51) shows that 55 per cent of businesses cite telecommunications as a significant factor in choice of location. This was the highest response rate across all the infrastructure types considered. For exporting companies the response was higher at 60 per cent.

However, when asked to nominate what infrastructure is considered to be a constraint to growth, only 3 per cent of respondents rated infrastructure (including telecommunications) as a real constraint to growth. The high positive response to the question of telecommunications is likely to be very much a function of the cost of STD calls for regional locations compared to metropolitan locations.

The main conclusion that can be drawn from this analysis is that communications infrastructure will increasingly influence the form and economic performance capacity of our cites and regions.
Furthermore, the trends in communications technology development and provision are tending to favour existing centres of agglomerative thus enforcing their attractiveness particularly for higher order economic activities (e.g. company headquarters). Conversely, communications technology allows some lower order services, such as data processing, to be dispersed and thus employment activity can follow people to locations closer to where they live.

A more detailed discussion of the influence of telecommunications is included in Appendix 4D.

5.4 Air and Sea Transport Trends

The importance of Australia’s air and sea transport infrastructure will increase as we expand our exports and increasingly become part of the global economy. The value of resource consumption by transport mode has been broadly determined by Allen and associates (1993) and is detailed in Table 5.3. In interpreting these figures, the broad, indicative nature of the estimates shown should be noted, as they have been based on a wide range of data.

Table 5.3: Resource Consumption by Transport Mode

<table>
<thead>
<tr>
<th>ROAD</th>
<th>AIR</th>
<th>SEA</th>
<th>RAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accident Costs</td>
<td>International Passengers</td>
<td>International Freight</td>
<td>Operating Deficit</td>
</tr>
<tr>
<td>$7.6B</td>
<td>$10.2B</td>
<td>$7.5B</td>
<td>$2.6B</td>
</tr>
<tr>
<td>Spending on Roads</td>
<td>International Freight</td>
<td>Port Costs</td>
<td>Freight Revenue</td>
</tr>
<tr>
<td>$5.8B</td>
<td>$3.5B</td>
<td>$3B</td>
<td>$2.7B</td>
</tr>
<tr>
<td>Externalities</td>
<td>Domestic Passengers</td>
<td>Domestic Freight</td>
<td>Passenger Revenue</td>
</tr>
<tr>
<td>$1.3B</td>
<td>$1B</td>
<td>$0.9B</td>
<td>$1B</td>
</tr>
<tr>
<td>Business User Costs</td>
<td>Domestic Freight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$42.5B</td>
<td>$0.1B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private User Costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$22.1B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL $79.3B</td>
<td>TOTAL $13.8B</td>
<td>TOTAL $11.4B</td>
<td>TOTAL $5.3B</td>
</tr>
</tbody>
</table>

Source: Allen et al. (1993)

It is important to note the relative sizes of the air and sea international freight markets (in dollar terms). Air international freight has a value of $3.5 billion compared to a value of sea international freight of $7.5 billion. This compares with a total international air freight export tonnage of approximately 240,000 tonnes (in 1992-93) compared to total sea export tonnes of 280,000,000 tonnes (BTCE, 1994). Thus, total export tonnage is over 1000 times greater by sea, but the value of sea exports is only approximately twice as great. This confirms, and quantifies, the fact that air freight is used for higher value commodities for which premium rates are paid.
As the nature of Australian Industry changes, with less emphasis on primary product exports and more emphasis on value-added export products, one could expect that the importance of air freight will increase (both in quality and value of exports). The annual rates of growth of the various international freight transport modes over the past few years (1988-93) are approximately as follows (BTCE, 1994):

<table>
<thead>
<tr>
<th>Mode</th>
<th>Annual Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sea Exports</td>
<td>5.5 per cent p.a.</td>
</tr>
<tr>
<td>Air Exports</td>
<td>9.2 per cent p.a.</td>
</tr>
<tr>
<td>Air Imports</td>
<td>4.4 per cent p.a.</td>
</tr>
</tbody>
</table>

It can be seen that air exports have been growing at a faster rate than sea exports, albeit from a smaller base level. However, the total volume of air exports is relatively small. Indeed, it is not large enough to support a dedicated air freight fleet, with most air freight being carried in the bellies of international passenger aircraft. Thus, the international air freight capacity is largely dictated by the patterns of arrival and departure of international air passenger aircraft.

As noted in O'Connor et al. (1993), international air passenger arrivals and departures are moving away from the major Australian cities of Sydney and Melbourne, which had 77 per cent of inbound passengers in 1981 and only 66 per cent in 1992, and towards the northern cities of Brisbane and Cairns. Thus the air passenger demand and the air freight demand patterns are diverging. Continuation of this divergence may see a restriction on the growth of air freight, unless effective connections can be made between the centres of the passenger and freight demand. This may require investment in either land-based or domestic air-based freight systems to move goods from the centres of production to the international airports which are servicing the growing international passenger movements.

It should be realised, however, that irrespective of the changes in air and sea freight, they will still be dwarfed by the size of the road freight task in Australia. It would therefore appear that greater benefits can be obtained by concentrating on improvements to urban infrastructure which would increase accessibility for moving freight between domestic origins and destinations in terms of linking the ports and airports with domestic origins and destinations. These improvements in accessibility could be obtained either by improving the ground transport system or by changing the land-use systems associated with ports, airports and industry. For example, the US National Council for Urban Economic Development (1989) reviewed the economic impacts of airports and concluded that “the overwhelming majority of studies examining the impact of airports on local or regional economic development concluded that they exert quite a positive economic impact”. However, they then proceed to warn of the limitations in these studies, including the political nature of many of these studies, and finally conclude that “it is not altogether clear whether airports lead or follow economic growth” in the region. This same proviso will be noted later with respect to investment in road infrastructure.

The NCUED report (1989) reviewed the various options with airport development and concluded that two major elements were integrated land-use development in the immediate vicinity of new airport developments, including major industrial parks, and the development of efficient ground transport systems to link existing areas of industrial development with new and existing airports. In the Australian context, this would mean new industrial development in the south-east area of Melbourne near the proposed south-east airport near Cranbourne, and in the Badgery’s Creek area of Sydney. It would also mean improved ground transport between the south-east and western suburbs of Melbourne and the docks and airport at Tullamarine. In Sydney, it would mean connections between Mascot Airport, Port Botany, the newly developing industrial and terminal areas around Chullora and Enfield and the industrial areas in the south-west and far-western suburbs of Sydney.
With respect to airport, and port, development, however, the issue of systems boundaries becomes very important. Thus, improvements to the Melbourne or Sydney airport systems will have greater impacts on competition between the two cities for attracting business and economic development than it will have on the overall economic developments for Australia, unless the planning and staging of these developments is done in a coordinated and complementary fashion.

However, given the nature of the motivations behind airport development in each of the states, it is unlikely that this will occur. Therefore, national economic benefits from airport, or port, development in the states will be very definitely a second-order effect.

The key conclusions in regard to airport and harbour infrastructure is the increasing need to develop and maintain investment in these areas if Australia is to further increase its export capacity. A potential opportunity which could be explored is the development of export oriented industries in close proximity to airports, particularly new airports such as the Badgery’s Creek and the mooted south-east airport at Melbourne’s fringe.

5.5 Infrastructure and Economic Benefits

5.5.1 Reduced Production Costs

The most critical infrastructure are transport, energy, communications and education. Hydraulic services and solid waste disposal are also important, particularly to industrial activity.

This has been the main focus of neo-classical economic models of industrial development but as Hall (1990) says "traditional neo-classical Weberian theory has clear limitations: it does not apply well to industries where transportation costs do not loom large; and being static it cannot address the dynamics of development". However, this does not mean that these more traditional factors are unimportant. The Allen Group’s (1993) study of road investment illustrates that a one-off investment of $1 billion in roads would produce a recurring annual benefits of $940 million. Given that road transport costs typically account for between two and six per cent of the total input costs of manufactured products, and average about seven per cent of agriculture costs, this clearly shows that a more efficient transport system can contribute significantly to reduced production costs.

An example of the potential cost savings to business through utilisation of advanced telecommunications facilities is illustrated by a feasibility analysis of networking of CAD between related consulting companies in different locations in the architecture, engineering and construction sectors. Using three examples of office buildings with project costs of 1, 10 and 100 million dollars and different scenarios for project completion due to time saved through the wide area CAD network, the fee savings were estimated at between 2.5 per cent and 8 per cent and for construction costs savings in the order of 3 per cent to 10 per cent were estimated. Savings on holding charges were negligible ranging between 0.2 per cent and 2.6 per cent. (Newton et al., 1994).

5.5.2 Innovation and Creative Development in Industry

The most critical infrastructure are global communication capacity, international transport capability, media education (particularly research and development oriented), higher order health facilities (i.e. major public/research hospitals), recreation and culture, public order and safety and public urban design and amenity.
Stohr (cited in Hall, 1990) believes that the concept of synergy is critical to innovative growth, particularly the recognition that monocausal explanations (such as transport) do not adequately explain modern growing regions. Stohr suggests that the key components of innovative growth areas are "... a range of educational and training institutions, a concentration of R&D, well developed technological and management consulting, risk capital, and locally rooted decision-making functions" (Hall, 1900:15). The significance of communications both within the region (including close physical proximity) and externally beyond the region is "critical to creative milieux" (Andersson, cited in Hall, 1990:16).

Andersson in his concept of the creative city concludes that creative regional milieux have six basic prerequisites:

- "a diverse milieu
- a sound financial basis but without tight regulation
- an imbalance between experienced need and actual opportunities
- basic original knowledge and competence.
- structural instability: a genuine uncertainty about the future within the general scientific and technical environment.
- good internal and external possibilities for personal transport and communications" (Andersson cited in Hall, 1990:17)

Again, transport and communications infrastructure is seen as being vitally important to innovative and creative regions. So are decisions relating to the diversity of media ownership and control, and investment decisions regarding cultural institutions (museum, performing arts centre etc.) As discovered by Coopers and Lybrand in their review of the strategic strengths and weaknesses of London as a world city, it is important to ‘fuse’ cultural expression and economic policy.

From the one hundred or so interviews and discussions we have held with representatives of the cultural sector in London and elsewhere for this study, we have found a difference of perception on the role of the cultural sector. Other world cities appear to subscribe to the view that culture creates wealth, whereas in London the prevalent view is that wealth creates culture. In other words, arts and culture are regarded as a social window-dressing, the sector in which investment is considered once all else has been covered. As a result, there is a persistent failure to enable the cultural sector to make its full potential contribution to a creative and innovative economy (Kennedy, 1991:44).

A small scale Australian example of an innovative and creative milieu of computer service companies is provided by the TCG group at Chippendale in inner Sydney (Mathews, 1992). A small group of firms have been networking with each and with the outside world to become the largest privately owned computer services operation in Australia. This group, in 1991 comprised 24 companies, with an annual turnover of $43 million and 200 employees. Over the previous 10 years, the group doubled in size - a modest growth rate within the growing informative technology market. However, the important point is that “over this time not one of the member companies has failed - in stark contrast with the usual experience when 70 per cent of small businesses fail within the five years of being established” (Matthews, 1992:12). This achievement comes from the mutual support that the network provides. It is important also, that the network is still exposed to outside competition; when tendering to one another, external tenders are also sought and, if more competitive, are taken.

5.5.3 Cities and Regions as Tourist Attractions

Special components of infrastructure (e.g. Melbourne’s W-Class trams, Botanic Gardens, Art Centre; Sydney’s ferries, Opera House, Harbour Bridge; Canberra’s Lake Burley Griffin and the planned central precinct with Parliament House, High Court, National Gallery, War Memorial and Civic
Centre) add to and create value for these cities as tourist attractions. When combined with natural or cultural attributes such as Sydney Harbour, Melbourne's multi-cultural restaurant industry or Adelaide's arts profile, the contributive value of such infrastructure is further enhanced. Thus cities which have a strong cultural signature will be strategically placed to compete successfully in the global tourism market. But achievement of such a signature is not just a matter of identifying and promoting key attractions like festivals of the arts of particular historic sites or buildings. An often expressed view is that such anchor attractions are susceptible to fatigue, especially if presented out of context and with no sense of transition for the visitor from their own culture to the host culture.

Kelly and Dixon (1991) suggest that excessive concentration on individual sites or events runs the risk of Disneyfication or museumisation. They also make a strong case that the nurturing of minor attractions rooted in the day to day life of the region, i.e. sideline tourism, enables significantly improved retention and spending rates for visitors initially motivated by some key attractor.

Thus, key heritage assets need to be presented as highlights of a continuum of cultural expression embracing the total life of the city or region. As the built form of the city is the most accessible form of its life for the visitor, it is difficult to create the supportive context for major cultural attractions if public spaces and urban design generally fail to convey a consistent theme. So the design quality of infrastructure in the public domain - parks, boulevards, major public buildings, square etc. has an important role in cultural tourism development as well as in serving the needs of the resident population.

5.5.4 General Conclusion

In regard to private sector capital investment, Australia's rate of savings is very poor domestically. We therefore depend on overseas borrowings to finance investment. The need to compete on the international market for these funds means that domestic interest rates remain high. The underlying reason is that our investment patterns are towards non-productive capital investment (e.g. homes) as distinct from productive capital investment such as transport, industry, communications, etc.

Infrastructure expenditure by governments contributes significantly to the economic well being of cities and regions and is essential for growth and development. However, the tendency over the last 30 years has been for a decline in capital expenditure, on urban infrastructure and an increase in consumption expenditure. The most notable decline in capital expenditure has been in road transport infrastructure which is a major factor affecting the trade-exposed sectors of the economy.

Based on the analysis of trends and the conceptual analysis in Section 5.1.2, urban policy initiatives for the development of creative and innovative cities or regions (or clusters or nodes) should focus on infrastructure of strategic significance: education; communications; recreation and culture. This can then flow on to enhance the value of such locations as tourist attractions in their own right as the collective value of a range of urban components creates a city product which has a collective value beyond the sum of its parts. This collective effect involves other factors such as history, multi-cultural character, socio-economic profile and urban design and architecture.

In regard to influence on the costs of production, urban policy initiatives need to concentrate on infrastructure expenditure that reduces the costs and increases the efficiency of the trade exposed sectors of the economy: transport; communications; fuel and energy; education and to a certain extent those components of social security and welfare and housing and community amenities which

---

2 A consequential benefit is the attractiveness of such places to mobile businesses through lifestyle benefits to owners and managers.
influence directly economic performance and capability (e.g. child care, hydraulic services, industrial waste disposal, etc.).

In addition, expenditure on infrastructure which maintains and enhances public well being: health; public order and safety is also essential to economic performance. Expenditure on health research and development can lead to major economic development through export of leading edge knowledge and technology. This research and development factor also applies in the fields of: transport; education; communications; and, fuel and energy.
6. SOCIAL STRUCTURE

6.1 Introduction

The study of social inequality encompasses the housing and labour market opportunities of households and individuals, and access to the services they require. The important conceptual point is that the characteristic of one's location contributes, along with earned wages and other monetary items to one's real income. In this context however it is important to recognise the distinction between areas that are disadvantaged in terms of their supply of services, housing and labour market opportunities, and concentrations of individuals or households that suffer disadvantage in terms of their capacity to overcome barriers to economic and social choice. These do not always coincide.

A concern to foster greater economic efficiency competitiveness and productivity raises two questions in the context of social structure and the degree of spatial differentiation in social characteristics. The first is, to what extent will the restructuring process and policy measures to achieve greater competitive advantage act to exacerbate social divisions and thus conflict with other government priorities relating to a concern for social justice. The second is the degree to which social polarisation acts as an impedance to restructuring by reducing the productivity of enterprises and local populations, or by reducing the attractiveness of particular regions for investment by footloose activities.

This chapter is concerned to summarise some of the current trends and issues in social differentiation at a variety of scales and to comment on the relationship between these trends and their role in aiding or hindering the economic restructuring process. It is based on a much fuller account in Appendix 5.

6.2 The Measure of Social Disparities

The social character of a population is a complex amalgam of different dimensions of life chances. These complexities arise from the following:

- Socio-economic disparities 'on the ground' in spaces arise from combinations of features of those spaces (principally housing and labour market opportunities) as well as the characteristics of individuals living in those spaces (like income characteristics, or car ownership which affects one's capacity to move beyond the constraints of local housing and services opportunities). So, single measures like income distribution, or household types, indicate little on their own about the social disadvantage experienced by people in particular spaces.

- The growing international literature that alleges increasing social and economic polarisation in major world cities (often using New York and London as examples), the growth of underclasses and the disappearance of the middle class, is a confusing empirical discussion (Castells, 1989; Thorns, 1992; Fainstein, Gordon and Harloe, 1992). It records complexity and change in urban class groupings, generally seeking an explanation for this in economic restructuring - a move to an information and services economy and away from manufacturing industry. But it poses few indicators to help resolve the question of whether in the last couple of decades socio-economic differentiation has become more pronounced, and if so in and between what spaces. Furthermore, the interpretations made of the data presented vary. We are cautioned not to read off particular social disparities from an overall view of global economic restructuring (Thorns, 1992:244).

- The literature about social and economic well-being measures household structures and income, as well as the socio-economic characteristics of individuals making up those households. This is sensible - comparing households with two adult earners and households with no adult earners and
many small children, for instance, is more meaningful in assessing structures of advantage and
disadvantage than just totalling the numbers of individuals earning or not. However, households
and individuals with characteristics other than income need also to be considered - for example life
cycle, gender, and non-English speaking background, are dimensions of people and households
with implications for social disparity.

6.3 Trends in Social Polarisation

Social characteristics can be compared across a range of scales. Each has its own utility in providing the
context for analysis and interpretation. But it is at the level at which local housing and labour markets
operate which gives the greatest insights in so far as it is at this level that encompasses the experience of
individuals and households in their daily lives.

It is in specific localities within cities, or in particular regions where the impact of restructuring are most
acutely felt. To be able to respond in terms of local adjustments, there must be an understanding of the
forces underlying change and the nature of local development dynamics through which they act. Polarised
and unequal cities are not inevitable and indeed could be an impediment to more competitive, productive
and innovative environments.

6.3.1 Income Differentials

Work by EPAC (1991) has demonstrated only minor income differences exist between states and
territories, although these differentials were increasing during the 1980s. More significantly the proportion
of households living in poverty, after housing costs, grew in 1980s particularly in New South Wales and
Queensland. Maher and associates (1992) found considerable income differences between cities, with low
income households (below <$20,000 in 1986) making up more than half of all households in Hobart and
Adelaide but only a quarter in Canberra.

Within cities there is evidence that income disparities are increasing as well. Unpublished work by the
Australian Institute of Family Studies found that the incomes of families with dependent children diverged
between local government areas in Melbourne and Sydney between 1986 and 1991.

Table 6.1 Average Family Income: Melbourne and Sydney

<table>
<thead>
<tr>
<th></th>
<th>MELBOURNE</th>
<th>SYDNEY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Family Income</td>
<td>$39,440</td>
<td>$41,270</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>$8,380</td>
<td>$7,490</td>
</tr>
<tr>
<td>Standard Deviation relative to average</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1988</td>
<td>13.3</td>
<td>15.4</td>
</tr>
<tr>
<td>1991</td>
<td>16.2</td>
<td>18.1</td>
</tr>
<tr>
<td>Change 1986 to 1991</td>
<td>21%</td>
<td>18%</td>
</tr>
</tbody>
</table>

A similar picture is given from Australian Taxation statistics on taxable income. Taking taxable income by postcode, and expressing it as a proportion of the state average it was found that:

- the differences between the highest and lowest areas with respect to taxable income were greatest in Sydney and Melbourne. In Sydney the difference in 1991/2 was nearly three times.

- the degree of difference between the highest and lowest had increased. In Melbourne the highest income area went from 1.89 to 2.05 times the state average, while the lowest income area dropped from 1.01 to 0.85 times the state average.

- non-metropolitan differences are most marked at the lower end of the distribution where taxable income is little more than half the state average.

### 6.3.2 Unemployment

Unemployment is the one single indicator which best capture the impact of the recession and restructuring. The uneven spatial impact of unemployment is evident at the state, capital city, and local level.

The uneven impact is due to the mix of economic activity in each area, and the extent to which some areas are more dependent on declining than growing economic activities. Those areas heavily dependent on manufacturing (Victoria 12.4 per cent underemployed and South Australia (12.0) at a state level; Newcastle (16.0), Wollongong (14.3) at a city scale; Richmond-Tweed-Mid North Coast (18.0) at a regional non-metropolitan level, and Fairfield Liverpool (20.5) and the north-western region of Melbourne (17.0) all demonstrate the way unemployment concentrates on specific locations.

<table>
<thead>
<tr>
<th>Table 6.2 Unemployment Rate: Three Months to March 1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Rate</td>
</tr>
<tr>
<td>-------------</td>
</tr>
<tr>
<td>1. National</td>
</tr>
<tr>
<td>Australia</td>
</tr>
<tr>
<td>2. State</td>
</tr>
<tr>
<td>NSW</td>
</tr>
<tr>
<td>Vic</td>
</tr>
<tr>
<td>Qld</td>
</tr>
<tr>
<td>SA</td>
</tr>
<tr>
<td>WA</td>
</tr>
<tr>
<td>NT</td>
</tr>
<tr>
<td>ACT</td>
</tr>
<tr>
<td>TAS</td>
</tr>
<tr>
<td>3. Capital Cities</td>
</tr>
<tr>
<td>Sydney</td>
</tr>
<tr>
<td>Melbourne</td>
</tr>
<tr>
<td>Brisbane</td>
</tr>
<tr>
<td>Adelaide</td>
</tr>
<tr>
<td>Perth</td>
</tr>
<tr>
<td>Hobart</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
</tr>
<tr>
<td><strong>4. Remainder of States</strong></td>
</tr>
<tr>
<td>Rest of NSW</td>
</tr>
<tr>
<td>Hunter</td>
</tr>
<tr>
<td>Newcastle District</td>
</tr>
<tr>
<td>Illawarra and SE</td>
</tr>
<tr>
<td>Illawarra</td>
</tr>
<tr>
<td>Wollongong</td>
</tr>
<tr>
<td>Richmond - Tweed/Mid</td>
</tr>
<tr>
<td>North Coast</td>
</tr>
<tr>
<td>Northern/NW/Central W</td>
</tr>
<tr>
<td>Murray and Murrumbidgee</td>
</tr>
<tr>
<td>Rest of Victoria</td>
</tr>
<tr>
<td>Barwon - Western</td>
</tr>
<tr>
<td>Central Highlands - Wimmera</td>
</tr>
<tr>
<td>Loddon - Campaspe/Mallee</td>
</tr>
<tr>
<td>Goulburn - Ovens - Murray</td>
</tr>
<tr>
<td>Gippsland</td>
</tr>
<tr>
<td>Rest of Queensland</td>
</tr>
<tr>
<td>South &amp; East Moreton</td>
</tr>
<tr>
<td>North &amp; West Moreton</td>
</tr>
<tr>
<td>Wide Bay - Burnett</td>
</tr>
<tr>
<td>Mackay - Fitzroy - Central W</td>
</tr>
<tr>
<td>Darling Downs - SW</td>
</tr>
<tr>
<td>Northern - NW</td>
</tr>
<tr>
<td>Far North</td>
</tr>
<tr>
<td>Rest of South Australia</td>
</tr>
<tr>
<td>Southern &amp; Eastern</td>
</tr>
<tr>
<td>Northern &amp; Western</td>
</tr>
<tr>
<td>Rest of Western Australia</td>
</tr>
<tr>
<td>Lower Western</td>
</tr>
<tr>
<td>Remainder WA</td>
</tr>
<tr>
<td><strong>Rest of Tasmania</strong></td>
</tr>
<tr>
<td>Northern</td>
</tr>
<tr>
<td>Mersey - Lycell</td>
</tr>
<tr>
<td><strong>5. Submetropolitan</strong></td>
</tr>
<tr>
<td>Sydney</td>
</tr>
<tr>
<td>Inner &amp; Inner west</td>
</tr>
<tr>
<td>Inner Sydney</td>
</tr>
<tr>
<td>Eastern Suburbs</td>
</tr>
<tr>
<td>St George - Sutherland</td>
</tr>
<tr>
<td>Canterbury - Bankstown</td>
</tr>
<tr>
<td>Fairfield - Liverpool &amp; SW</td>
</tr>
<tr>
<td>Fairfield - Liverpool</td>
</tr>
<tr>
<td>Central West Sydney</td>
</tr>
<tr>
<td>Outer Western</td>
</tr>
<tr>
<td>Blacktown - Baulkham Hills</td>
</tr>
<tr>
<td>Lower North Sydney</td>
</tr>
<tr>
<td>Hornsby</td>
</tr>
<tr>
<td>Northern Beaches</td>
</tr>
<tr>
<td>Gosford - Wyong</td>
</tr>
</tbody>
</table>
Youth unemployment is much higher than the general level and nationally is around one-third of the teenage workforce. In isolated areas it is closer to half. The worst situations are in non-metropolitan regions (Gippsland has 62.1 per cent of teenagers unemployed) with Wollongong (46.9) and Richmond-Tweed (46.8) also very high. Within metropolitan regions the inner and western suburbs of Melbourne are the worst affected at above 45 per cent.

The incidence of long term unemployed (expressed as a rate of all unemployed) is highest in non-metropolitan and often remote regions. (Coober Pedy, Port Pirie and Whyalla in South Australia; Zeehan and Strahan in Tasmania). A number of other smaller inland towns in NSW and the Gippsland and Mallee/Wimmera region of Victoria also have greater concentration of this problem group.

The probability of unemployment is much greater for people in some industry groups than for others. Calculating unemployment shows that the highest proportions of unemployed had formerly been employed in construction and manufacturing, while there were proportionately fewer from finance and property, public administration and community services (see Table 6.3).
Table 6.3  Unemployment by Industry of Last Full Time Job, February 1994

<table>
<thead>
<tr>
<th>Industry</th>
<th>Unemployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture etc.</td>
<td>1.4</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>1.35</td>
</tr>
<tr>
<td>Construction</td>
<td>1.43</td>
</tr>
<tr>
<td>Wholesale, retail trade</td>
<td>1.09</td>
</tr>
<tr>
<td>Transport &amp; Storage</td>
<td>1.19</td>
</tr>
<tr>
<td>Finance, property and business services</td>
<td>0.65</td>
</tr>
<tr>
<td>Public administration</td>
<td>0.83</td>
</tr>
<tr>
<td>Community Service</td>
<td>0.55</td>
</tr>
<tr>
<td>Recreation and personal service</td>
<td>1.15</td>
</tr>
</tbody>
</table>

(Index 1.0 represents situation where unemployment in industry is same as that industry’s representation in workforce).

Source: ABS The Labour Force, Cat. No. 6248.0

6.3.3 Spatial Distribution of Disadvantage

A multi-variable index of relative socio-economic disadvantage has been calculated by ABS. It is made up of concentrations of low income, low educational attainment and high instances of unemployment. The index was mapped for Sydney and Melbourne on the assumption that relative disparities are greater in larger cities (see Figures 6.1 and 6.2).

In Sydney, the greatest concentration of disadvantaged were in the SLA’s of Sydney, South Sydney, Fairfield, Marrickville, Auburn, Liverpool, Canterbury, Wyong, Campbelltown and Blacktown. In Melbourne, it was Richmond, Footscray, Collingwood, Fitzroy, Port Melbourne, Melbourne, Preston, St Kilda, Brunswick, Sunshine, Northcote, Flinders, Dandenong and Coburg.

Generalising from these two cities, the inner city represents by far the strongest concentration of disadvantage. This is despite the extent of redevelopment and gentrification which has occurred in recent years. It does not mean that there is not a relatively advantaged population there as well - in fact it is likely that there is a bi-polar distribution of advantage and disadvantage in this area. The fact that there remain concentrations of disadvantage in and near the inner city, despite rising property prices and rents, and changing employment in this region, makes the disadvantage of population all the more vulnerable. The inner city however, remains a magnet for many unemployed and young, as well as for single parents, and it does have the benefit of good public transport allowing a high degree of access to most services needed by the disadvantaged.

Two other types of areas with concentrations of disadvantage are identifiable and are consistent with the areas identified by Maher and associates (1992). The first is the older industrial suburbs such as Canterbury, Botany and Auburn in Sydney and Footscray, Coburg and Preston in Melbourne. These are located in the inner/middle suburbs and again suffered considerable loss of manufacturing activity which has been their economic base.

Further out, again it is industrial suburbs which emerge as having concentrations of disadvantage. These include Campbelltown, Liverpool and Blacktown in Sydney, and Sunshine and Dandenong in Melbourne.
Figure 6.1: Sydney: Index of Socio-economic Disadvantage, 1991

Source: ABS, SEIFA, Cat.No. 2912.0
Figure 6.2: Melbourne: Index of Socio-economic Disadvantage, 1991

Source: ABS, SEIFA, Cat.No. 2912.0
Although these are relative rather than absolute measures of social disadvantage, the pattern revealed in the two cities is one of a systematic variation of social conditions which correspond closely to a number of economic outcomes identified in Appendix 3. The combination of already existing spatial patterns of social disadvantage, with processes of economic restructuring having a deleterious effect on the employment prospects of these same areas raised questions of considerable significance.

From this and other analysis there is little evidence of disadvantage occurring as a result of location, particularly in terms of outer suburban areas. Maher and associates (1992) found the concentrations of the most disadvantaged in the inner city and older industrial suburbs, with some occurrences in ex-urban areas such as Wyong in Sydney and Flinders in Melbourne. Locations is less a concern in access to facilities than has commonly been assumed. Findings from the Housing and Locational Choice Survey of the National Housing Strategy (Burgess and Skeltys, 1992) showed households on the periphery experienced little difficulty in this regard. The attractions of affordable but high quality housing is a considerable incentive to suburban living.

Trends in housing markets however have tended to reinforce other status differentials. Houses in upper status areas have tended to show a faster rate of appreciation than have those elsewhere (Thoms, 1992; Maher, 1994). Although they also suffered a greater correction in the recession, this section of the market is again flourishing.

Because of the more limited range of opportunities, it has been argued that personal disadvantages is greater in rural than urban areas. However, this tentative view needs to be further explored in terms of complex regional variations which exist. The emphasis of the Kelty report on finding regional strengths is relevant here.

6.4 Implications of Social Trends

In terms of the questions posed at the beginning of this chapter evidence from the above, together with the work of Hunter and Gregory (1994) does indicate that the restructuring process is creating greater social differentiation, and that this is being expressed spatially in a highly uneven fashion.

The extent to which such trends might reduce the attractiveness of an area to new or footloose enterprise is a much more difficult one to answer. However, it is a fair assumption that more success will be achieved in areas with an attractive social, cultural and environmental milieu, other things being equal. However it must also be pointed out that the extent of social polarisation in Australian cities is nothing like that exhibited in a number of other areas. The maintenance of a welfare safety net has ensured this. The lack of amenity posed by the presence of the poor in Australia is much less than that of New York or London. If the jobs available in new industries do not employ those retrenched from the old, however, then a growing group of disenfranchised could conceivably make some locations less attractive. However, the social costs of maintaining an underemployed population are too great to ignore. The recent White Paper strongly addresses this very question.

Overall, there are two general points about the incidence of social disparities in the Australian urban system, and their policy implications. One is that people are disadvantaged, not areas, though clearly some areas are better serviced with opportunities for labour market, housing and community facilities and this affects their residents' real incomes. With this understanding it is important to note the apparent presence of poverty amongst wealth, poverty in areas considered relatively wealthy - though whether this is anything new is anyone's guess, apart from the fact that it appears to be now associated with particular forms of economic restructuring different from past forms. We need to know if the new forms of economic growth are actively associated with the creation of poverty amidst wealth.
The second point is that our inner cities, because of their traditional concentrations of government services, have probably prevented the juxtaposition of poor and wealthy in Australia from showing in too sharp a focus. Australian metropoli share gentrification with the inner zones of American cities, and a concentration of the service-dependent there as well, but in Australian cities government-maintained services have provided a locality-based boost to the real income of the poorest which has been removed since the late 1970s from inner cities in the United States. The implication is that we need to ensure that these supports for the lowest income groups continue to exist in inner cities and that they are implanted in new economic zones where groups equivalent to metropolitan gentrifiers may be establishing or earning high incomes from new business.
ENVIRONMENT

7.1 Introduction

The environmental dimension of urban and regional development has generally been understood in terms of the various impacts generated by projecting current spatial patterns of population growth. Implicit in such analysis is the assumption that current technologies, planning policies, industrial structures and lifestyle aspirations will remain unchanged. On this basis and given the data and development analysed in Chapters 3 & 5 above, it is clear that significant environmental concerns are likely to arise in some fast growing regions - notably, western Sydney, southeast Queensland and Perth. Many of the impacts will be expressed through rising per capita costs of infrastructure provision on the urban fringe (see Chapter 5), while others will accumulate as negative externalities (see below) of one sort or another.

However, rather than focus on particular spatial manifestations of these processes, this section will seek to trace the links between urban environmental factors and wider opportunities for sustainable economic growth. Indeed, properly viewed, urban environments can comprise an important component of the competitive advantage of internationally oriented Australian industries. From this perspective, the natural environment performs three necessary economic functions: a ‘quarry’ for resources; a ‘sink’ for the disposal of wastes; and as a direct source of utility for people.

In large and growing urban regions problems of waste generation and management including macro-environmental impacts like climate change, are proving particularly intractable.

Conventional national income accounting approaches obscure the scale and scope of these environmental problems since per capita GDP measures either ignore them, or count the costs of dealing with them as positive components of national wealth. Where significant and unaccounted for depletion of natural capital occurs, national economic welfare may be falling in spite of rising GDP figures. Appropriate environmental indicators can indicate the general scale of the problem. For example, a recent set of OECD based indicators rated and compared member countries on the basis of eleven indicators: carbon dioxide, sulphur oxide, and nitrogen oxide emissions, water use, sewerage treatment, proportion of land protected, threatened species, municipal solid waste generation, energy efficiency, per capita car use, nitrate fertiliser use (MacGillivray, 1993). Major results were:

- Overall, Australia ranked eighteenth out of twenty one in terms of environmental performance.
- Australia has the highest per capital disposal of solid waste of all OECD members.
- Australia had the third highest rate of carbon dioxide emission and the second highest emission rate for sulphur oxides.
- Australia had the second highest dependence on private transport and fifth highest rate of energy usage.
- Conversely, with regard to the use of nitrate fertilisers, threats to species, and sewerage treatment, Australia ranked among the best of OECD member countries.

EPAC (1991) has summarised a number of environmental indicators in Australia, by State. New South Wales ranked the worst in noise and waste pollution and average traffic speed (see Figures 7.1 and 7.2 and Table 7.1).
Figure 7.1: The Green League Graph - Comparative Environmental Performance

Source: Green League Report
Figure 7.2: Combined Housing and Transport-related Greenhouse Emissions showing reductions in VicCode and TND Neighbourhood Types Compared with Conventional

Source: Greenhouse Neighbourhood Project - A Summary Report

Table 7.1: The Green League vs. The Human Development Index and GNP/Capita

<table>
<thead>
<tr>
<th>Country</th>
<th>Green League Rank</th>
<th>HDI Rank (1993)*</th>
<th>GNP/Capita Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>1</td>
<td>14(15)</td>
<td>9</td>
</tr>
<tr>
<td>Portugal</td>
<td>2</td>
<td>20(41)</td>
<td>19</td>
</tr>
<tr>
<td>Japan</td>
<td>3</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Spain</td>
<td>4</td>
<td>18(23)</td>
<td>17</td>
</tr>
<tr>
<td>Turkey</td>
<td>5</td>
<td>21(73)</td>
<td>21</td>
</tr>
<tr>
<td>Italy</td>
<td>6</td>
<td>17(22)</td>
<td>14</td>
</tr>
<tr>
<td>Norway</td>
<td>7</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Switzerland</td>
<td>8</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Sweden</td>
<td>9</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>10</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Denmark</td>
<td>11</td>
<td>12(13)</td>
<td>8</td>
</tr>
<tr>
<td>France</td>
<td>12</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Germany</td>
<td>13</td>
<td>11(12)</td>
<td>4</td>
</tr>
<tr>
<td>Greece</td>
<td>14</td>
<td>19(25)</td>
<td>20</td>
</tr>
<tr>
<td>Ireland</td>
<td>15</td>
<td>16(21)</td>
<td>18</td>
</tr>
<tr>
<td>Netherlands</td>
<td>16</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>Finland</td>
<td>17</td>
<td>13(14)</td>
<td>10</td>
</tr>
<tr>
<td>Australia</td>
<td>18</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Belgium</td>
<td>19</td>
<td>15(16)</td>
<td>11</td>
</tr>
<tr>
<td>Canada</td>
<td>20</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>USA</td>
<td>21</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Green League Report
These environmental performance indicators clearly reflect the highly urbanised nature of Australian development, particularly with respect to the high proportion of the national population resident in the capital cities and the highly suburbanised form of those cities.

7.2 Urban Environmental Externalities

Large cities, by concentrating production and consumption activities in space, are extensively characterised by external benefits and costs. Many of the benefits - economies of agglomeration and scope, specialised labour markets - contribute to creating the productive and innovative urban milieu stressed in Chapter 2 above. However, cities also generate significant negative externalities, many associated with environmental factors, most notably problems created by the diverse, massive and harmful effects of waste caused by both industrial and consumer activities. Energy production, distribution and usage, including transport, are prime sources.

Recently, Australian energy authorities have followed their US counterpart in attempting to 'internalise' external costs of production and distribution for the purposes of least cost planning of new energy developments - though not yet for pricing.

In 1991 the Victorian Government introduced an arbitrary 10 per cent cost advantage for energy conservation and renewable energy options when planning for future energy developments. The international consultant, RCG, Hagler, Bailly Inc. (1993), were then commissioned to carry out an extensive study of externalities associated with electricity and gas production, including coal fired and hydro sources, along with renewable and conservation demand management approaches. Environmental impacts were identified and, where possible, valued for each energy option. The main impact concerned adverse effects on human health and biological resources, climate change and aesthetic blight, especially as concentrated in Melbourne (the main energy usage centre in the state) and the La Trobe Valley (the main generation site). The study concluded:

- Supply-side (production) options can generate significant negative external costs - particularly, greenhouse emissions, particulate (air) pollution and creation of tropospheric ozone. Many of these air emissions combine systematically to inflict increased damage.

- The scale of externality effects depends critically on supply-side technology. Estimates for the new brown coal fired station, Loy Yang A, suggest negligible externalities from this source, with one important exception, due to the sophisticated environmental abatement design and technological features of the new plant. The exception is greenhouse gas emissions. When such impacts are valued using abatement costs, the measures result in the total cost of electricity being double the internal costs at that plant.

- In older coal-fired generation plants, using less advanced production and abatement technologies, external costs other than Greenhouse related will be higher than for Loy Yang A.

- Demand-side management options, including load shifting, improved energy use efficiency and renewables, generate significantly lower externalities. Even here, however, some effects are evident - e.g. more energy efficient buildings may utilise materials with potential for environmental damage downstream, load shifting from gas generated peak supply to coal generated off peak supply will increase environmental costs.
The actual volume and incidence of energy externalities will vary significantly between and within regions, due to topography, seasons, and the age and health profile of the affected populations.

Some externalities are extremely difficult or impossible to quantify or value.

The study demonstrates an extremely important point:

The costs imposed by environmental externalities can be significantly reduced - and, hence, general economic welfare increased - by a combination of (a) total least cost planning approaches and (b) the application of new control technologies. Both avenues provide extensive industrial development and employment opportunities for Australia (see below).

Many negative environmental externalities are generated by the low density extensive form of urban development in Australia. Such development is highly energy intensive, particularly with respect to transport patterns and technologies. For example:

- McGlynn, Newman and Kenworthy (1991) estimate that total urban transport energy would be 21 per cent less than projected current trends by the year 2021, if nearly all projected metropolitan population and employment growth were concentrated around sub-metropolitan centres.

- Loder and Bayley Consulting Group and associates (1993) compared three residential neighbourhood forms in terms of energy usage and Greenhouse emissions in a growing fringe area of Melbourne. Their ‘traditional neighbourhood’ which combined a residential density of 25 dwellings per hectare, highly interconnected local street system, and local shopping and employment opportunities, generated a 26 per cent reduction in dwelling related Greenhouse emissions and a 57 per cent reduction in transport - related emissions, in comparison to conventional suburban forms (at around 10 dwellings per hectare).

The capacity of urban planners and policy makers to substantially reduce transport -related Greenhouse emissions by the implementation of sensible urban consolidation policies is critical if Australia is to achieve the Toronto target of reducing 1988 carbon dioxide emissions by 20 per cent by the year 2005. The transport sector generates 27 per cent of national carbon dioxide emissions. If the transport sector was to contribute proportionately to the overall target reduction, emissions from this sector would have to fall by 42 per cent, over current projections on a ‘business as usual’ basis (calculated by the Transport Working Group of the Ecologically Sustainable Development Working Groups).

Before concentrating on other environmental aspects of the transport sector, it is worth noting that if urban policies aimed at reducing energy transport environmental externalities through appropriate consolidation policies, infrastructure provision and technological improvement are successful, then other environmental problems associated with current urban processes of urban development and sprawl - viz. encroachment on prime agricultural and environmentally sensitive land, including coastal regions - will also be addressed.

7.3 The Case of Road Transport

The transport sector generates a number of damaging air pollutants other than Greenhouse emissions, notably carbon monoxide, hydrocarbons, lead and particulates. Derived pollutants include photochemical smog. Air quality indicators were introduced in the 1980s to the larger cities and generally indicate reductions in emissions, due to improved pollution control including vehicular control. For:
Carbon monoxide emissions; the number of days per year on which indicator target levels were exceeded in Sydney fell from 120 in 1985 to 10 in 1990. Melbourne has not breached its target since 1983.

Nitrogen oxide targets are still being breached in Sydney, though not Melbourne.

Ozone; the number of breaches in Melbourne has fallen from 24 days in 1982-83 to around 5 days in the late 1980's. However, if the more stringent ozone standards recommended by the ESD Transport Working Group were introduced, the number of breaches would increase significantly.

Lead; air pollution levels have fallen significantly since the introduction of unleaded petrol in the mid 1980s. In 1993, about 50 per cent of petrol sold was unleaded; this proportion is expected to rise to over 80 per cent by the year 2000. Nevertheless, a recent study by Berry, Garrard and Greene (1993) has estimated that around 40 per cent of Australian children under 5 years have blood lead levels of more than 10 micrograms per clean litre, the point at which the National Health and Medical Research Council recommends ameliorative health action. The study calculated that net health and other benefits of almost $5 billion would accrue if the lead content of leaded petrol was quickly reduced to the European standard of 0.15 grams per litre, a small excise tax differential in favour of unleaded petrol was introduced, and a community education program encouraging owners of suitable pre 1986 cars to switch from leaded to unleaded fuel initiated. Policies have recently been introduced which are broadly in line with these recommendations, though the reduction in lead content and excise differential targets are slightly less stringent than recommended.

Particulate levels in cities; the health effects are generally seen to be insignificant, though particulate pollution is rising with increasing use of diesel fuels and the Victorian EPA has argued that current levels in Melbourne are unacceptable on amenity grounds.

Traffic congestion is a major external costs to businesses in large cities. Congestion levels on Australian roads have increased over the past decade due to rising passenger and, especially, freight movements and underinvestment in roads (see Chapters 2 and 5 above). Indicators of the scale of the problem are:

- Road freight in Australia has grown by 230 per cent over the past 20 years.
- The value of Australia’s road network fell from 17.5 per cent of GDP in 1967 to 11 per cent in 1991; road spending in real terms by all governments has risen little over that period.
- Studies have estimated that traffic congestion adds about $2 billion per year to business costs in both Sydney and Melbourne.
- Regional economic surveys indicate that high congestion is a major reason for firms relocating away from Melbourne’s inner city.

There are a number of strategies which could be adopted to significantly reduce dangerous vehicle emissions an/or reduce congestion:

- Improved fuel efficiency. The Federal Department of Transport and Communications has argued that a national average fuel consumption target of 7.4 litres per 100 kilometres could be achieved with limited policy action. However, the ESD Transport Working Group argued that the rate would need to reach 4.7 litres per 100 kilometres by 2005 if the transport sector was to make a significant contribution to Australia achieving the Toronto Greenhouse target.
In fact, if Australian industry is to maintain, let alone increase its share of the increasingly global car engine manufacturing industry, it will have to do even better. Led by German regulatory controls, European and Japanese manufacturers are rapidly improving engine designs and efficiency. This suggests (following Porter's thesis), that more ambitious Australian government regulation can spur significant improvements in national competitive advantage in this industry.

- Road pricing. Annual registration charges could be phased down in favour of increased use-based excise taxes on petrol and sales taxes on vehicles related to fuel efficiency, and extra Commonwealth revenue hypothecated to State governments to offset the State's loss of registration revenue. Petrol excise could also include a 'carbon tax' component to reflect greenhouse factors. Congestion taxes could be imposed on motorists using currently overcrowded roads at peak time. Stanley and Ogden (1993) calculated that a congestion charge of around $5 per trip was warranted in the most congested areas of inner Melbourne.

- Other potential strategies including increasing the use of other fuels (e.g. CNG, ethanol), introducing electric cars and buses for short haul trips, greater use of B-doubles for freight movement. This could be achieved by a mix of regulation and market incentives.

7.4 Green Production: Environmental Growth Industries

A report commissioned by the Commission of the European Communities, entitled European Competitiveness in the 21st Century, stated that competitive success would be increasingly dependent on minimising adverse impacts on the environment. "This will imply not merely new forms of materials but new forms of production and new product ranges which permit recycling, repair and refurbishment" (Cooley, 1990).

Increasingly stringent environmental regulations on industry, along with actual or threatened pollution taxes in the European community, in particular, are pushing industries to innovative, redesign and re-engineering product lines to position their firms to:

- meet compulsory standards and avoid taxes;
- successfully exploit the rapidly growing market for 'green products'.

The competitive advantage of many manufacturing industries will depend largely on how well they integrate clean production and waste technologies, eco-design principles, new materials and efficient logistical retrieval systems into their core production systems and corporate strategic planning.

The regulatory move to Extended Producer Responsibility (EPR), requires producers to accept cradle-to-grave responsibility for the entire life-cycle of their products, including safe disposal. Product recovery and/or recycling schemes have been established by BMW (vehicles); Miele and Electrolux (domestic appliances); IBM (computers); Rank Xerox (office equipment); Phillips (electronics); Black and Decker (tools).

- Miele selects materials and designs appliances to maximise the recovery and recyclability of materials, which the company estimates as 20 per cent of working machines.
- BMW and Xerox have established re-engineering (or re-manufacturing) plants and aim to move to a situation where they are physically retrieving all part products for recycling into new products.
In Australia, Kambrook Industries has entered into a joint research project with RMIT’s Key Centre for Design (supported by a collaborative research grant for the Australian Research Council) to re-design their product line to improve their environmental performance and boost competitive advantage internationally.

In a pilot program in outer Melbourne, Fletcher Construction has demonstrated that improved materials ordering, handling and use reduces building site waste by 37 per cent, raising project profitability and increasing worker morale.

One ‘green’ industry sector in particular which is growing quickly and generating significant employment is the environmental waste management equipment, system and services industry (EWMESS).

- The Industry Commission (1993) review states that the current international turnover is $280 billion, growing at 5.5 per cent per year;
- Australia currently accounts for about 1 per cent of the industry with annual turnover likely to top $4 billion by the end of the decade;
- The Industry Commission notes the link between comprehensive environmental policies and regulation and rapid growth in the EWMESS industry;

The Australian environmental management industry is extremely well placed to generate competitive advantage in this field since:

- Australia has a well developed relevant scientific and research infrastructure.
- Green consumer demand is growing rapidly in Australia - in this regard, Australian consumers are increasingly sophisticated and demanding.
- Environmental quality has assumed increasing political salience in Australia and public policy responses are developing (though not yet as quickly as in Europe).
- Australian industry is poised to penetrate the dynamic Asia-Pacific economic region. A recent UN/ESCAP report, Urbanisation in Asia and the Pacific, forecast that 19 of the 24 mega-cities with populations in excess of 10 million people by 2020 would be in Asia-Pacific, and that environmental problems and management will assume central economic and political significance in the region.

In summary, green production and green job creation offers significant opportunities to improve Australian urban environments, contribute to a reduction in domestic unemployment levels and generate a growing stream of foreign exchange easing the balance of payments constraint on domestic economic development. Australia’s very pattern of urban development and expertise create environmentally based opportunities for sustainable growth, rather than simply a series of negative impacts to be borne.
8 ROLE OF GOVERNMENT IN URBAN AND REGIONAL DEVELOPMENT

8.1 Context

The preceding chapters have outlined how Australia's urban areas are developing, or might develop, in economic social and environmental terms, within the context of broader governmental policies. This section examines the framework of government involvement more generally, within a context of seeking to improve the nation's competitive position. It does this by briefly reviewing the major thrusts of the recent Kelty Committee report and outlining the comprehensive framework for governmental policy in upgrading competitive advantage recently presented by Michael Porter (Porter, 1990). Kelty is discussed and taken as a point of departure in considering possible priorities for government, since it represents the most comprehensive attempt ever presented in Australia towards preparing a recipe for regional economic development.

The Porter framework is used both because it is consistent with the findings of the present report on initiatives which might be suitable within Australia's cities, and because the Kelty approach reflects several aspects of the framework. However, in this concluding chapter we point up some key areas which have not been explored by Kelty and differences of emphasis which emerge from the present review, in the light of the Porter work.

The objective of this section is to establish both a philosophy and methodology for improving Australia's international competitiveness. It is argued that there are policy opportunities which have not yet been sufficiently explored, yet would serve to complement existing policy thrusts. Major policy initiatives thus far have concentrated on aspatial reforms of the macro-economic and micro-economic environments. Yet there are significant spatial elements which provide both opportunities and impediments to the achievement of the goal of greater international competitiveness.

A framework for developing such an approach was developed in Chapter Two. In that, three broad areas were outlined as having potential for an expanded policy range. It was argued that in addition to macro and micro economic reform, a strategy based on:

- making cities more efficient producers of goods and services;
- enabling the development of complementarities which foster creativity and innovation; and
- developing elements of cities as products in their own right.

has the potential to further enhance Australia's competitiveness by recognising the realities of production, innovation and marketability and enhancing these where they currently exist or potentially might be developed.

8.2 The Kelty Report

"Australia will only reach its full potential as a nation if the regions can reach theirs" (Kelty, 1993:3)

This introductory statement by the Kelty Committee is strongly supported by the analysis presented in the current report. With 80 percent of Australia's population located in major urban areas and over 60 per cent in the state capitals, the statement has particular force for urban policies. It is these areas, in particular, which will be the major source of the growth in Australia's export incomes in coming years, from manufactures (especially the more elaborately transformed manufactures) and higher
order services (including education, consulting, financial services and much tourism). The achievement of such increases is vital to continuing national economic development.

The regions and cities of Australia are different in many ways. Reasons such as physical location, settlement history, accessibility, public policy, investment patterns and population character all contribute to a differentiation of outcomes. If governments are to act to maximise the potential economic role of cities, and the parts thereof (which also differ), programs which recognise differences, foster strengths and reduce weaknesses are essential. Governments at all levels have vital roles to play in this regard, from the Commonwealth setting the macro-economic levers in the forward position, to local governments and regions helping to facilitate those informal networks which have been shown to be so important to the growth of many high technology businesses.

The Kelty Committee’s strategy has three main principles behind its recommendations to assist regions to maximise their growth potential. These principles are (Kelty, 1993:4):

- All regions should have equal access - as far as possible - to basic infrastructure.
- The regions should have the opportunity to develop their local economies.
- Those regions suffering some specific advantage, for example, their remoteness, should have access to special assistance.

There is a strong value judgement of the need for equity between regions in these principles, as well as an efficiency focus.

The major program thrust emerging from the report (Kelty, 1993:4) included:

- A national commitment to the modernisation of Australia’s infrastructure base, particularly in transport (and more particularly in roads).
- The creation of new financial instruments and markets, designed to increase the regions’ ability to attract private investment in their local economies.
- Support for the regions in turning economic development plans into reality.
- An expanded system of traineeships to provide employment opportunities for 75,000 young people each year.

A problem with the approach promoted by the Kelty Committee is the unresolved tension between measures oriented to equity objectives and those concerned with improving efficiency. Recommendations concerned to overcome disadvantages of isolation, and to provide attractions (both economic and social) which would retain population in particular locations may add little to national improvements in competitiveness. In fact such measures may well use scarce resources which in an efficiency sense, would be better applied to the development of existing clusters of activity in order to provide a further dynamic impetus.

Because of the more specific focus of this report on enhancing competitiveness, we take quite a different stance to that of Kelty. However, it is recognised that there may be social and environmental impacts of such an approach which need to be taken into account when assessing the advisability of particular actions.
Yet the Kelty report’s emphasis on regional initiatives as an impetus to further economic growth is sound. What needs to be developed is a more targeted and particular set of initiatives. The basis of such an argument can be found in Michael Porter’s work.

8.3 The Porter Approach

In his seminal work, *The Competitive Advantage of Nations* (1990), Michael Porter has argued that the principle determinants of competitive advantage are:

- Factor conditions.
- Related and supporting industries.
- Demand conditions.
- Firm strategy, structure, and rivalry.

Chapter 2 of the current report summarised some of Porter’s ideas, noting that competitive advantage is essentially *created*. This chapter deals with Porter’s ideas on the role of government in developing competitive advantage.

Porter sees government’s role in national competitive advantage as influencing each of the four determinants, with the influence at all times being focused towards increasing productivity levels, through stimulating dynamism and upgrading competitiveness.

Government’s aim should be to create an environment in which firms can upgrade competitive advantages in established industries by introducing more sophisticated technology and methods and penetrating more advanced segments. Government policy should also support the ability of the nation’s firms to enter new industries where higher productivity can be achieved than in positions ceded in less productive industries and segments. (Porter, 1990:618).

Porter is clear that, while establishing the right macro-economic environment is vital, it is by no means sufficient for a successful policy of enhancing competitive advantage. His analysis suggests a much more varied role for governments in influencing the four determinants of advantage, with the focus being on creating an environment in which firms can gain competitive advantage, rather than governments being directly involved in the process. Indirect, rather than direct, roles are the key. This view is widely supported by other authors studying, for example, the growth and locational patterns of higher technology industries (e.g. Willoughby, 1993). Governments only need to play a direct role in areas where firms are unable to act, such as trade policy or in the correction of externalities which hinder the workings of the private marketplace.

International standards are the targets towards which policy must be directed, according to Porter, who cites (for example) Japanese and German norms for the number of graduates and the training they receive as examples of educational and training targets.

Porter’s analysis indicates that clusters of competitive industries are frequently observed, with a city, region or part thereof, being the locus of activity and the bases for advantage being intensely local. Thus spatially specific initiatives which affect the local environment are an important policy tool in enhancing a competitive environment.

Geographic concentration is important to the genesis of competitive advantage. Discussions of policy to encourage competitiveness are preoccupied with the national government and with overarching national circumstances. As much or more attention is necessary at the
regional and local level, in areas such as university education, infrastructure, local regulations, local research initiatives, and information. (Porter, 1990:622).

In devising policies to influence competitiveness, Porter argues that the most appropriate focus is in his four key determinants.

### 8.3.1 Factor Creation

The creation and upgrading of specific factors of production has been a traditional area for government activity, covering areas such as provision of skilled human resources, basic scientific knowledge, economic information and infrastructure. Porter stresses that competitive advantage requires not so much the availability of factors today but the presence of unique institutional mechanisms to continually upgrade them. The government focus will generally be on the creation of generalised factors, with firms and industries playing a stronger role in developing advanced and specialised factors which are essential to competitive advantage, often in co-operation with government (e.g. through research institutes). The most effective mechanisms used to upgrade factor conditions, as identified by Porter, include:

... specialised apprenticeship programs, research efforts in universities connected with the industry, trade association activities, and, most important, the private investments of firms themselves. Domestic rivalry, clustering, and geographic concentration all proved to be vital to the rate of factor upgrading because they multiplied the centers of initiative, drew a mass of attention and effort, and stimulated the investments of public institutions. (Porter, p. 627).

In this framework education and training are decisive in national competitive advantage, constituting perhaps the single greatest long-term leverage point available to all levels of government in upgrading industry. General education is not sufficient for this purpose. Policies to link the educational system to industry and encourage industry's own efforts are also vital.

Other areas important to factor creation stressed by Porter are:

- Science and technology, where the creation of innovation policies can be seen as the overarching principle, not just a science and technology policy. The role of research universities is seen as particularly important.

- Infrastructure, with advanced transportation, logistics and telecommunications all integral to introducing modern technologies and competing in international markets.

- Capital - the availability of ample supplies at low cost, efficiently allocated through capital mechanisms.

- Information, about markets, technology and competition is important in helping to shape the decisions of firms.

Porter argues strongly that macro-economic and micro-economic policies designed to control factor costs and the exchange rate, through intervention in factor and currency markets, to help firms compete more effectively in international markets are only part of the role for government and can be counterproductive. Some nations have sustained strong increases in competitiveness against the background of rising wages and a rising exchange rate. Factor costs are only decisive to competitive advantage in industries where technology is unsophisticated and easily accessible. Innovation is the key in industries with potential for high productivity. "What is beneficial in a static view of competition undermines competitive advantage in a dynamic one". (Porter, 1990:641).
Porter’s work does not detail specific urban policies and the spatial implications of his work need to be established. Not only is it important that some of the upgrading and linkages be fostered, but in a country as sparsely settled and with such great distances as Australia, the question of where such initiatives occur is important. The possible sites for the linkage of high level education and training functions and research establishments, for example, are quite limited in this country. Thus the location of public intervention as well as its nature, becomes critical to their achieving linkages with a dynamic sufficient to foster the appropriate environment.

8.3.2 Demand Conditions

Through its role as a buyer of goods and services, governments can influence demand conditions. Porter notes that government demand can be a positive force for upgrading national advantage under the following circumstances:

- By providing early demand for advanced new products or services.
- By being a demanding and sophisticated buyer, setting stringent product specifications and seeking sophisticated product varieties.
- By reflecting progressive international needs in its demands.
- By adopting procurement processes that facilitate innovation and competition.

Government regulations can be an important means of encouraging innovation. Regulations governing such matters as product performance, safety and environmental impact can be used to create a position of competitive advantage. Porter notes that stringent regulations which anticipate standards that will spread internationally can be an important means of facilitating demand conditions which will lead to competitive advantage. Regulation undermines competitive advantage, however, if a nation’s regulations lag behind those of other nations. Section 3.7 of this report has pointed out how the German government is using vehicle standards to “create” a market advantage for local manufacturers, whereas the Australian fuel consumption standards (for example) may place us in an increasingly poor competitive position.

8.3.3 Government’s Effect on Related and Supporting Industries

The issue of cluster formation is particularly important under this heading. Porter notes that national advantage resides as much in clusters as in individual industries. Many clusters arise naturally. Once they begin to form, however, governments at all levels can play a reinforcing role. In addition, to reinforcing existing clusters, Porter argues that some nations have gone about spawning new ones. This is seen as being most effective if built around a concentration of specialised expertise, such as a university department or group of sophisticated institutions, such as hospitals. Government policy is more likely to be successful in reinforcing existing clusters than in creating new ones.

Porter argues that regional policy will be most successful if it concentrates on building clusters. *Magnets for clusters, in the form of universities, research laboratories, specialised infrastructure, or trained labour pools, are much more effective than subsidies* (Porter, 1990:656). The provision of conditions under which such clustering is facilitated is an important public role. This represents a shift in emphasis from the role of the public sector providing a favourable business climate to an emphasis on pursuing the conditions which will produce a favourable economic climate.
Favourable business conditions are represented by factors such as a docile workforce, low taxes and few regulations. The creation of a favourable economic climate is much broader, encompassing the availability of a skilled and educated labour force, adequate infrastructure for economic growth and high quality public services. Although it is in the interests of firms to have good infrastructure, the non-exclusionary nature of the benefits accruing to most infrastructure means that there is little incentive for individual firms to invest in such a way. If not provided by the public sector, then they will be under provided with consequent costs to the community at large (Feldman, 1993).

8.3.4 Government’s Effect on Firm Strategy, Structure and Rivalry

Porter argues that there are many ways in which government can influence the manner in which firms are created, organised, managed, their goals and how they compete. These include such matters as:

- **Internationalization** - encouraging firms to have an international outlook and to export.

- **Individual goals** - fostering the ideas of hard work and sustained commitment and supporting these through means such as tax systems which encourage effort, labour market policies which encourage flexibility but support commitment to the profession and firm/industry and educational and other policies which encourage advancement based on merit.

- **Company goals** - implementing policies and encouraging attitudes which favour long time horizons and a willingness to invest, rather than short term benefits to shareholders.

- **Domestic rivalry** - building domestic rivalry and competition is seen as vital to competitive advantage, with approaches such as privatisation of government business enterprises and reducing barriers to entry to industries.

- **Interfirm cooperation** - this is seen as increasingly important to development of many of the regional clusters which are characterised by small to medium sized firms in niche high growth markets, where the operating milieu is a central source of competitive strength. Means of building regional clusters are relevant here.

- **Trade policy** - where the pursuit of open market access is seen as an important means of stimulating development of competitive strengths.

These matters are generally ones for the national government, though with a stronger state and local focus on elements related to the building of regional clusters. The Australian Government has made considerable progress in the directions proposed by Porter for the growth of competitive advantage.

8.4 Assessment

Porter’s work leads him firmly to the view that the essential task of government at the innovation stage of economic development is to create an environment in which firms are, and continue to be, innovative and dynamic. The government role is one of “facilitator, signaler, and prodder”. Government’s most significant influences at this stage are in creating advanced factors, upgrading demand conditions (such as through setting stringent standards and raising aspirations in areas such as health care and environmental ability), deconcentrating economic power, ensuring competition, and signalling.
Feldman (1993) concludes that non-interventionist views fail to recognise the 'public good' nature of knowledge based inputs to the innovations process. Innovation is a key issue for economic development policy. Product and process innovations provide a potential for job growth as new firms and industries emerge to meet new product demand and cater for existing demands more efficiently.

The well documented trend for product innovations to cluster spatially (the Silicon Valley effect) in areas which contain the technologic infrastructure to support innovative activity has been used as an argument for a greater government role in the provision of infrastructure as discussed below.

8.4.1 Infrastructure

The Kelty report has picked up some of the Porter approach, particularly in terms of the emphasis on infrastructure, availability of risk capital and, to a lesser extent, the need for traineeships. However, there are some notable differences. Analysis in the current report indicates that some redirection of emphasis, from that presented in Kelty, would be more appropriate in terms of encouraging long term development of the competitiveness of Australia, particularly through the fostering of existing linkages or ensuring the establishment of suitable infrastructure in those locations where the potential pay off is greatest.

Kelty has focused very heavily on upgrading infrastructure, particularly, transport (and more particularly roads) but with a very wide spread of resources. This current report supports the need for upgrading transport infrastructure, the evidence being of significant run-down in the past decade, but would argue for a more targeted approach than that recommended in the Kelty report. Those proposals are essentially a long term blueprint (30 years or so). More emphasis needs to be put on medium term priorities within the broader Kelty set of initiatives. So far as the Commonwealth is concerned, its role in this area in the short to medium term could be to:

- Review the National Highway system, to extend its coverage within urban areas, in such a way that development of the more trade-exposed industry sectors is encouraged. By way of example, this would involve the declaration of key road links to/from the air and sea ports, to/from interstate highways, and between major manufacturing centres as of national economic significance and eligible for funding under the National Highway program. Funding of other roads should be left to the states and local government, though some consideration needs to be given to the financial balance between levels of government to undertake this, and other responsibilities.

- Restructure its fuel taxation system, to remove the tax component from diesel excise, leaving only the road user charge component of this levy.

- Support upgrading of the key transport interchange facilities, where nationally significant road initiatives need to be coordinated with the work of the National Rail Corporation.

- Increase the competitive pressure on airports, such as by privatising them.

8.4.2 Education and Training

The traineeship proposal of Kelty's committee has a strong flavour of a short term response to the nation's unemployment problems. The Kelty report also emphasises the importance of access to higher educational facilities for regional development and tertiary institutions being closely linked to
the firms in their region. However, the importance of such initiatives in the context of the Kelty report is small alongside those in the areas of transport and finance.

The lessons of the Porter work are that longer term solutions to the development of competitive advantage, insofar as governments can influence this process, are most likely to be found in upgrading the education and training systems, with participation based on international benchmark levels and a strong emphasis on building stronger links between industry, educational, training and research institutions. The Kelty proposals on empowering the regions (e.g. through the development of Regional Economic Development Organisations) will assist in this regard but a strong measure of central leadership in upgrading educational and training would seem appropriate for the longer term. Australia’s poor record in terms of government funded education has been pointed out in this report. That performance is inconsistent with achieving sustained upgrading of competitive advantage across a wide range of sectors. State and local governments need to be involved in this process, to ensure that system developments are in accord with established clusters of competitive advantage and with the furthering of these advantages.

Porter indicates that governments also have important roles to play in the area of innovation policy. The national government is vital in this area. Australia’s performance in research and development is relatively poor, in terms of its OECD ranking. Long term economic development of Australia’s cities seems likely to require that considerable attention is devoted to upgrading capacities in this area.

8.4.3 Capital Investment

The Kelty Report focused on the availability of capital to small and medium sized businesses in the regions and argued that new financial instruments (Regional Pooled Development Funds) should be created to assist the regional flow of funds for business development. Various measures were suggested by his committee to facilitate the flow of funds into such mechanisms. Included under this heading is encouragement to superannuation funds to take up investment opportunities in the financial instruments of the RPDGs.

Brain (1992) has argued that an active industry development program in Australia is central to the reduction of the current account deficit and increasing unemployment and that this will require about $5 billion (1992 prices) annually in development equity capital for the manufacturing sector. These funds are needed to support accelerated growth and export performance of a grouping of market driven small to medium sized companies which have the capacity to grow quickly in export oriented high value added sectors. These will be largely urban. Super and life offices are seen as being crucial to the achievement of this flow of funds. Brain argues that superannuation funds will need to be required to invest 1 per cent of their total funds in such activities if the necessary flow of total funds is to be achieved. The basis for regulation to require this level of investment is the privileged taxation position of the funds. The Commonwealth needs to consider carefully the adequacy of venture and development capital in Australian financial markets and whether there are grounds for requiring superannuation funds and life offices to invest about 1 per cent of their funds in such areas. The Kelty position of encouragement may not be strong enough on this matter, and some more specific means of ensuring the flow of some of these funds to productive ventures may be need needed.

8.4.4 Social and Physical Environments

This study and much of the work it reviews emphasises the role of ‘soft capital’ in helping to create an environment in which innovation can flourish. This soft capital basically includes quality of life considerations, such as the environmental, cultural and recreational quality of cities and their parts.
These matters are not discussed by Kelty but the evidence is growing that they are increasingly important in fostering development of clusters of higher technology sectors. The states and local government need to assess their cities in these terms and develop programs to increase the standard of key quality of life factors. The Commonwealth can use its powers, including financial powers, to encourage this process, as is being attempted in some of the Better Cities projects.

8.4.5 Regional Initiatives

A major thrust of the Kelty recommendations is to empower regions to work for their own economic development, with Regional Economic Development Organisations being central to this initiative. The success of some regional economic development bodies in helping to facilitate local and regional economic development suggests that this approach should prove fruitful. Measures such as encouraging informal networking between businesses in related fields have been shown to be powerful ways of encouraging dynamic clusters to upgrade and improve their competitiveness (see, for example, Willoughby’s work on biotechnology industries in California and New York. Willoughby, 1993). REDOs can play a positive role in such areas, as well as in matters such as working with regional industry to identify constraints to development and the best means of overcoming these constraints, and ways of realising opportunities for regional development. Rationalising the respective roles of local government and REDOs will require some sorting out but the Kelty initiative deserves strong support.

The Kelty report does not explore matters such as the ways in which governments can encourage the development of competitive advantage by what might be called “socially leading regulation”. Porter sees this as providing significant opportunities in many areas and this current report and it’s Appendix have given some examples in the transport (e.g. traffic signal technology) and environmental (e.g. vehicle standards, waste management) fields. Australia’s cities will be the locus of many such opportunities and the sensitive pursuit of some opportunities in this area can be important aspects of furthering city economic growth.

8.4.6 Pricing

The matter of pricing of government services and externalities of urban growth was a matter largely beyond the scope of the Kelty Committee, although it did recommend greater reliance on user charges for funding infrastructure requirements. This current report argues, however, that a comprehensive approach to pricing government goods and services needs to be part of a more general strategy to encourage a more efficient urban form. This includes matters such as greater reliance on user charges for services at the urban fringe, to make developers and others more aware of the full costs their decisions impose on the community, and attention to pricing of road use in the more congested parts of the city, to again make users aware of the full social costs of their travel choices. State and local governments have the major role to play in such moves. Equity implications of such moves are clearly of considerable importance and probably explain why progress has been slow. However, if the inexorable spread of Australia’s major cities is to better reflect the marginal costs of growth, such changes are important. The Commonwealth has no direct role in this area but can work with and encourage regions and local government to develop suitable models for implementation. This should, inter alia, have the effect of reducing the requirement for infrastructure development capital, freeing capital for use in building important business plant and equipment needs.
8.5 Conclusions

The importance of government intervention to create the conditions for economic growth and greater prosperity has been highlighted here. Macro-economic policy and micro-economic reforms have undoubtedly created a leaner and more efficient and internationally competitive economy, despite some quite severe dislocations. However, there is a need to go beyond aspatial policies, to a more targeted spatially interventionist approach aimed at producing and enhancing conditions at specific locations under which further economic growth can occur. This consists largely of targeted public investment in infrastructure and resources which will serve to create the conditions under which dynamic groupings of enterprises will develop.
9 OVERVIEW: STRUCTURE AND PATTERN OF URBAN AND REGIONAL DEVELOPMENT

The development of the urban and regional system in Australia is a complex response to a vast array of processes as discussed above and detailed in the appendices.

In summary the evolving nature of the system can be described in terms of the nature and impacts of four general processes:

- structural change;
- demographic transition;
- spatial redistribution;
- regional development and competition.

Each of these broad categories has implications for the future potential of Australia’s economic development. The prospects for a more competitive environment which will contribute to greater economic well-being to a large extent are tied up with the development trends and the extent to which the nature of development can be enhanced or altered to fulfill economic objectives. The success of such intervention is a combination of understanding the forces driving the system, political will to achieve desired change, and an assessment of other impacts, particularly where there are distributive or environmental implications. There are also institutional constraints impinging upon the ability to effect change.

9.1 Economic Restructuring

Changes in the world economic order have irrevocably altered Australia’s situation and this is having a number of substantial impacts on the settlement system. The first is in exports which have been Australia’s traditional strength. The markets on which the country built its earliest economy are now no longer as accessible; the structure of commodity prices has altered substantially, often to the detriment of the exporting nation; and the demand for minerals and farm produce has fallen with the emergence of large and powerful trading blocs. Britain has become much less important as a trading partner, with Japan now the major focus and the Pacific Rim being the region of greatest significance and potential for Australia (Daly and Logan, 1989).

At the same time, the nature and source of Australia’s imports have altered. Domestic industry has suffered through growing competition from low wage areas particularly in Asia, partly through a reorientation of trading partners with a move toward the Pacific Rim in terms of trade exchange, and partly through a lowering of tariff barriers which have been progressively eroding the competitiveness of home grown enterprises. Added to both these processes has been the downward movement of the exchange rate of the Australian dollar, particularly since financial deregulation in the mid 1980s.

These trends have a differential impact on localities which is dependent on the particular mix of economic activities in each region (Stilwell, 1991). The major impact has been felt in manufacturing industry. Foreign competition through lower wage rates has brought about a shift to imports, or to the relocation off-shore of enterprises previously employing local labour. This impact has been exacerbated by government policy measures aimed at making the Australian economy more efficient and competitive by reducing tariff barriers erected in the 1950s to encourage industrialisation. A wide
range of industries have been adversely affected, most obviously steel, automobiles and the clothing, textiles, and footwear group.

At the same time, there has been substantial growth in other sectors of the national economy, particularly in the service sectors, where both business and financial services, and community services are showing significant growth.

The impact on the urban system is felt through the manner in which specific localities have higher concentrations of either growing or declining sectors of the economy. Given the differing concentrations of two of the more significant activities, (manufacturing, and producer services) and the fact that one is declining in relative importance while the other is increasing rapidly, there will inevitably be regional impacts on a variety of criteria. Changes in the level of economic activity affect the size and employment prospects of the workforce, and are reflected in indicators such as unemployment, wage rates, and workforce participation. These flow through to spending, investment, property prices and other measures of economic health which reflect differential opportunity within and between cities.

The significance of Sydney's dominance in financial services is symptomatic of a growing international role for that city. Not only is it the dominant international gateway to the country, a role it assumed with the switch of international travel from sea to air, but it has become the major focus for a range of both national and international head offices. The increase in these functions then promotes the growth of business services.

9.2 Demographic Transition

Two elements of demographic structure are of particular significance in terms of policy implications. The first relates to trends in household composition and size, and the second relates to the aging of the population. Both these processes have substantial implications for the development and nature of the urban and regional system.

Households are increasingly smaller, less married, and less likely to contain children. Nuclear families are still the largest group, but a much greater rate of growth has occurred in all other categories. The greatest increase occurred in the category of related adults (although there are some definitional problems between 1986 and 1991). However the overall trend is clear: although total households have grown substantially, the major growth has occurred in non-family households (lone person or group households). Within family groups the lowest rate of increase is in the traditional nuclear family, whereas single parent families, families of related adults and families composed of couples only are all expanding at a much greater rate.

The other element (not unrelated to changing family structure) concerns changes in the age structure of the population. The elderly (65+) as a percentage of those aged 15-64 shows a steady rise to 17 per cent in 1991. This figure is projected to rise to 19.5 per cent by 2011 and to an extraordinary 31.2 per cent by 2031.

These trends are not independent. An aging population will inevitably be in smaller households, and many of these will eventually end up living alone. These trends have particular significance for the nature of housing demand, and for the need for community services appropriate for an aging population.
The demand for housing has particular significance for many of the questions which have been raised in this study. Population movements and differential population growth imply shifts in the demand for housing. One assumption made regarding current housing provision is that the type of housing being added to the dwelling stock is not appropriate either locationally or in size and style terms to the changing nature of demand. However there are complex inter-relationships between housing demand, household type and size, and location which needs to be fully understood before significant changes are made to housing provision. Household structure is a dynamic characteristics from which it may be inadvisable to read off housing need from a cross sectional view. Households choose housing according to their expected rather than immediate needs.

9.3 Spatial Development

As the population of the country has grown, and as the economy has matured, there has been a cessation of the continuing trend toward concentration. The proportion of the population located in urban areas peaked at 86 per cent in 1976, and since then there has been a slight decline, with faster growth occurring in some non-metropolitan areas (Beer et al., forthcoming). In particular the traditional dominance of Sydney and Melbourne, and of the south east industrial heartland of the continent in general is being challenged. New growth poles are developing in the north and the west of the country.

The rapid growth in Queensland, and particularly the resort and retirement communities of the Gold and Sunshine Coasts is most prominent. Four of the country's seven fastest growing urban areas are in Queensland (although the Gold Coast does extend into northern New South Wales). It is significant that much of this growth is occurring outside the capital city of Brisbane, and is unrelated to the factors underlying much of the original impetus for urban growth (administrative and economic). Rather it is premised on an environment and economy increasingly oriented to leisure, recreation, service industries, and retirement communities.

However, there are two particular points to make about this trend. The first is that rates of growth are exaggerated in small newly developing areas. Queensland has smaller statistical local areas than most other states and this to a degree overstates the significance of growth and redistribution. Some of the larger shifts, particularly those on the outskirts of Sydney and Melbourne, are still absorbing higher numbers of population than are the fastest growing regions of Queensland.

The second point is that the large scale shift of population occurring through interregional migration is not being matched by economic development. Job growth in the faster growing areas is associated in large part with service activity (particularly in relation to tourism) but has not succeeded in attracting much high level manufacturing, or producer services. Investment in these categories of productive enterprise remains strongly concentrated in the largest metropolitan areas.

The slower growing or even declining regions are those most severely affected by structural economic change or by a marginal position in the Australian economy. The former conditions are most obvious the industrial cities of Newcastle, Wollongong and Geelong, while the latter apply particularly to the Tasmanian settlements of Hobart and Launceston, and to a lesser degree, Adelaide, although are being felt also in parts of the largest metropolitan areas (Stilwell, 1991).

Sydney's emergence as a world city is likely to accelerate, and while this will not reflect necessarily in population growth, it will continue to make Sydney an expensive place to live. The rising cost of housing together with an emphasis on jobs in either the producer services, or community and personal services, is likely to create a growing degree of social disparity.
Melbourne's role as a regional focus, a hub for national transport and distribution, and the home for a number of highly specialised and innovative activities, will continue although at nowhere near the pace of Sydney. Brisbane in fact may challenge Melbourne in some facets of activity in the longer term if the northern move of population persists.

The future of the other capitals is less certain. Perth's fortunes are very much tied to those of Western Australia, although its closeness to Asia could provide an advantage. Hobart and Adelaide on the other hand seem to have little prospect of reversing their relative decline despite both offering high quality living.

Outside the metropolitan areas growth and investment is sure to keep increasing in tourist areas - particularly the coastal areas of Queensland and New South Wales. Tourism, particularly from Asia will no doubt serve to push up the export earnings from this sector even further. Some localized growth will likely continue around some of the major provincial cities, but is unlikely to be directly linked to the growing internationalization of the economy. Further growth both in investment and in population will continue to concentrate on a relatively few locations. To the extent that innovation and productivity growth are dependent on the emergence of focused clusters of activity, then it is in the interests of government to foster the development of such clusters.

While there are some recognisably different concentrations of growth occurring within the Australian urban and regional system, the impact of past concentrations will continue to be felt through a consolidation of these concentrations, particularly in those cities with populations in excess of 1 million. It is at the middle and lower levels of the settlement hierarchy where the greatest spatial change is occurring - particularly with the growing emphasis on coastal retirement and leisure oriented investment, and away from locations dependent on traditional manufacturing activities. In absolute terms however, the greatest increases are still occurring in the largest cities and to that extent absolute concentration is still occurring. The continued growth of these metropolitan areas raises other questions about the sustainability of such growth but given that they provide the best developed infrastructure and the most effective set of economic linkages, it is inevitable that metropolitan concentration will remain central to enhanced economic development.

9.4 Regional Development and Competition

Changes in the distribution of economic activity is often discussed in the context of competitive advantage. While nationally it is relatively simple to get agreement on priorities and objectives, at a lower spatial scale regions and localities also see the need to attract growth in order to provide continued economic health and opportunity to that region. Such advantage can be seen in a number of guises. There are those which occur naturally such as climatic, or physical amenity attribute. There are cost advantages related to distance and accessibility. And there are institutional factors relating to the manner in which various levels of government act to enhance or otherwise encourage activity of a range of types within their area of jurisdiction.

Each of these factors can be seen to be important in the changes which are currently occurring in Australia. The substantial climatic range in Australia from the cool temperate south to the warm tropical north within national boundaries gives ample choice in a situation of unimpeded movement. Not many national environments contain the diversity in a single country that Australia does. In the context of a substantial worldwide growth in tourism and recreation pursuits, it is the north of Australia which has the most obvious comparative advantage in this factor. In conjunction with the major tourist attraction of the Great Barrier Reef lying off the coast of central Queensland, it is not surprising to see growth occurring in this region, and the recent establishment of an international airport at Cairns will serve to develop further the trend.
Likewise in terms of physical amenity, Sydney’s location around a picturesque harbour, and having excellent beaches on its doorstep has added a degree of attractiveness to that city which is not matched by others. Physical attributes on their own are not likely to provide great attraction, but when combined with the dominance Sydney has assumed as Australia’s international gateway because of the focus of international air routes on this destination, it gives some appreciation of the ability of Sydney to attract some of the higher level, image conscious, internationally oriented activities.

Variations in relative costs also help to explain some of the current processes on activity location in Australia. In some sectors of the economy, costs are uniform throughout the country. In others, there are substantial variations. Wage costs are one element which, because they are largely determined through a centralised wage fixing system, do not show much in the way of variation. Stilwell (1991) argues in fact that the uniformity in wage levels has acted as a force of concentration, because in the absence of substantial wage differentials there has been little incentive for economic activity to seek locations (particularly outside the metropolitan areas) which in other circumstances may reflect lower living costs through lower wage rates. EPAC (1991) however found that uniform wage rates had little impact on labour mobility. Energy costs and waste disposal on the other hand provide a concentrating force.

At the same time there are considerable differences in costs which can be related to relative accessibility. The great distances between centers of population within Australia, mean that the costs of distribution are high. Thus locations more centrally located areas have a comparative advantage in this area. Given the concentration of population and markets in the south and east of the country, the most advantageous position is the Sydney-Melbourne axis. In fact Melbourne has been strongest in manufacturing activity (particularly that for domestic consumption), and also in trade and distribution. Melbourne’s port handles a far greater volume of container cargo for example than does any other (O’Connor, 1992).

In Australia’s federal system competition clearly exists in the attraction of population and business activities. Both state and local government work to bring in activities which will generate jobs and boost revenue through taxes. The forms of attraction vary. In some cases it is in the form of less stringent planning requirements, and in others a more pro-active role in providing infrastructure which is directed toward encouraging development. The actions range from pure city boosterism, to attempts to attract events such as Olympic Games and Grand Prix. Other responses can be seen in what has been termed the ‘edifice complex’ where major projects designed to raise the profile of the region nationally or internationally are instituted. Thus the Darling Harbour development in Sydney, Expo in Brisbane, and the National Tennis Centre in Melbourne are all products of a drive to maintain or increase national and international image and competitiveness. Whether the expenditure is effective, or the extent to which more socially desirable projects are precluded, is difficult to determine. There is however little doubt that a good deal of attention is focused on those projects which will contribute most to image and exposure without any necessary relationship to overall community benefits. The large scale overbuilding of the central cities in Australian urban areas in the last five years is a by-product of this type of activity where the large cities in particular are anxious to foster an image of vitality.

9.5 Overview

In summary there are signs of a significant change in the processes affecting population distribution and settlement geography at the national level. The major metropolitan areas, so long the focal point for growth, are no longer so dominant in capturing both the absolute and relative population growth and to some extent are concerned by this. This is a product of the combined effects of structural economic change, demographic shifts, and a growing emphasis on lifestyle and consumption patterns
for a growing section of the populace who are either past working age, are engaged in the rapidly growing tourist industry sector, or who for other reasons such as unemployment, life style preferences, etc. are more oriented to climate and environment than to economic necessity. The trend toward differential population growth from the south east of the country to the north and west has become a well established part of population dynamics. Rather than a deconcentration of the metropolitan population however, it represents another form of concentration, particularly in the coastal regions of northern New South Wales and Southern Queensland. As such, this redistribution can not be regarded as a panacea to the problems caused by the earlier metropolitan concentration.

At the same time, immigration is sustaining the growth of the larger cities of Sydney and Melbourne. The net gain in immigrants is more than compensating for the loss of population through internal migration. Were immigration rates to fall however, the impact on the population levels of these two areas is difficult to predict. Although population decline could be a result, it is more likely that the rate of outmigration from these cities would fall, as much through a lessening of opportunity to move, as through a declining effect of push factors.

At the same time, the Commonwealth acts to ameliorate economic differentials between the state through a process of vertical redistribution occurs in Australia, as a result of the Commonwealth government having a monopoly over income tax powers. The process, known as fiscal equalisation (Fletcher, 1992) sees income tax revenue collected by the Commonwealth government distributed back to the States through the Commonwealth Grants Commission. There is considerable competition for these funds, and the outcome has been a greater per capita contribution from Victoria and New South Wales, and a net excess of receipts over contribution for the other states. While the larger states have argued for an equal per capita redistribution there are complicating factors in relation to interstate equity because it is these large states which are the beneficiaries of much of the industry protection which is currently afforded and which imposes costs on the residents of other states.

There are some obvious differences in the revenue raising tactics adopted by the various state governments. One is in the area of taxes and charges. Although the states do not have the power to tax income, there are a host of other means by which state revenue is raised. These include charges such as payroll taxes, stamp duties, tax on financial transactions and gambling, and fees from motor vehicle registrations and franchises. Collins (1990) demonstrates the variations in both the rates and types of taxes levied. On his calculations, average state and local government taxes per head of population in 1987/8 varied from a high of 1313.8 in New South Wales to a low of 649.5 in the Northern Territory. Only New South Wales and Victoria were above the mean for all states. Of course there are substantial interstate differences in taxable capacity so that these figures themselves are not necessarily evidence of differential charges.

In the context of a more efficient and productive economic sector in Australia, it is argued here that regional policies designed to improve the performance and dynamics of local clusters of activity, are an additional tool to be considered. To the extent that fiscal equalisation is already a regional policy re-examining the basis of that redistribution might be a good place to start.

9.6 Policy Directions

The general conclusion from this overview is that there needs to be a full exploration of the range of instruments and opportunities available to encourage and assist the economic development of cities and their constituent parts. In particular, initiatives in key areas such as education and training, research, and innovation (as a key part of science and technology policy) are central to developing dynamic clusters of businesses within our cities. While the Kelty transport, financial and other initiatives are important, initiatives in upgrading education, training, research capabilities and
innovation are at least as important and, according to Porter, probably more important for government policy, as means of encouraging the development of national and regional competitive advantage.

9.6.1 Creating the Conditions for More Competitive Production

The first element of our framework to enhance Australia’s competitive edge related to the need to lower costs and raise production. Aspatial macro-economic initiatives such as deregulating the finance system and reducing tariff barriers have achieved some progress in this area. However, macro-economic policies are a necessary but not sufficient set of measures.

A similar argument related to micro-economic reform. The aspatial character of these two policies mean that they are unable to be sufficiently targeted to localities where the potential pay off is greatest. Aspatial economic policies need to be complemented by finely tuned and carefully targeted programs which aim to develop linkages, improve skills and better manage economic activities in specific localised areas.

One aspect of this argument is the need to increase infrastructure expenditure, particularly in those regions where trade exposed sectors are most prevalent, and where major transport nodes exist. Infrastructure expenditure has declined substantially in the past few years and recent research shows lower private rates of productivity increase. There needs to be a lift in infrastructure expenditure. But increases need to be carefully targeted, both spatially and functionally.

The recent McKinsey Report, *Business Investment and Regional Prosperity: The Challenge of Rejuvenation*, argued that while business did not see infrastructure as a major constraint on their investment growth there was a concern about Australia’s commitment to maintaining current infrastructure levels.

This accords with our findings both that infrastructure is a critical issue - (it is a necessary although not sufficient element in enhancing competitiveness), and that infrastructure investment spending has slipped, which is also in accord with the fear of a lack of commitment, and therefore an unwillingness of private enterprise to commit their own resources.

Support for this position is contained within the work of Aschauer (1989), De Long and Summers (1991), and Dowrick (1994). All stress the importance of investment in physical capital in the growth process and the large spillover benefits generated by such investment. These arguments stem from the new endogenous growth theory which views technological change as being embodied in physical or human capital, a very different approach to the traditional neo-classical model which assumes technological changes is exogenous. The endogenous growth theory view thus sees investment as essential to the technological progress of an economy. Some new Australian results supporting this position were summarised in Chapter 2 of this report.

The necessary infrastructure expenditure has to be broad. For example Neville (cited in EPAC, 1994:10) highlights the need to relate investment in physical capital to that for human capital. Thus there are important policy implications in terms of the provision of high levels of education as well. The quality of the workforce is a major issue identified in the recent White Paper (Working Nation, 1990).

A further element relates to pricing issues. Infrastructure needs to be better managed and such management questions include pricing both as a more efficient use of infrastructure and helping to fund new investment (e.g. moving towards a beneficiary pays model).
Specific recommendations of this report relate to the need to promote Commonwealth initiatives in infrastructure development, particularly related to port and airport development, roads (but specifically roads which will enhance industry linkages and accessibility). The current National Highway Strategy and the National Rail initiatives are examples of the coordinated and cooperative approaches which need to be developed further.

9.6.2 Building the Foundation for Innovation

Although less direct than measures specifically lowering the cost of production, building the foundation for an innovative economic climate is becoming increasingly central to Australia’s future competitiveness. The shift from production based to knowledge based activities means that economic activity is much more footloose than previously. Firms and decision makers, freer of traditional locational constraints, are able to make locational decisions on more intangible factors such as climate, cultural milieu and quality of life issues. It is the fostering of linked and interacting knowledge based industries which will enhance the innovative process.

Creating such conditions is outside the realm of macro-economic measures. Likewise there was little attention given to the importance of fostering a climate of innovation by the Kelty Committee. Yet advanced or specialised factor development and the development of creative regulation are elements which can build such an environment. These includes, under advanced factor creation:

- Research and Development institutes.
- High level educational facilities.
- Fostering networks e.g. via REDO’s.
- Advanced telecommunications.
- Developing quality of life factors.

and as part of ‘creative regulation’ and demand development

- Socially leading regulations.
- Purchasing policy.

In order to make progress in this case, there are a number of actions which can be recommended. In terms of advanced factor development, it is desirable to:

- Identify specific spatial clusters and how to foster their development consistent with existing competitive strengths.
- Look toward future growth by establishing conditions through which competitiveness can be enhanced but without picking winners.
- Seek to tie these actions to Commonwealth funding of education.

In terms of developing Creative Regulations and impact on demand for new and innovative goods and services, it is necessary to:
• Identify opportunities for socially leading regulations.

• Overcome areas where we lag (e.g. motor vehicle fuel consumption).

• Identify areas where government purchasing programs can be used to encourage innovation (e.g. purchase of products made from recycled materials).

The conflicting nature of measures based on efficiency criteria vis-à-vis those concerned with equity, will be apparent. While clusters of activity can be sought everywhere, the approach of spreading the benefits of investment widely but thinly is unlikely to be effective. More effective in raising competitive abilities will be a focus on a few localities to ensure a high level of infrastructure as well as social and cultural environments which will prove attractive to knowledge based activities, and thus assist in the development of synergistic grouping of activities.

9.6.3 City as Product

The ability of an urban environment to generate economic activity as a product in its own right is dependent partly on physical attributes (the presence of water bodies is particularly important), partly on the built environment, and partly on the cultural milieu. These three factors in concert can act to enhance export potential through:

• Increasing the basis of tourism potential.

• Ensuring a high quality of life to attract entrepreneurs.

They can also improve the quality of life of existing residents, which itself may contribute to a more dynamic environment.

Physical attributes cannot be created but they can be maintained thoroughly. For example clear beaches are an attractive element, whereas polluted beaches are not.

The built environment can be enhanced through new construction (as with a Sydney Opera House or National Tennis Centre), but can also be preserved as with historic streetscapes or buildings.

The issue of regulation is of significance here as well. Land use regulation and development controls can preserve the character of areas which may have inherent attractions, although few direct economic benefits may be apparent in the short-term.

Further cultural capital is provided by the diverse population of Australian cities. The multicultural link with character gives not only diversity in population and services but once again enhances the cultural milieu.

Recommended actions focusing on this element relate to:

• The identification of key cultural infrastructure components.

• Build clusters or precincts of activity (such as Melbourne’s Arts precinct).

• Ensure appropriate institutional and planning approaches which maximise the appeal of cities by fostering niches which can be marketed.

• Connect with the agendas of the Urban Design Taskforce.

• Assess the significance of cultural tourism and accord it a similar status to eco-tourism.
9.7 Delivery Mechanisms and Institutional Innovation

Economic development at a local level requires a balance between local government and regions for effective delivery. Except in Brisbane (and now Geelong) problems of parochialism at the local level may require a more aggregate approach but the Commonwealth does not have direct instruments to achieve this result. However, if regions can be empowered via mechanisms such as Kelty’s REDO’s (including use of regional pooled development funds), the ability to mobilise resources and capital at a regional scale should be enhanced. This will not happen without quite specific government action.

The need is for cooperative intergovernmental arrangements, in which each level has its respective role clearly defined, and where cooperative arrangements are carefully and clearly spelt out.

Amongst the institutional arrangements under consideration, the role of the Grants Commission and the future of fiscal equalisation needs to be reviewed. Currently the older states which are bearing the brunt of restructuring are contributing excessively, while some of the states receiving support through this mechanism are taxing at a lower rate. The equity argument established by the Grants Commission appears increasingly out of kilter within this environment of massive structural change.

Specific recommendations from this section are:

- Support the notion of Regional Economic Development Organisations suggested in the Kelty report.
- Mobilise local government borrowing and enable access to finance through tapping into superannuation funds. As little as a 1 per cent investment from this source could be a significant boost.
- Develop intergovernmental models for clustering support and development.
- Devise Commonwealth funding for relevant initiatives.
- Define roles of levels of government such that a cooperative approach can be fostered.
- Review the role of, and criteria used by, the Grants Commission in financial allocations to the states/territories.

Overall there is strong evidence that urban policy initiatives have the potential to enhance greatly the competitive position of the Australian economy. Measures which reduce the costs of doing business, which enhance the social and environmental milieu and thus foster a positive business and research environment and which develop the attractions of specific locations will not only aid the development of existing enterprise, but encourage the attraction and development of a greater level of activity. Australia faces a challenge to capitalise on both its existing knowledge and skill base, and on its geographic position on the Pacific rim. The full potential of the situation can only be achieved with some carefully thought out long term measures to aid the development of an environment which is socially and physically, as well as economically advantageous.
BIBLIOGRAPHY


Maher, C. and Stimson, R.J. (current research being undertaken for the Bureau of Immigration Research).


