# NESTED DYNAMICS OF METROPOLITAN PROCESSES AND POLICIES - *MELBOURNE*

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November 1984
CP-84-47

*Contribution to the Metropolitan Study: 12*

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FOREWORD

BACKGROUND PAPERS FOR THE METROPOLITAN STUDY: 1

The Project "Nested Dynamics of Metropolitan Processes and Policies" was initiated by the Regional and Urban Development Group in 1983 and work on this collaborative study started in 1983. This series of contributions represent "entry tickets" to the Project, i.e., initial statements by authors from individual metropolitan regions that are participating in the Project's network.

The aim of these papers is threefold. First, to provide some background information describing the processes of change within four principal subsystems: population, housing, economy and transportation. Second, to identify major trends and crucial policy issues which are to constitute a focus for the subsequent analytical and modeling work. Third, to facilitate comparative studies of development paths among these regions and the dynamic interdependencies between the above subsystems.

The background material contained in this paper pertains to the Melbourne metropolitan region.

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November 1984

ACKNOWLEDGEMENT

The perceptive comments of Dr. Kevin O'Connor (Victorian Ministry for Planning and Environment) and the IIASA reviewers have resulted in several important revisions to this manuscript. For their valuable insights, the authors wish to express their gratitude.

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## 1. INTRODUCTION

Australia is among the most urban of nations (with approximately 86 per cent of its population classed as living in urban areas) in a country whose population density is roughly 2 persons per square kilometre. Australia's pattern of urban development, and that of Melbourne, its second largest city (at 2.75 million) reflects the operation of several powerful external factors in addition to the internal dynamic of individual centres.

In studying the dynamics of Melbourne's growth and development we adopt the framework which has been outlined by Daly (1982) and others (e.g. Newton and Taylor, 1984) which recognises the interplay of both external and internal forces. With regard to the external factors, distinction is made between controlling forces and interactive forces. The controlling forces are located within the general process of capitalist development: i.e. developing the new industries (via technological change, including both process and product innovation) and accumulating (and directing movement of) capital, both of which help fuel sudden upsurges in city growth. The interactive forces, including technology transfer, trade, movement of capital and migration serve to link capitalist economies in different parts of the world.

The role of the city in the international economy is central. Metropolitan growth, therefore, derives, in the first instance from the export-oriented demands of basic or routine industry and, via multiplier effects to non-routine service industry. Metropolitan growth is affected, therefore, when the restructuring of national economies is required in order that export-oriented industry remains internationally competitive. Appraisals and re-appraisals of what goods are to be

produced and where have exerted significant impacts on the growth patterns of urban centres over time.

## 1.1 Spatial Trends

Three distinct phases appear to characterise the path of urban development in advanced capitalist societies to date (after Nijkamp, 1983; Hall, 1984).

1. urbanisation: a growth of cities in an economic and demographic respect, implying strong agglomerative forces and innovative efforts.
2. suburbanisation: a further economic growth of cities (especially in the tertiary sector) accompanied by a flight of population to the suburbs (in this stage the city remains the heart of innovative opportunities).
3. dispersal: a decline of cities from both an economic and demographic stance; growth of non-metropolitan centres; urban revitalisation in inner areas of the larger cities.

By the end of the second world war the process of urbanisation had, to all extent, finished in most advanced western industrial societies. With the focus of background papers on the past 40 years of metropolitan development the challenge is to identify those factors which have been responsible for initiating the major transitions in the growth of the city and in the internal changes which have occurred in the distribution of different population groups, housing submarkets, and workplaces.

## 1.2 The Study Area

From its inception, Melbourne has dominated urban development within the state of Victoria. It now contains over 70 per cent of the State's

population compared to its nearest rivals, Geelong (3.3 per cent), Ballarat (1.6) and Bendigo (1.4) (see Figure 1.1). In the national context Melbourne accommodates almost one fifth of the country's population. With its 56 local councils ranging in population from 8600 (Port Melbourne) to 122 500 (Waverley), Melbourne (see Figure 1.2) has become the nation's giant in terms of the number of governmental units within a metropolitan area (this pattern of fragmentation brings its own set of problems, discussed in more detail in a later section).

For this study, however, Melbourne is sub-divided into three zones: the inner city (comparising eight municipalities), the middle ring suburbs (twenty six municipalities) and the periphery (comprising the remaining twenty two municipalities) (Figure 1.2). Such a division captures the historical phases of urban development for the city reasonably well (Figure 1.3) but perforce introduces a significant level of heterogeneity for most socio-demographic, housing and industry attributes. For this reason, we employ 6 regions in some of our discussion.

1.3 Historical Background Factors in Melbourne's Development

Briefly, these include:

1. Geographic attributes. Until the relatively recent technological advances in transport and communication the nation has been relatively isolated at a global level. In addition to its isolation the continent is arid, with approximately 70 per cent of the land being desert or semi-desert. The continent was sparsely settled prior to European (British) occupation in the latter part of the eighteenth century; and from the earliest period the population has been located primarily on the fertile coastal margins. Its numbers

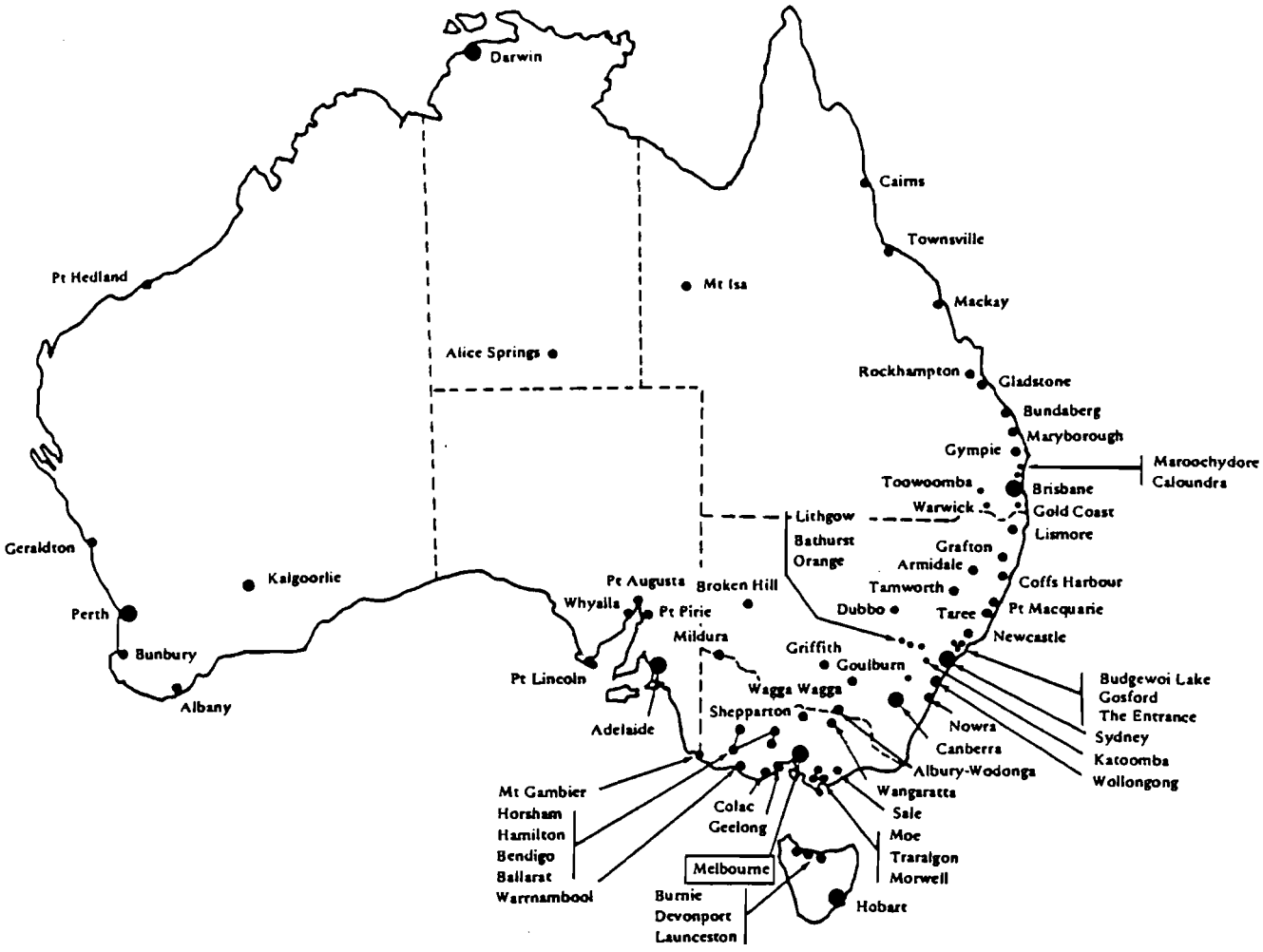


Figure 1.1 The Location of Melbourne in the Context of Australia's Urban Areas.

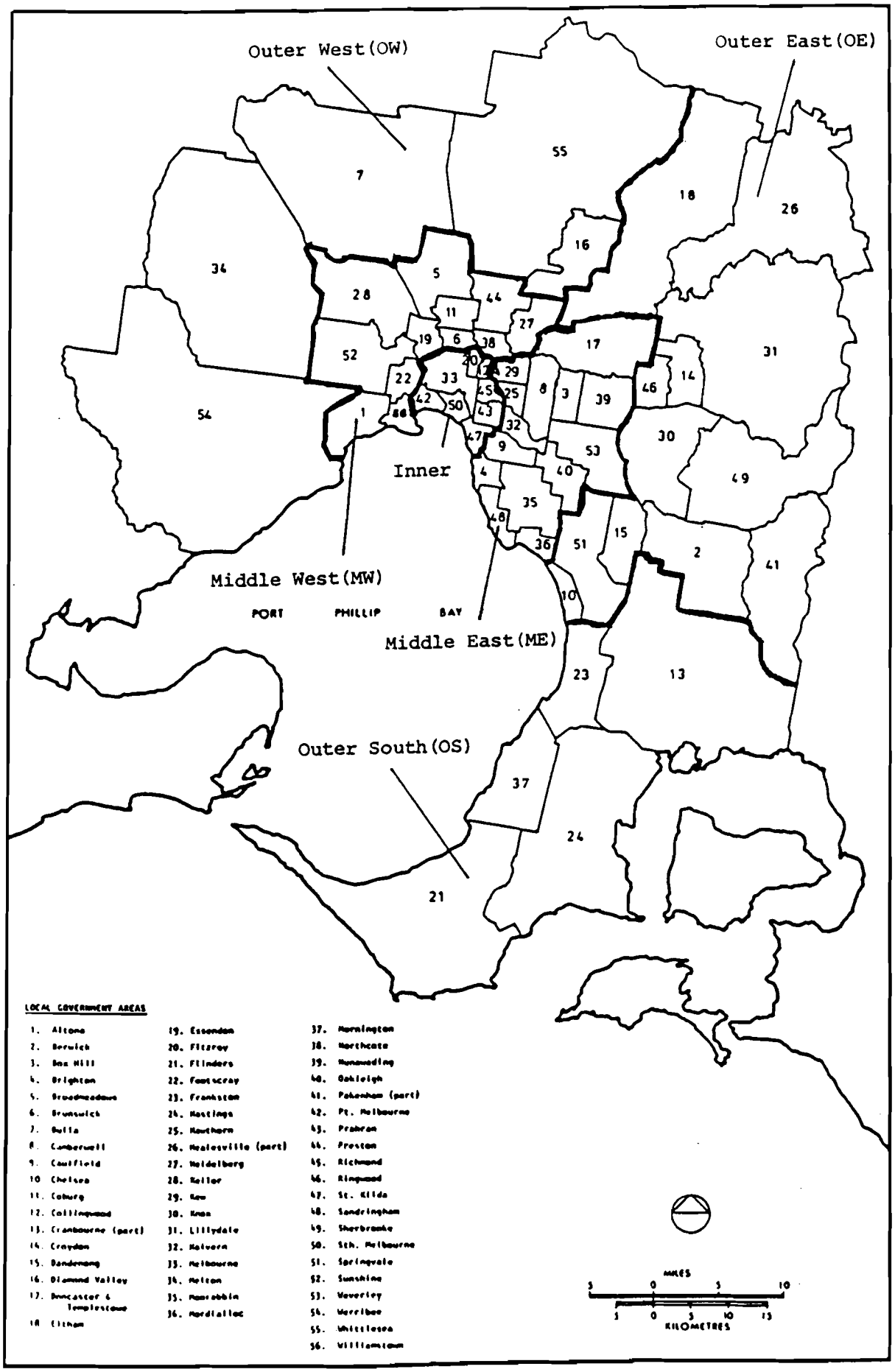


Figure 1.2 Melbourne Statistical Division.

are relatively small (14.5 million) and immigration has played a major role in populating its cities (Rowland, 1983).

As Stilwell (1974, p.62) records, relatively few factors were responsible for the initial settlement of the capital city areas. In the case of Melbourne, they involved centrality to potential agricultural areas and concerns of defence and security. Despite the irrelevance of such locational factors in the late twentieth centry, 'the basic pattern of cities that now characterises the nation was established in these early years of white settlement'.

2. Political system. Australia comprises several states (originally colonies) which, until Federation in 1901, were governed from London. Then, as now, particular settlement forms developed to serve the administrative requirements of the state and the economic demands of private enterprise. Historically, both have been closely interwoven. The federal system of political organization adopted in the twentieth century, while preventing any one city from becoming dominant, tended to reinforce the dominance of each capital city within its own state (see Figure 1.4). Stilwell (1974) points to the concentration of administrative functions and the focus of the state rail network (whose gauge varied from those in adjacent states) on the capital cities as a source of their continued growth at the expense of the non-metropolitan areas. Newton and Johnston (1981) also highlight the fact that Melbourne is the power-base of the Victorian state parliament, dominated as it is by two thirds of all sitting members.

3. Economic system. Australia currently occupies a semi-peripheral

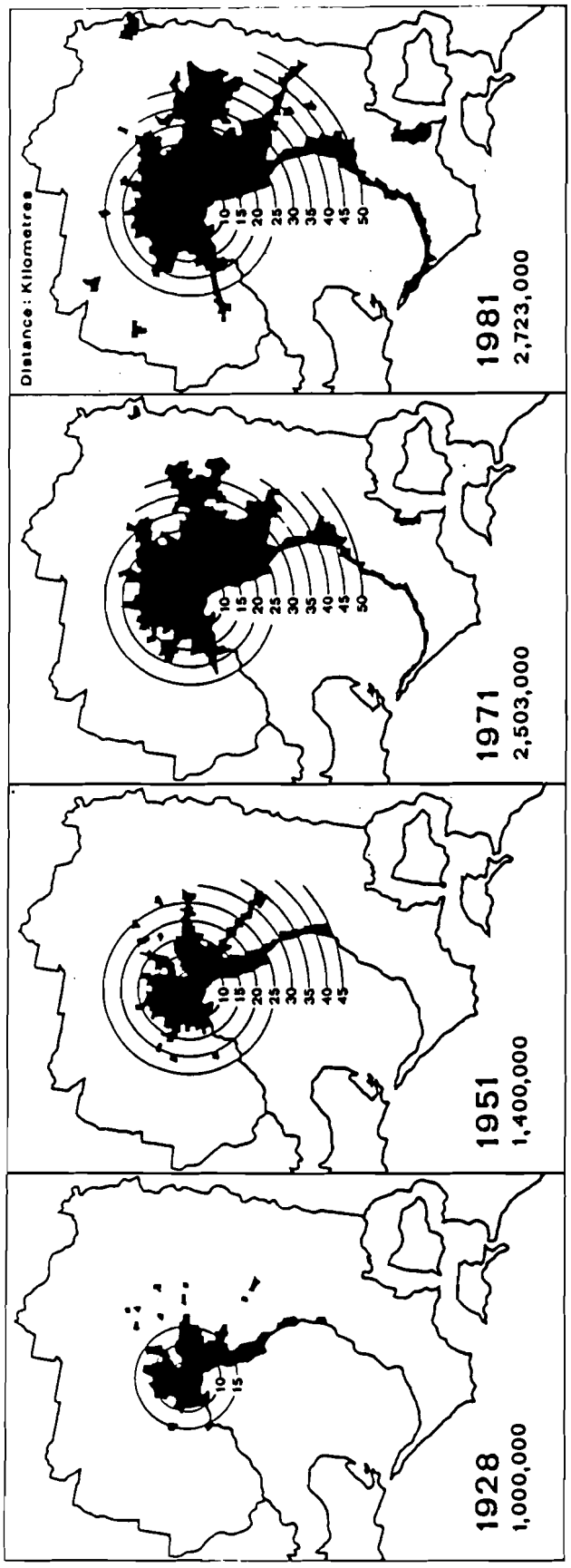


Figure 1.3 Historic Pattern of Metropolitan Growth.

position within the world economic system in terms of its international trade dominated as it is by the export of primary and mineral (as opposed to manufacturing) products (Figure 1.6). Over 60 per cent of Victoria's current export earnings also derive from primary products (principally wool, meat, wheat and dairy). Elements of the dependency relation established during the colonial era when the port of Melbourne occupied a strongly commercial role (importing a range of commodities from Britain in exchange for natural resources) remain in different guises to the present, but continue to involve the central features pertaining to flows of capital, technology, goods, and people. As Daly (1982, p.138) comments:

> 'Austalia, with a small population and inadequate domestic savings, was unable to finance the large capital developments projected for the 1980s. This was not new. At each decisive step in the nation's development, Australia has had to rely on foreign capital and foreign manpower to support her growth. The reliance on these external sources has imbued every facet of Australia's development, including the growth of her cities, and even the fluctuations of their property markets'.

The cyclical nature of metropolitan growth which has typified Melbourne is due to the central role that such cities play in linking the Australian economy with the rest of the world. The 'jerky' process of growth characteristic of world capitalism necessarily impacts on member countries of the global economic system. Further details of economic performance and workplace trends for Melbourne are presented in Section 4.

(1) Melbourne's share of State population (%)
(2) Melbourne's share of National population (%)
(3) Melbourne's annual average growth rate (%)
(4) Australia's annual average growth rate (%)

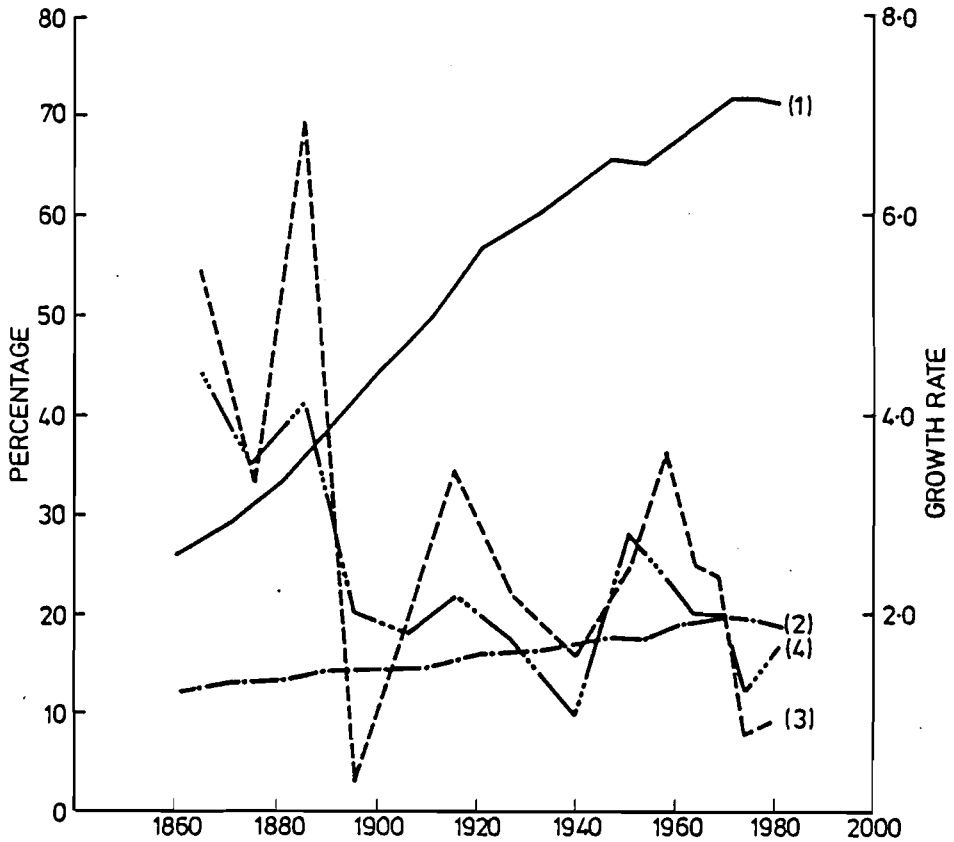


Figure 1.4 Population Trends.

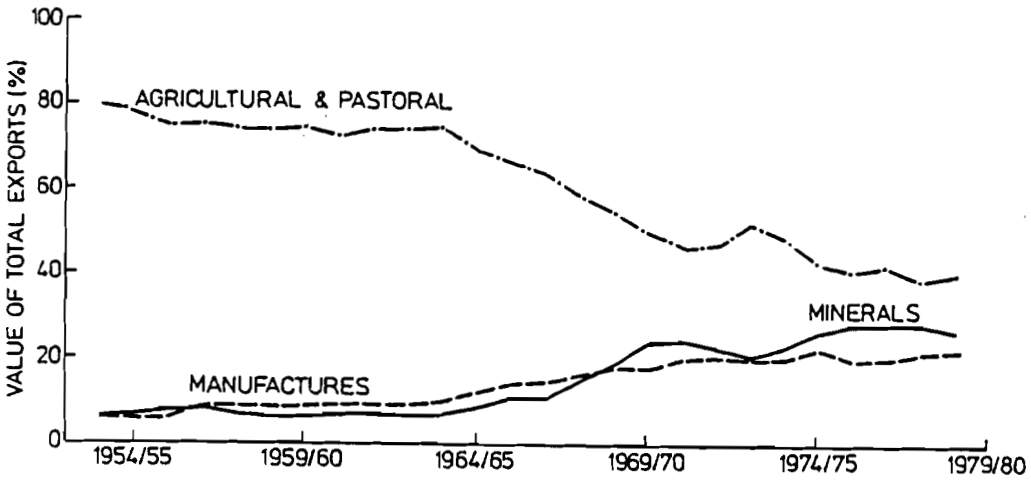


Figure 1.5 Australian Exports by Industry Sector.

## 2. POPULATION TRENDS

Analysis of census data over the past 35 years has confirmed the occurrence of several significant shifts in Australia's demography, most

Table 2.1
Population and Housing Profiles for Melbourne Statistical Division[a], 1954-81

| | 1954 | 1961 | 1966 | 1971 | 1976 | 1981 |
|---|---|---|---|---|---|---|
| Total population | 1,589,185 | 1,984,815 | 2,230,580 | 2,503,450 | 2,604,035 | 2,772,817 |
| Total population as per cent of Victorian total | 64.8 | 67.7 | 69.3 | 71.5 | 71.4 | 71.0 |
| Annual inter-censal growth rate (%) | 2.5 | 3.2 | 2.4 | 2.3 | 0.8 | 0.9 |
| Age of population (years); | | | | | | |
| % 0-4 | 9.7 | 9.9 | 9.5 | 9.7 | 8.6 | 6.9 |
| % 5-14 | 16.2 | 18.2 | 18.0 | 18.1 | 18.0 | 16.5 |
| % 15-24 | 12.4 | 14.4 | 16.8 | 17.5 | 17.3 | 17.2 |
| % 25-34 | 16.3 | 13.9 | 13.0 | 14.1 | 15.8 | 16.6 |
| % 35-44 | 14.6 | 14.4 | 13.9 | 12.3 | 11.7 | 12.3 |
| % 45-54 | 12.4 | 12.0 | 11.6 | 11.5 | 11.5 | 10.3 |
| % 55-64 | 9.8 | 8.7 | 8.6 | 8.5 | 8.5 | 9.0 |
| % >65 | 8.9 | 8.8 | 8.7 | 8.2 | 8.7 | 11.2 |
| Marital status: | | | | | | |
| % Never married | 44.4 | 46.6 | 46.9 | 46.1 | 45.4 | 45.5 |
| % Married | 47.5 | 46.0 | 45.5 | 46.2 | 46.1 | 44.9 |
| % Separated | 1.6 | 1.6 | 1.6 | 1.6 | 2.0 | 1.9 |
| % Divorced | 0.8 | 0.8 | 0.8 | 1.0 | 1.5 | 2.7 |
| % Widowed | 5.8 | 5.2 | 5.2 | 5.1 | 5.0 | 5.1 |
| Birthplace: | | | | | | |
| % Australia | 83.1 | 77.1 | 74.5 | 72.5 | 72.9 | 71.1 |
| % Outside Australia | 17.2 | 23.1 | 25.5 | 27.5 | 27.1 | 28.9 |
| Women in workforce: (as % of women 15-64) | 37.3 | 40.4 | 46.4 | 47.3 | 53.6 | 56.1 |
| Fertility ratio (children 0-4 as ratio of women 15-44 times 100) | 45.4 | 47.3 | 44.6 | 44.9 | 38.4 | 30.6 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Youth dependency (0-14 as ratio of 15-59 times 100) | 42 | 47 | 45 | 46 | 44 | 39 |
| Aged dependency (60+ as ratio of 15-59 times 100) | 23 | 22 | 21 | 20 | 21 | 21 |
| Class of dwelling: | | | | | | |
| % Self-contained flat | 5.9 | 8.8 | 13.3 | 15.1 | (b) | (b) |
| Nature of occupancy: | | | | | | |
| % Owner | 63.7 | 70.7 | 73.1 | 69.6 | 69.6 | 70.9 |
| % Tenant - SHA | 3.5 | 3.2 | 3.5 | 3.6 | 2.9 | 2.6 |
| % Tenant - other | 24.9 | 17.6 | 21.6 | 22.5 | 20.1 | 20.0 |
| Motor vehicles per dwelling: | | | | | | |
| % No vehicle | - | - | 26.5 | 22.5 | 17.3 | 15.0 |
| % 1 vehicle | - | - | 70.2 | 75.2 | 78.5 | 81.5 |

Notes: a. The tabled figures relate to the area covered by the Melbourne Statistical Division as defined at 30 June 1971; the maintenance of a constant area base has necessitated some data estimation for 1954 and 1961.

b. Comparable figures not available.

of which are fundamental to any consideration of long-term change in its metropolitan systems.

## 2.1 Population growth

The quarter century following the second world war represented a period of sustained population growth for Australia in general and Melbourne in particular (see Figure 1.4 and Table 2.1). The 1970s, however, witnessed a sharp decline (Figure 2.1), necessitating a major (albeit belated) reconsideration of Melbourne's metropolitan planning strategy, predicated as it had been on expectations of continued high rates of growth (see Section 6; also, Newton and Johnston, 1981). It should be noted, however, that since the late 1970s there has been a slight upturn

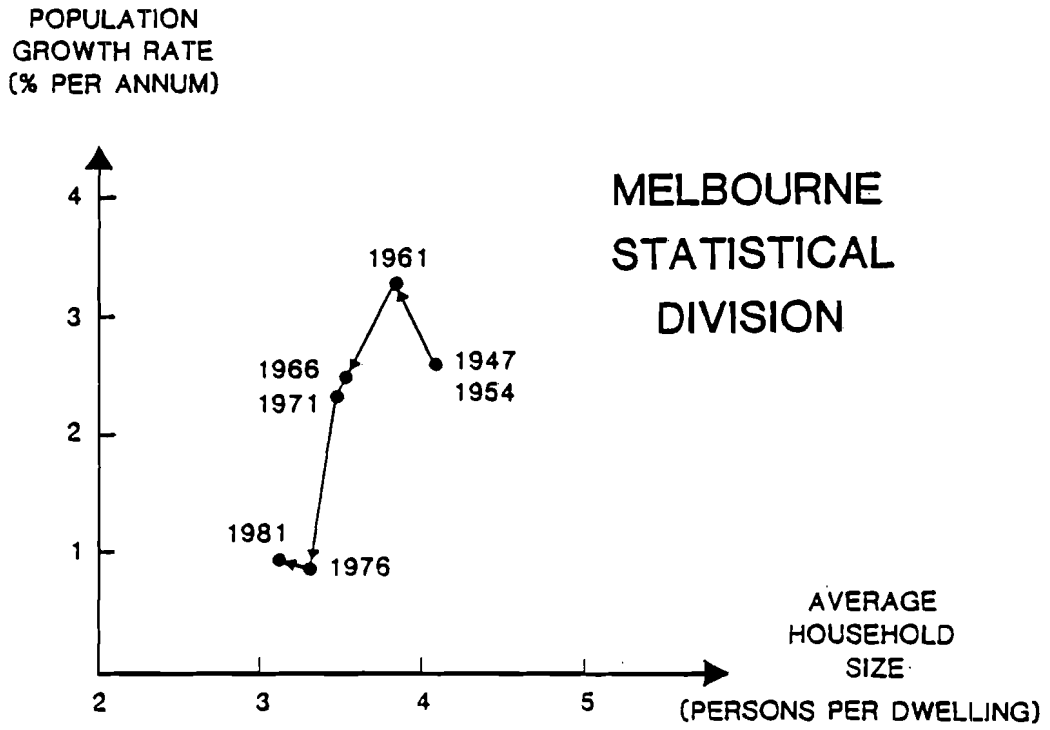


Figure 2.1 Population Growth/Household Size Trajectories, Melbourne 1947-1981.

in growth rate, due largely to an upsurge in net overseas gains (Hugo, 1983).

## 2.2 Overseas migration

As mentioned in the Introduction, major bursts of growth in Australia's cities have been associated with overseas migration. The largest influxes have occurred since the second world war. In 1947, 125 000 persons (9 per cent) of Melbourne's population were born overseas. By 1981 the overseas born figure had reached 755 000 persons or 29 per cent of the population (approximately 50 per cent of Melbournians were either born overseas or had at least one parent born overseas). Major birthplaces of the non-Australian born in 1981 were the United Kingdom and Ireland 210 000 (28 per cent), Italy 102 000 (14 per cent), Greece 70 000 (9 per cent), Yugoslavia 52 000 (7 per cent) and Germany 27 000 (4 per cent). A higher intake of migrants from Asia and the Middle East in recent years represents a major break with earlier policies (see Table 2.1), and represents one of the more noticeable changes to the 'face' of the city since the uptake of Southern European migrants in the 1950s.

## 2.3 Natural increase

Births have contributed a declining share of population growth (in absolute as well as relative terms) in Melbourne since the early 1970s (Table 2.1). The principal contributing factor here has been a decline in fertility among women: the child-woman ratio, albeit a rough measure of fertility, (Table 2.1) affirms this fact.

The fact that births have not declined more dramatically (nor in the 1980s are likely to decline markedly - perhaps even increase, according

to Hugo, 1983) is due largely to the operation of an 'echo effect' whereby the large cohorts of 'baby boom' children born in the 1950s and 1960s begin to marry and have children.

Table 2.2

Birthplace of Population, Melbourne 1947-81

| | 1947 | | 1954 | | 1961 | | 1966 | | 1971 | | 1976 | | 1981 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N(000) | % | N(000) | % | N(000) | % | N(000) | % | N(000) | % | N(000) | % | N(000) | % |
| Australia | 1101 | 89.8 | 1262 | 82.8 | 1467 | 76.8 | 1662 | 74.5 | 1816 | 72.5 | 1897 | 72.9 | 1968 | 72.3 |
| New Zealand | 8 | 0.7 | 8 | 0.6 | 8 | 0.5 | 9 | 0.4 | 13 | 0.5 | 14 | 0.5 | 23 | 0.9 |
| UK & Ireland | 87 | 7.2 | 122 | 8.0 | 155 | 8.1 | 192 | 8.6 | 244 | 9.0 | 215 | 8.3 | 210 | 7.7 |
| Other countries of Europe | 20 | 1.7 | 122 | 7.4 | 246 | 12.9 | 321 | 14.4 | 375 | 15.0 | 369 | 14.2 | 367 | 13.5 |
| Asia & M. East | 4 | 0.3 | 10 | 0.7 | 18 | 1.0 | 24 | 1.1 | 42 | 1.7 | 66 | 2.5 | 102 | 3.8 |
| Other | 4 | 0.3 | 7 | 0.5 | 14 | 0.8 | 20 | 0.9 | 31 | 1.3 | 41 | 1.6 | 50 | 1.8 |

## 2.4 Age structure

Changes in the age structure of the population are of particular significance in the context of urban service and infrastructure provision. The nature of past and projected demographic change in a metropolitan region can be traced from the age profile of its present population.

Inspection of Melbourne's age structure over the post-war period reveals an ageing of the city's population (Table 2.1). This is reflected in the reduction in youth dependency and a stable aged dependency ratio (despite the numerical strength of the 15-59 year age group). The dependency ratios calculated by the above procedure are significantly

affected by the fertility and mortality levels prevalent in the population. In relation to the latter, Hugo (1983) indicates that there have been considerable improvements in life expectancy across all ages during the 1970s; and that the decrease in mortality in older ages has, if Australian experience mirrors that of the US, been accompanied by rising morbidity among middle aged and older people.

The age profiles displayed in Figure 2.2 reveal major bulges reflecting past fluctuations in fertility and migration (e.g. the low fertility and near zero net migration from overseas during the depression years of the 1930s is evident in the relatively low proportion of persons in their twenties in 1961). The impact of persons born during the postwar baby boom period (1947-61) will continue to exert their impacts in relation to their changing age-specific demands, e.g. maternity hospitals, primary schools, secondary schools, then tertiary institutions, the job market, then the housing market and later, depending upon levels of disposable income, will exert pressure on the leisure and holiday market or, depending upon levels of morbidity, the health system, pensions, old age homes and so forth. The age profile for Melbourne also reveals a 'bulge' poised to enter the older age groups (a function of higher levels of fertility in the early part of this century plus the influx of a large number of young adult immigrants arriving in the city in the two decades following the second world war); and the 'hollow' developing at the base of the 1981 profile (for those aged under 9) has a set of consequences which will follow that cohort as it matures, namely an absolute reduction in level of demand.

## 2.5 Household composition

Household composition and family structure have changed markedly in the

post-war period; a fact which has important implications for housing demand in particular (Burke et al., 1984). The number of families in Melbourne increased by 48 per cent between 1966 and 1981 from 618.3 to 915.8 thousand, while the total population grew by 24 per cent. Several factors account for the increased rate of household formation over this period: immigration, maturation of the 'baby boom' generation, an increased propensity of young people to leave the family home before marriage, the tendency for older people to remain in their own homes longer or enter institutional care and the impact of higher levels of divorce and separation. These changes are reflected in the famly structure profiles for Melbourne in 1966 and 1981 (Table 2.3).

Table 2.3
Melbourne: Distribution of Family Types: 1966-1981

| Family type | 1966 | | 1981 | | Change 1966-1981 | |
|---|---|---|---|---|---|---|
| | No('000) | % | No('000) | % | No('000) | % |
| Head only | 99.1 | 16.0 | 218.5 | 23.9 | 119.4 | 120.5 |
| Head and dependents only | 16.9 | 2.7 | 42.3 | 4.6 | 25.4 | 150.3 |
| Head and spouse only | 124.7 | 20.2 | 193.0 | 21.1 | 68.3 | 54.8 |
| Head, spouse and dependents | 180.5 | 29.2 | 265.6 | 29.0 | 85.1 | 47.1 |
| Head and other adults only | 38.7 | 6.3 | 42.8 | 4.7 | 4.1 | 10.6 |
| Head, other adults and dependents | 8.5 | 1.4 | 11.8 | 1.3 | 3.3 | 38.8 |
| Head, spouse and other adults | 71.6 | 11.6 | 70.8 | 7.7 | -0.8 | -1.1 |
| Head, spouse, other adults and dependents | 78.3 | 12.7 | 71.0 | 7.8 | -7.3 | -9.3 |
| Total | 618.3 | 100.0 | 915.8 | 100.1 | 297.5 | 48.1 |

Source: Australian Bureau of Statistics
Note: 1966 data refers to Metropolitan Melbourne

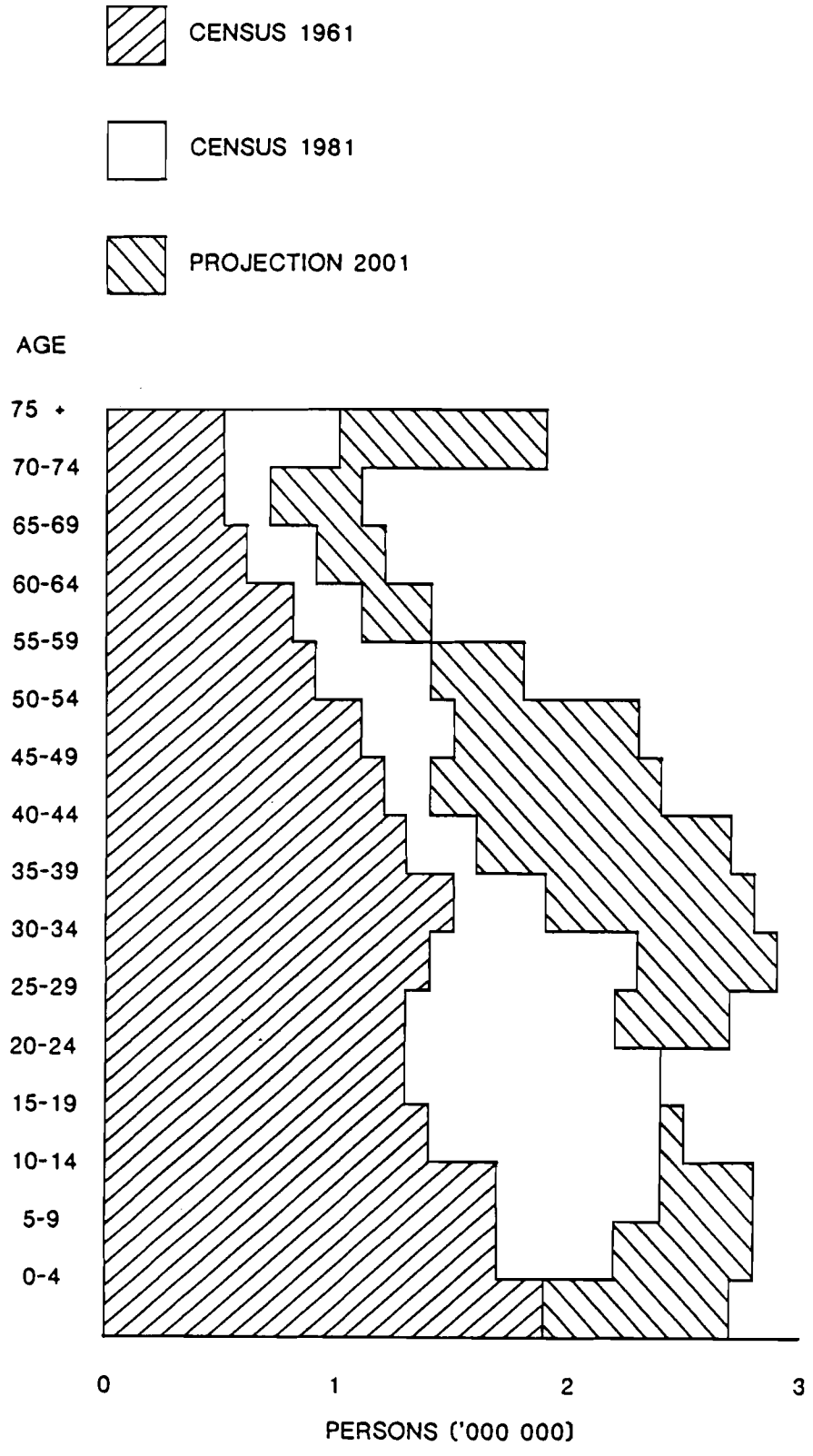


Figure 2.2 Melbourne - Age structure of the Population.

Source: 1961, 1981 data, Australian Bureau of Statistics.
2001 projection, Report by Forecasts Project Team, Research and Policy Division, Department of the Premier and Cabinet, Preliminary Population Projections: Melbourne Region 1981-2001, (October 1982).

1981 data refers to Melbourne Statistical Division

Single person and single parent households have shown the greatest gains during this period and help explain the reduction in average size of households identified in Figure 2.1. A decline has been evident for families made up of head, spouse, dependents and other adults, indicative, perhaps, of a reduction in the tendency of householders to take aged parents or parents-in-law into their homes (Hugo, 1983). Likewise, there has been a decline (albeit relative) in households made up of 'head and other adults only', belieing the oft-repeated popular theory relating to the increased popularity of varied living arrangements, especially among young adults.

## 2.6 Female Participation in the Workforce

While a later sectin will comment in greater detail in relation to changing patterns of labour force participation, it is appropriate at this point to refer briefly to major changes relating to female participation in the workforce. As data in Table 2.1 reveals, dramatic changes have taken place over the past 30 years. In the 1980s the 'symmetrical family' (in which both head and spouse work) will exert greater influence on patterns of consumption, particularly in relation to housing. Location of work of head will prove to be an inadequate indicator of place of residence as the symmetric household is likely to be striving to minimise commuting distances for both partners.

## 2.7 Population Distribution and Redistribution

Much has been written of late in connection with the changing distribution of a nation's population. In the Introduction, distinction was made of three distinct phases of urban development: urbanisation,

suburbanisation and dispersal. In Victoria the urbanisation process had slowed substantially by the early 1960s at which stage Melbourne was

Table 2.4

Population Distribution, Victoria: 1947-1981

| | 1947 | 1954 | 1961 | 1966 | 1971 | 1976 | 1981 |
|---|---|---|---|---|---|---|---|
| Metropolitan Centre | 59.7 | 62.1 | 65.2 | 65.5 | 68.4 | 68.0 | 67.3 |
| Inner City | 18.4 | 14.0 | 10.8 | 9.7 | 8.8 | 7.1 | 6.4 |
| Balance | 41.3 | 48.1 | 54.5 | 55.7 | 59.6 | 60.9 | 60.9 |
| Metropolitan Hinterland | 7.4 | 3.2 | 2.4 | 3.8 | 3.1 | 3.4 | 3.8 |
| Non-Metropolitan Centres > 10,000 (including Geelong) | 9.4 | 10.6 | 10.6 | 11.4 | 11.2 | 11.4 | 11.5 |
| Non-Metropolitan Centres < 10,000 (including rural) | 23.5 | 24.1 | 21.7 | 19.3 | 17.3 | 17.2 | 17.4 |
| Total (State) | 2054701 | 2452341 | 2930113 | 3220217 | 3502351 | 3646981 | 3832443 |

Notes: Metropolitan Centre is taken as Melbourne Urban Area as defined for each census
Inner City comprises the 8 municipalities of Fitzroy, Collingwood, Melbourne, Prahran, Richmond, St Kilda, South Melbourne, Port Melbourne
Balance is taken as Metropolitan centre minus Inner City
Metropolitan Hinterland is taken as the Melbourne Statistical Division as defined in 1981 minus Metropolitan Centre as defined for particular census years.

Table 2.5

Components of Population Change for Melbourne, 1961-1981
(Thousands of Persons)

| Age Groups | Inner Region | | | | Middle Region | | | | Outer Region | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1961-1966 | 1966-1971 | 1971-1976 | 1976-1981 | 1961-1966 | 1966-1971 | 1971-1976 | 1976-1981 | 1961-1966 | 1966-1971 | 1971-1976 | 1976-1981 |
| Natural Increase 0-4 | 24.5 | 24.8 | 16.1 | 12.4 | 140.8 | 146.9 | 123.0 | 99.8 | 47.7 | 71.8 | 83.6 | 82.5 |
| Net Migration 5-14 | -4.5 | -5.8 | -14.0 | -7.0 | 16.7 | 16.4 | -6.1 | -2.2 | 11.5 | 22.7 | 16.8 | 13.2 |
| 15-19 | 6.9 | 7.5 | 3.3 | 4.0 | 12.4 | 10.0 | 0.5 | 3.4 | 4.1 | 5.8 | 4.0 | 2.5 |
| 20-34 | 5.6 | 2.0 | -13.3 | 1.3 | 19.9 | 9.6 | -35.2 | -22.9 | 20.6 | 42.1 | 54.2 | 39.9 |
| 35-49 | -7.1 | -7.1 | -14.3 | -6.9 | 13.5 | 15.9 | -5.9 | -0.7 | 10.1 | 16.7 | 12.4 | 8.6 |
| 50-64 | -4.6 | -5.4 | -6.5 | -2.5 | 4.6 | -2.8 | -14.2 | -9.3 | 4.9 | 6.4 | 6.0 | 7.8 |
| 65+ | -2.5 | -3.1 | -1.7 | 0.6 | 8.7 | 4.4 | 2.7 | 14.3 | 3.5 | 5.1 | 5.0 | 11.6 |
| Total net migration | -6.2 | -11.9 | -46.6 | 10.3 | 75.9 | 53.6 | -58.3 | -17.4 | 54.7 | 98.9 | 98.6 | 83.7 |

achieving its population growth principally through natural increase and immigration from overseas (Rowland, 1974). The first 25 years of the post-war period was characterised by a suburbanisation of the city's population (viz. progressive increase in 'Balance' up to 1970; Table 2.4). While suburban growth has stabilised in a relative sense, the inner city continues to lose population (although Table 2.5 indicates a net gain in the 19-34 years age categories). The structure of the inner city's population has also changed: increase in average household income, increase in percentage of white collar (professional) occupations (Kendig, 1979); inflation of house prices indicative of a process of gentrification common in certain North American and British cities.

## 3. HOUSING TRENDS

There are several distinctive characteristics relating to housing in Australia (of which Melbourne is largely representative); these can be briefly listed as follows:

1. Detached single family housing dominates the urban fabric of the city both numerically (perhaps 80 per cent of all dwellings in 1981 - see Table 2.1) and spatially (viz. concentration of flats in the central areas of Melbourne - see Figure 3.1) and is a principal factor in the low density sprawl which has characterised urban development in the post war period.

2. The system of housing provision is achieved primarily within the private sector, which accounts now for more than 90 per cent of new construction (Table 3.1 and Figure 3.2).

3. Owner-occupancy levels are high by world standards with over two thirds of metropolitan households owning (or purchasing) their dwelling (Table 2.1). Data presented in Burke et al. (1984) reveal that a number of significant changes took place between the 1940s and 1950s (and have subsequently continued) in relation to tenure status:
   (a) an increase in the proportion of households who were either owners (outright) or purchasers (via mortgage) of their residential property.
   (b) a decrease in the proportion of households classed as owners of their accommodation (and a concomitant increase in those with mortgages).

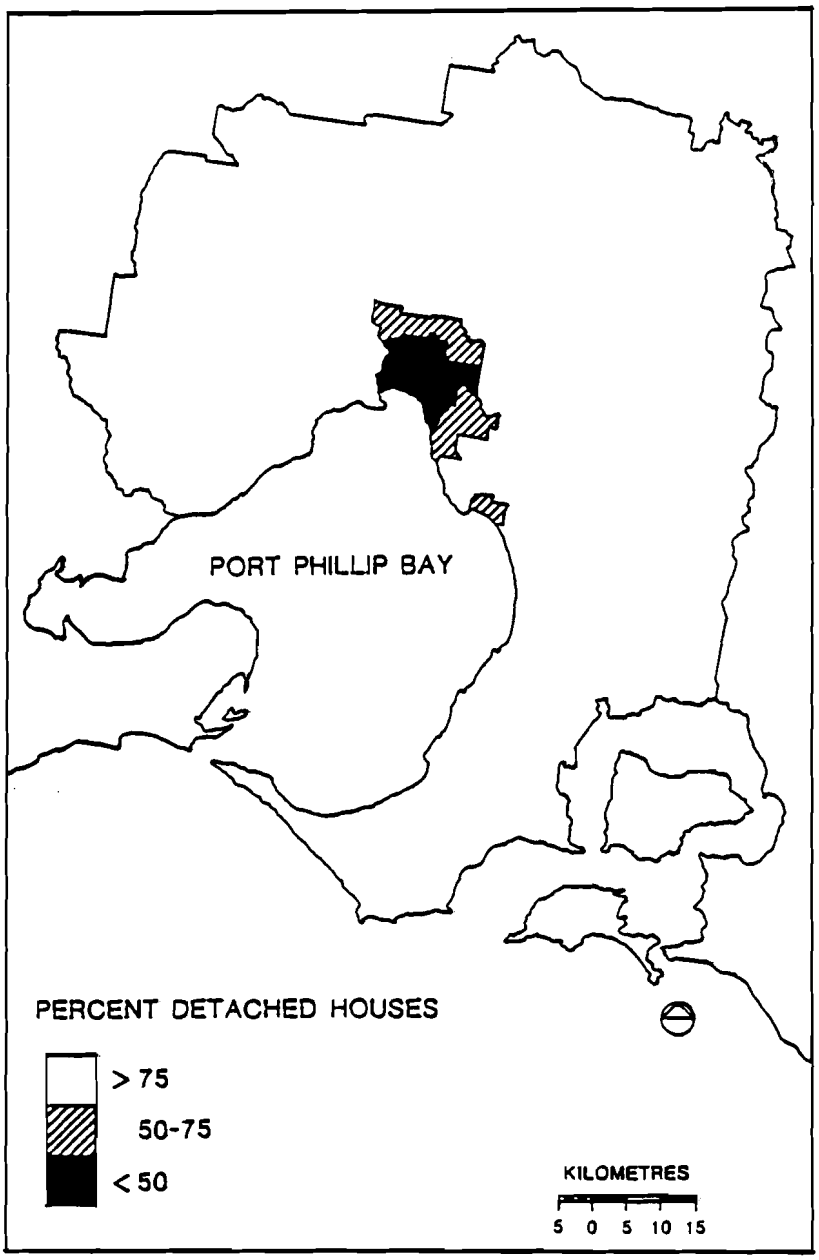


Figure 3.1 Distribution of Dwelling Types, 1971.

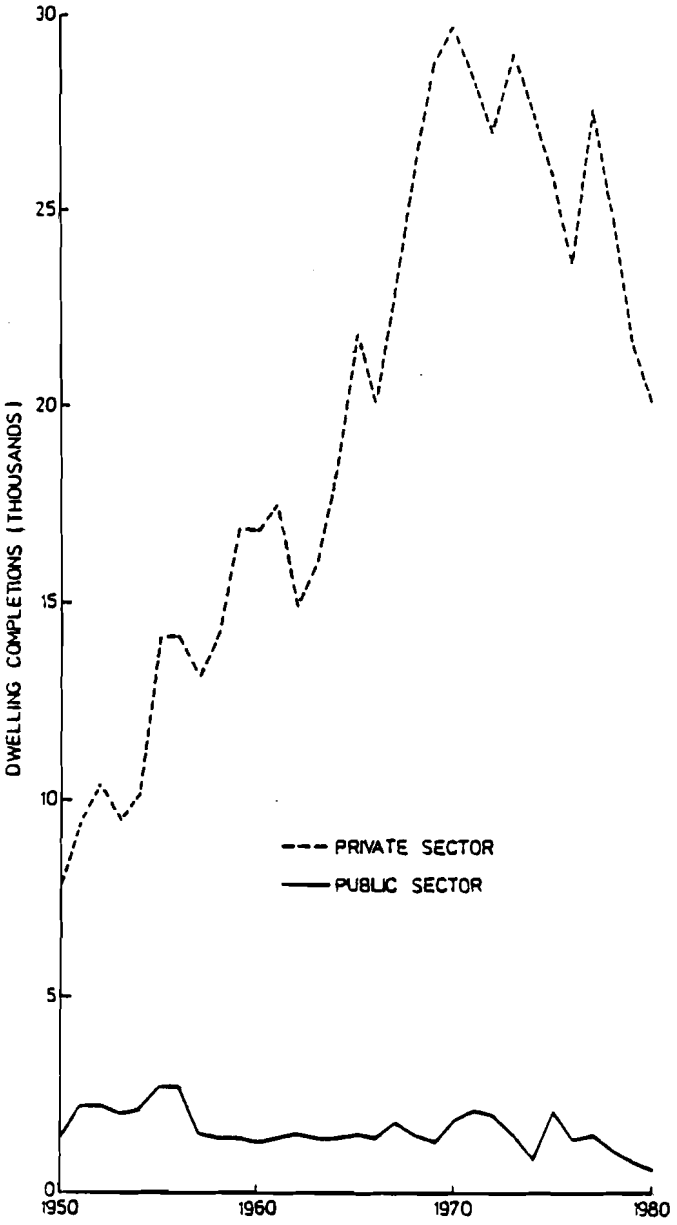


Figure 3.2 Dwelling Completions, Victoria, 1950-1980.

Table 3.1

Dwelling Completed by Public Authorities, Victoria and Nationally

| Year | Victoria | | National | |
|---|---|---|---|---|
| | No. | % | No. | % |
| 1950 | 2,454 | 15.5 | 9.956 | 17.6 |
| 1951 | 2,699 | 12.5 | 12,416 | 18.1 |
| 1952 | 2,970 | 12.1 | 13,931 | 17.5 |
| 1953 | 3,238 | 14.7 | 16,280 | 20.5 |
| 1954 | 3,590 | 16.1 | 17,164 | 22.3 |
| 1955 | 3,960 | 16.1 | 17,959 | 22.0 |
| 1956 | 4,152 | 17.4 | 15,814 | 20.4 |
| 1957 | 2,580 | 12.2 | 12,394 | 18.4 |
| 1958 | 2,414 | 10.7 | 12,520 | 17.0 |
| 1959 | 2,560 | 9.9 | 12,276 | 14.9 |
| 1960 | 2,594 | 9.9 | 12,224 | 13.9 |
| 1961 | 2,217 | 8.4 | 12,226 | 13.2 |
| 1962 | 2,400 | 10.4 | 14,278 | 17.0 |
| 1963 | 2,022 | 8.4 | 13,467 | 15.8 |
| 1964 | 2,324 | 8.6 | 13,956 | 14.8 |
| 1965 | 2,688 | 8.5 | 15,653 | 14.2 |
| 1966 | 2,686 | 8.8 | 15,722 | 14.4 |
| 1967 | 3,116 | 9.7 | 14,530 | 13.3 |
| 1968 | 2,214 | 6.5 | 13,630 | 11.7 |
| 1969 | 2,131 | 5.8 | 12,305 | 9.7 |
| 1979 | 2,650 | 6.8 | 13,396 | 9.8 |
| 1971 | 2,887 | 7.7 | 15,481 | 11.3 |
| 1972 | 2,787 | 7.7 | 14,950 | 10.8 |
| 1973 | 1,982 | 5.2 | 11,605 | 8.0 |
| 1974 | 1,505 | 4.1 | 9,435 | 9.3 |
| 1975 | 3,016 | 8.1 | 12,514 | 9.3 |
| 1976 | 2,849 | 8.3 | 16,153 | 12.2 |
| 1977 | 2,531 | 6.7 | 11,439 | 7.9 |
| 1978 | 2,539 | 7.6 | 11,693 | 9.1 |
| 1979 | 1,835 | 6.6 | 8.771 | 7.5 |
| 1980 | 1,185 | 4.4 | 7,550 | 6.0 |

Source: ABS.

(c) a dramatic decline in the proportion of households classed as private renters.

(d) the emergence of a small public housing sector.

## 3.1 The Public Housing Sector

In the state of Victoria, the Ministry of Housing, through its Housing Commission (HCV) had, after 45 years operation, constructed or purchased 90,000 dwelling units. Of these, 61 per cent were located in Melbourne. Source of funds for public housing derive principally from the Federal government and have, as Figure 3.3 reveals, been subject to fluctuation over time, due to economic climate and political predilection (see Newton and Wulff, 1983).

The emergence of state public housing authorities in most states of Australia in the late 1930s and early 1940s was due, in large measure, to the deterioration in standard and availability of low income housing during the depression. The shortage of housing which followed the second world war also added impetus to the public housing sector. The rationale for government intervention in housing has, in recent times, become a much debated subject with those such as Stafford (1978) favouring a purely market approach with little or no government involvement, in contrast to their opponents (e.g. True, 1979), who identify a need for government in housing provision.

Employing the framework outlined by True (1979), the need for state intervention in Melbourne's housing market can be examined from three principal perspectives.

Externalities

Market failure is often deemed to arise when there is the presence of negative externalities, which in the context of housing, normally involves the blight, decay and overcrowding induced by poor accommodation. The external costs imposed on society from a deterioration of housing range from neighbourhood level effects, such as a lowering of adjacent property values or decline in visual and environmental standards, to national-level effects (e.g. the costs to be borne by the state as a result of the effect of poor housing, particularly overcrowding, and security of tenure on physical and mental health). Victoria's slum abolition movement of the 1930's which culminated in the formation of the HCV, was driven by the need to remedy the overcrowding, high rents and conditions of the tenements in sections of inner Melbourne:

> 'The housing of the poor in the metropolitan area is a standing reproach to this State. Houses are deteriorating at an alarming rate and unsanitary areas are becoming an ever-increasing menace to the health and moral well-being of the whole community'. (Report of the Housing Investigation and Slum Abolition Board, 1937. Quoted in HCV, 1967a, p.1).

The cost-to-society argument remains a prominent rationale for public housing in the 1980s as a recent statement from Victoria's Minister for Housing reveals:

> '... the lack of reasonable standard accommodation is placing tremendous strain on families and marriages.
>
> Many of the marriages of low-income people without decent accommodation are breaking up. The Federal Government doesn't understand. They don't realise what they're doing to people. Instead of investing in homes that provide security and satisfactory living conditions, they are more willing to let families be destroyed and then pay the cost through higher social welfare payments.
>
> If they [the Federal Government] only contributed a realistic amount to housing, then the demand for social welfare would be less'. (The Age, 4 Sept. 1981, p.11).

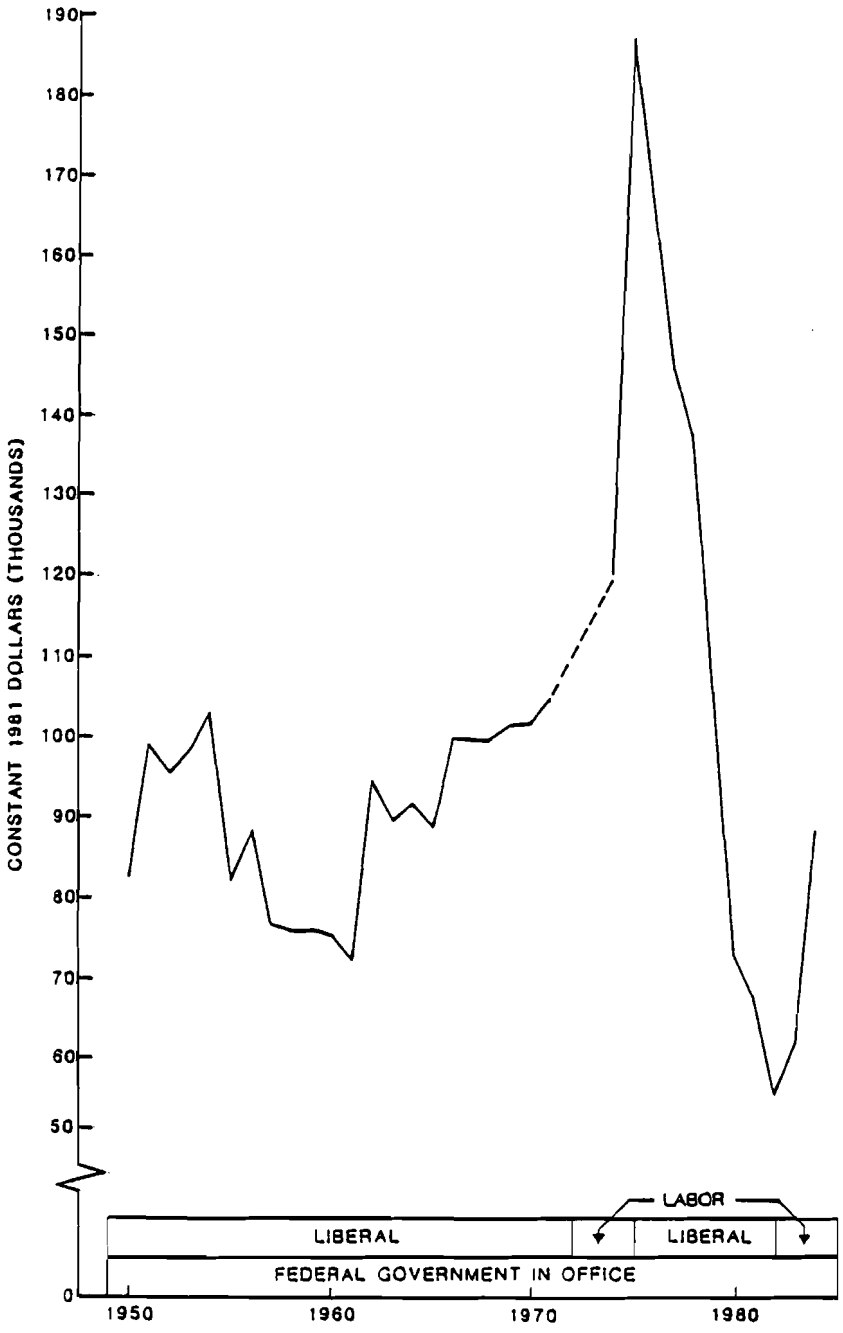


Figure 3.3 Federal Allocation of Housing Funds to Victoria.

Income Distribution and Capital Markets

A case for government intervention in the housing market has also been made on the grounds of the unequal distribution of income and wealth in a country. A study of the distribution of wealth in Australia in 1967 (Podder and Kakwani, 1976) revealed that the top 20 per cent of the population held 54 per cent of the wealth (in 1915 the same proportion held 90 per cent of total wealth). At the other end of the distribution, the bottom 40 per cent had less than 10 per cent of total wealth.

Furthermore, surveys undertaken for the Commission of Inquiry into Poverty established that 7.7 per cent of Melbourne's households could be classed as living below the poverty line (Henderson et al., 1975). In particular, several groups including the sick, disabled, the aged and homeless youth constitute a section of the population who experience difficulty in obtaining income via the market place. Other groups, which include unskilled manual workers and females suffer variability and insecurity of income. Given such a pattern of inequality, the poor are prone to find themselves in difficulty in the payment of rent or in securing finance for home purchase - a case has been made for some form of government assistance to help the financially disadvantaged with their housing.

(i) Public housing vs rental allowances (or Cash vs Kind)

In Australia, programs which reduce the price of housing to households have operated in the main through home ownership and public rental housing. Assistance to private renting households is minimal.

Housing allowances are one method of assisting low income households to

acquire reasonable accommodation in the private sector or reduce their rent burdens. Such assistance can be provided without the State being directly involved in the housing market, assistance being directed to the needy and adjusted to meet changing needs while at the same time allowing the recipients freedom in choosing the type of accommodation and location they prefer (within limits). This form of assistance is used in the United States and various European countries and was the subject of an experimental scheme in Australia lasting six months between January-July 1978 initiated and prematurely aborted by the Liberal federal government.

The main reasons for government provision of housing in 'kind' in Australia involve:

a. political factors: an expectation that government is only able to persuade taxpayers to support the poor if benefits are tangible (i.e. production of housing) rather than as straight gifts of cash (or even housing voucher). Government can point to the economic growth stimulated by injection of public capital into the house-building industry as a spin-off from assistance for low income housing.

b. economic factors: one of the principal arguments against the introduction of housing allowances is that the supply of housing is inelastic (i.e. slow to respond to changes in demand) and therefore a housing allowance program would serve to increase rents and prices (de Leeuw and Ekanem, 1971; but see Rydell, 1980 for counter-evidence).

Table 3.2

Indices of Dissimilarity Between Distributions of Private Sector and Public Sector Housing in Melbourne, 1947-1981

| | 1947 | 1954 | 1961 | 1966 | 1971 | 1976 | 1981 |
|---|---|---|---|---|---|---|---|
| Houses | 60.3 | 54.6 | 58.2 | 61.2 | 60.7 | 57.5 | N.A. |
| Flats | 99.8 | 80.4 | 71.9 | 58.1 | 57.4 | 47.5 | N.A. |
| Total dwellings | 62.2 | 56.0 | 53.3 | 53.1 | 52.9 | 50.9 | 51.6 |

Source: Newton and Wulff (1983).

For the first 30 years of its operation Victoria's Ministry of Housing focused solely on new construction, initially on large (100-1000 unit) outer suburban greenfields sites and during a 10 year period (circa 1965-1974) undertook an extensive program of high rise redevelopment in the inner city. Criticism of their (suburban) estate development program and their high rise program ranged across many issues, not the least of which relatd to the segregated pattern of public housing development (see Table 3.2; also Badcock, 1982, Newton and Wulff, 1983). In recent years a 'spot purchase' program has operated whereby government purchases individual houses from the private sector which it subsequently rents to its clients (thereby reducing the stigma of residence in identifiable government housing).

(ii) Inequality of Access to the Private Housing Market

The inequality in distribution of income and wealth within Australia is also reflected in differential access to the private housing market. Inequality of access is due in part to the high cost of housing in

relation to income, exacerbated by increases in interest rates, and the behaviour of lending institutions (discussed in more detail in the following section concerned with the Private Housing Sector).

Overcoming Shortages and Stabilisation

Australia was, at the end of the second world war, suffering from a housing shortage. There was overcrowding and many houses lacked basic amenities. Because of shortages of building materials and skilled labour, it took some years for the building industry to pick up (from 15,400 completed dwellings in 1945-46 to 57,000 by the end of the 1940s), but once the recovery was underway it began a period of sustained production throughout the 1950s and 1960s which, according to Neutze (1977), not only made up for the backlog of construction and maintenance during the 1930s and 1940s but also raised housing standards to higher levels than ever before.

Construction of houses by the state contributed to this recovery. In the decade 1950-59, HCV completions comprised approximately fourteen per cent of Victoria's total (Table 3.1). Subsequently, as the rate of growth in demand for housing began to parallel the rate of growth of supply, public intervention in house construction declined. The period of the 1950s and 1960s was also one of rapid change in other spheres as well - industrialisation was proceeding apace and the annual rate of population growth was more than double pre-war levels, due largely to high levels of immigration. The state was of the view then, as now that to attract labour and sustain economic development, provision of housing was a prime requisite.

Table 3.3

Lagged Correlation Analysis between Private Sector and public Sector Residential Construction Activity within Melbourne, 1950-1980.

| Number of Years Lagged | Public sector lags private sector | Private sector lags public sector |
|---|---|---|
| 0 | -0.33 | -0.33 |
| 1 | -0.40 ($p<0.05$) | -0.31 |
| 2 | -0.39 ($p<0.05$) | -0.25 |
| 3 | -0.37 | -0.23 |
| 4 | -0.34 | -0.23 |
| 5 | -0.32 | -0.22 |
| 6 | -0.20 | -0.22 |
| 7 | -0.10 | -0.24 |
| 8 | -0.11 | -0.25 |
| 9 | -0.14 | -0.22 |
| 10 | -0.09 | -0.18 |

It has been found (see True, 1979, p.135) that the pattern of investment in private residential construction trends to be among the most unstable of any sector of investment, and given the links suggested between building cycles and national economic growth (Parry Lewis, 1965), some form of stabilising action by government, in the form of public sector house construction, may be seen as desirable to iron out any building-induced cyclic fluctuations. The pattern of private sector and public sector completions of housing in Melbourne between 1950 and 1980 provide some evidence of counter-cyclical activity, with the public sector lagging (supporting) the private sector (Table 3.3).

In summary, the demand for public housing has always been high (for example the average number of persons on the waiting list for public housing in Victoria has averaged 18000 during the 1970s). In recent years, with increased unemployment, the size of this list has remained high, with supply of public housing lagging behind demand. Reduction in federal funds for housing (see Figure 3.3) has exacerbated this

situation; the result has been that public housing is now very much welfare housing - low income households who previously had some prospect of accommodation in state housing now are forced to compete for housing in the private rental sector.

## 3.2 The Private Housing Sector

The pattern of development of the private housing sector in Australia, to an even greater extent that the public sector previously discussed, cannot be isolated from the changes occurring in the Australian and the international economy and the political strategies of incumbent federal and state governments. This situation was forcibly demonstrated during the late 1970s and early 1980s when funds for urban housing and infrastructure were squeezed due to increased demands from the mining and resources sector (AIUS, 1980; Reece, 1980). The availability and cost of housing has also been affected by changes in the Australian financial system. A more detailed explication is available elsewhere (e.g. Burke et al. 1984), but the following summary is worth noting. In the 1960s and early 1970s, banks and building societies dominated in the receipt of household savings and lending, in part because households were unaware of other investment outlets and in part because of suspicions surrounding some of the newer types of financial institutions. In consequence, banks and building societies had relatively large amounts of money to lend for housing at low rates of interest (the upsurge in numbers of households purchasing housing, outlined earlier, is a reflection of this situation). From the 1970s, Australia's finance industry became more diverse with new investment outlets emerging (e.g. trusts, merchant banks). In addition, inflation was making households more sensitive to returns on their investment, and returns at the new investment outlets were superior to those of the

established bodies. As a result, building societies and banks, whose interest rates were regulated by government policy, found it increasingly difficult to attract depositors. This meant an inability to lend on housing.

Affordability

Research on the affordability of housing has sought to provide estimation of the extent to which available housing choices fail to match the purchasing power of the population. A study by the Australian Housing Standards Advisory Council (1975) revealed that in 1960 the average number of year's savings required to purchase an average house-land package in Melbourne was four. By the mid 1970s the figure had risen to 18 years (see Table 3.4).

Table 3.4

Number of Years to save a Deposit for the Average Priced House, Melbourne, Sydney, Adelaide.

| | Mean House Price $ | Rate of Int. % | Average Annual Earnings (Aust.) | Max. Bank Loan (Aust.) | Reqd. Deposit | No. of Years Saving (Single) | No. of Years Saving (Dual Income) |
|---|---|---|---|---|---|---|---|
| Melbourne: | 14800 | 6.5 | 4410 | 11100 | 3700 | 4.6 | 1.1 |
| 1971 | 41281 | 10.5 | 9922 | 23000 | 18281 | 18.3 | 2.3 |
| 1977 | 41281 | 10.5 | 9922 | 23000 | 18281 | 18.3 | 2.3 |
| 1981 | 53821 | 11.5 | 14627 | 32000 | 21821 | 14.0 | 2.7 |
| Adelaide: | | | | | | | |
| 1977 | 35421 | 10.5 | 9928 | 23000 | 12421 | 9.1 | 1.6 |
| 1981 | 42815 | 11.5 | 14627 | 32000 | 10815 | 6.0 | 1.0 |
| Sydney: | | | | | | | |
| 1981 | 76670 | 16.5 | 14627 | 32000 | 44670 | 30 plus | 4.4 |

Source: Burke et al. (1984)

Interest rates have powerful effects on the ability of households to enter home ownership. Studies by Bromilow (1977) revealed that under 1976 conditions with 10 per cent p.a. savings bank loan interest rates, over 50 per cent of families did not have incomes capable of sustaining repayments on maximum permissable loans for typical popular lower priced housing, leaving approximately two million families theoretically out of reach of standard, conventional housing under existing loan conditions (should they have been required, at that time, to qualify for home purchase finance). With the rise in interest rates from 10 per cent (1976) to 12.5 per cent (1981) a further 25 per cent of families would have been unable to meet repayment requirements.

Spatial Aspects

Important as the abovementioned trends are for particular household groups, of greater significance at metropolitan level are the changes that have been occurring in relation to the spatial configuration land values. The land price gradients depicted in Figure 3.4 reveal that between 1977 and 1979 inner city land was increasing at a faster rate than suburban land (reversing an earlier trend). One explanation advanced for this (Sharpe, 1980) relates to changing energy prices (and resultant transport costs); falling transport costs over the 1960-77 period contributed to increases in outer suburban land prices, but the move to export parity pricing by the federal government in 1978 initiated a sharp break with the previous trend.

A considerable proportion of recent investment by life insurance groups has been in CBD properties, principally office development (Kilmartin and Thorns 1978); and there has ben considerable speculative activity in inner city residential properties since the mid-1970s. Because inner

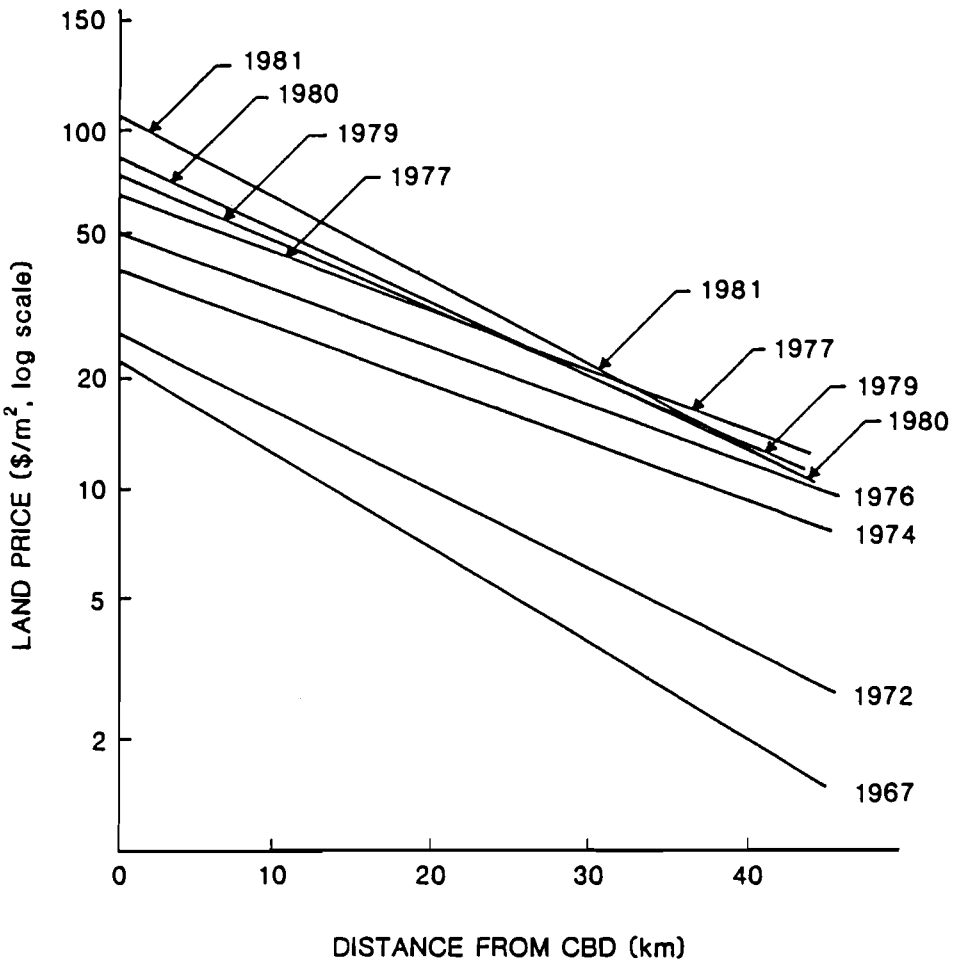


Figure 3.4 Melbourne Land Prices.

Source: Sharpe (1980 and unpublished data).

city property had been undervalued in the post-World War II 'suburbanisation' years, the boom in house sales which began in Melbourne in 1973 had its greatest impact on inner city prices (Howe 1979). Yet during this time, it had been a policy of the state government to assist home buyers by developing land (and for public tenants, housing estates) at the metropolitan fringe where land is cheap. Such a policy placed a burden on future homeowners (and tenants) since the savings made on land were quickly eroded by higher transport costs generated by current (and future) petrol price increases.

## 4. Economy and Workplace Trends

### 4.1 Economic Structural change

Immediately after World War II, Australia entered a period of strong economic growth based upon manufacturing, mineral extraction and rural agricultural industries. Some of the structural changes which have occurred since the late forties can be seen in the export earnings attributed to these sectors. Table 4.1 provides representative figures for each major industrial grouping over the period 1949-50 to 1979-80. Although rural products still dominate exports, the share accounted for by mining has increased fivefold and that of manufacturing, fourfold. Manufacturing remains an important but now declining part of the national economy as Australia, together with other Western countries, advances through the post-industrial society.

With most Australian industry located in state capitals, the role of these metropolises in facilitating structural adjustment is vital. Victoria is an appropriate state in which to examine this process of structural change, since manufacturing has been a major component of economic activity for the last four decades. One-third of the Victorian workforce is still engaged in factory activities, and 85 percent of Victorian manufacturing employment is located in Melbourne.

Melbourne's growth in manufacturing took place in an environment which allowed an 'artificial and therefore vulnerable' industrial structure to emerge (Linge, 1979). Protective tariff barriers were raised to encourage industrial development and to counteract competition from imports based on low cost labour. Furthermore, high transport costs arising from a small and geographically dispersed domestic market, and

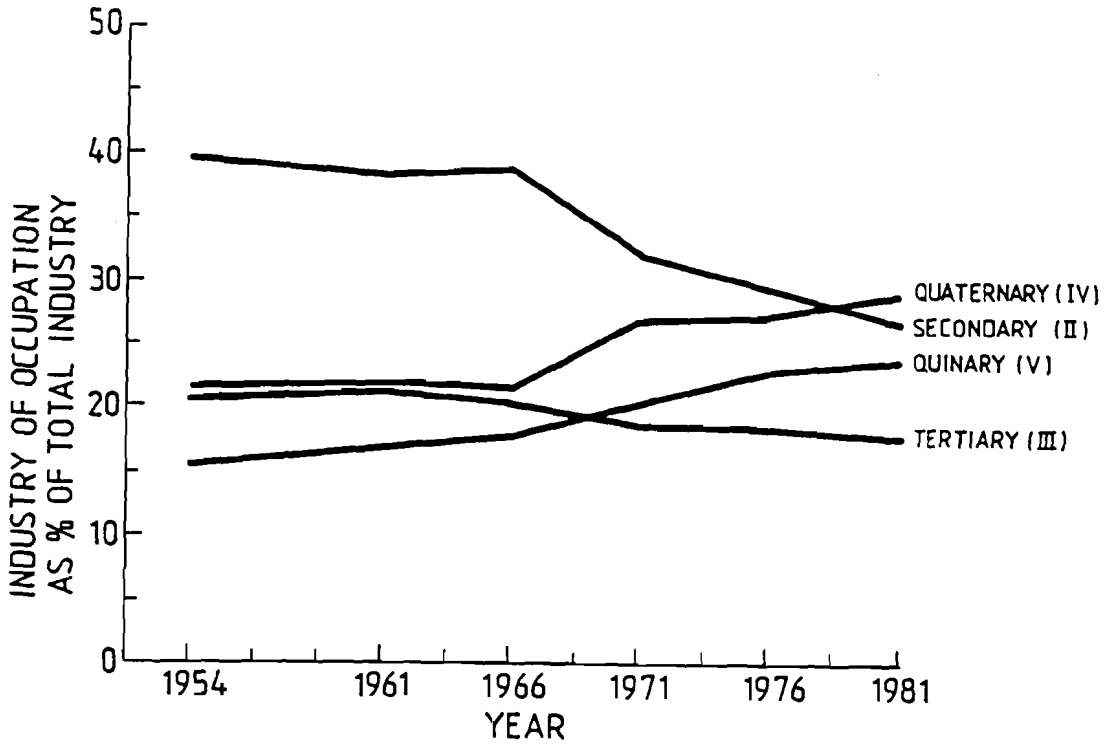


Figure 4.1 Changing Industrial Structure over Time, MSD.

competition from other States, encouraged a proliferation of small, less efficient manufacturing plants.

Table 4.1

PROPORTION OF TOTAL AUSTRALIAN EXPORT EARNINGS BY INDUSTRY GROUPS

(per cent)

| Industry Group | 1949-50 | 1954-55 | 1959-60 | 1964-65 | 1969-70 | 1974-75 | 1979-80 |
|---|---|---|---|---|---|---|---|
| Primary produce (excluding minerals) | 87.6 | 83.7 | 79.1 | 75.5 | 54.1 | 46.6 | 44.6 |
| Minerals (including refined petroleum) | 6.1 | 6.7 | 7.7 | 10.4 | 24.9 | 28.8 | 30.3 |
| Manufacturing | 6.3 | 5.9 | 8.9 | 12.5 | 18.3 | 23.1 | 23.1 |
| Others | - | 3.7 | 4.3 | 1.6 | 2.7 | 1.5 | 1.7 |

Source: ABS Australian Yearbooks (1949 to 1979).

Falling profitability and the increasing attractiveness of the financial and service sectors and of mining for investment funds has meant that, since the mid 1960s, manufacturing industry has been increasingly hampered by stagnant investment and sluggish productivity (Jackson, 1975). Manufacturing industry's share of new fixed capital expenditure by private enterprise fell from 50.3 per cent in 1965-66 to 27.2 per cent in 1979-80. In this period, the proportion of gross domestic product devoted to gross fixed capital expenditure fell from 27.8 per cent to 22.1 per cent (IAC, 1981). Manufacturing industry also suffered from the effects on the balance of payments of export-oriented mining growth and increased self-sufficiency in oil since the late 1960s. Upward pressure on exchange rates during the early and mid-1970s,

together with increased competition among industries for resources, has led to an erosion of the international competitiveness of Australian manufacturing. Moreover, there was a considerable slowdown in general job creation between 1966 and 1981.

The changing industrial structure of Melbourne's economy over the postwar period can be gleaned from Table 4.2 and Figure 4.1. In terms of the share of total employment in the Melbourne Statistical Division (MSD) by industry of occupation, fewer and fewer jobs have been generated in the manufacturing sector (industry II), and more and more of Melbourne's jobs have become service-oriented. The quaternary sector (industry IV), which provides all commercial services, and the quinary sector (industry V), which provides public and personal services, are now jointly responsible for more than half of Melbourne's workforce. Taken together with the tertiary sector (utilities, construction and transport), these non-manufacturing sectors represent almost three-quarters of economic activity. Furthermore, examination of the recent rates of growth in service sectors IV and V, compared to the continuing decline in manufacturing sector II (see Table 4.3 and Figure 4.2), suggests that the traditional three-sector analysis (primary, secondary, tertiary) of economic structural change is becoming an anachronism (Jones, 1982). To take into account the changing nature of work, which is manifest within the service sectors, it is evident that the five-sector analysis in Table 4.2 is more revealing.

The main underlying components of Melbourne's industrial restructuring can be understood more easily in the light of this five-sector analysis. The quaternary sector is largely an <u>information processing</u> sector, involving the provision of 'soft' or less tangible services. Its common

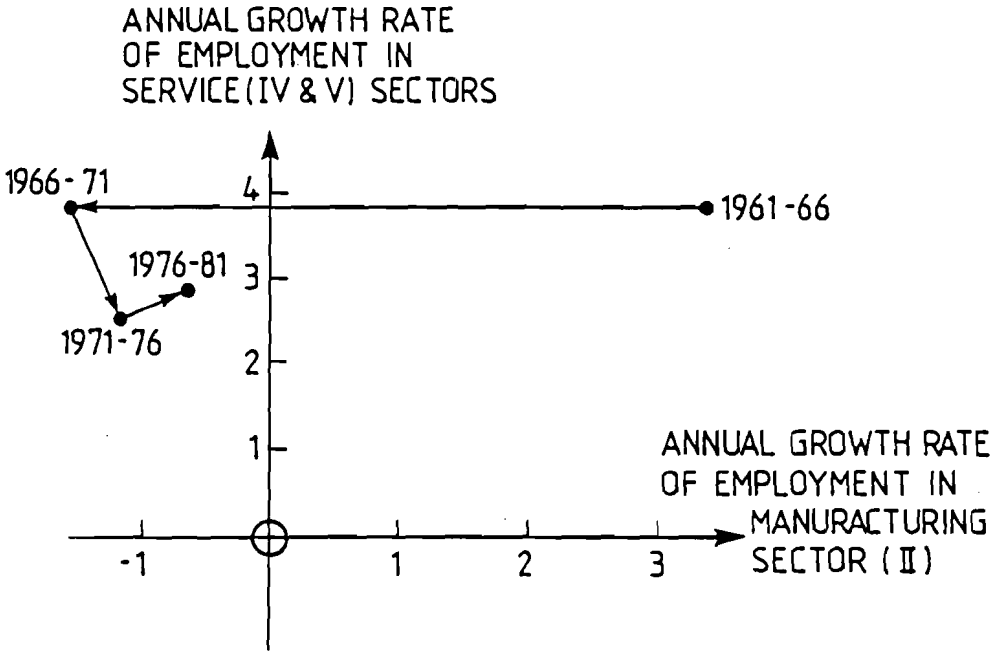


Figure 4.2 Growth Rates of Employment in Service versus Manufacturing Sectors, MSD, 1961-81.

element is the processing of symbols and the transfer of information, which is amply illustrated in the work of bankers or real-estate agents. Much of the growth in this sector (from 17% of Melbourne's workforce in 1947 to 30% in 1982) has stemmed from a trebling of employment in activities related to finance and property.

Table 4.2

Industry of Occupation as Percentage of Total Industry, Melbourne Statistical Division, 1954-81

| Industry of Occupation | Year 1954 | 1961 | 1966 | 1971 | 1976 | 1981 |
|---|---|---|---|---|---|---|
| I. PRIMARY (including agriculture, forestry, fishing and mining) | 3.2 | 2.4 | 1.9 | 1.5 | 1.2 | 1.3 |
| II. SECONDARY (manufacturing) | 39.3 | 37.7 | 38.2 | 32.4 | 29.8 | 27.0 |
| III. TERTIARY (including utilities, construction and transport) | 20.7 | 21.4 | 20.7 | 18.7 | 18.6 | 18.2 |
| IV. QUATERNARY (providing all commercial services including wholesale and retail trade, finance, communications) | 21.2 | 21.4 | 21.3 | 27.1 | 27.4 | 29.2 |
| V. QUINARY (providing public and personal services including public administration, community services and entertainment) | 15.6 | 17.1 | 17.9 | 20.3 | 23.0 | 24.3 |

Table 4.3

Metropolitan Job Change in each Major Industry of Occupation, Melbourne Statistical Division, 1961-81.

| Year | SECONDARY INDUSTRY | | QUATERNARY INDUSTRY | | QUINARY INDUSTRY | |
|---|---|---|---|---|---|---|
| | Absolute Change | Rate of Change | Absolute Change | Rate of Change | Absolute Change | Rate of Change |
| 1961-1966 | +50456 | +17.3% | +29868 | +16.6% | +33226 | +21.3% |
| 1966-1971 | -27972 | - 8.2% | +79382 | +37.8% | + 2151 | + 1.1% |
| 1971-1976 | -18691 | - 5.9% | +14934 | + 5.1% | +40933 | +21.2% |
| 1976-1981 | -11252 | - 3.8% | +38788 | +12.7% | +37271 | +15.9% |

Source: Metropolitan Employment Analysis, Melbourne 1961-1981, Unpublished MMBW Report.

Along similar lines, substantial growth in the quinary sector has been dominated by a doubling in the contribution made by community services over the last 25 years. The escalating provision of domestic services (often unpaid), professional services analogous to domestic work, charitable work, and hobby-based occupations suggests that the quinary sector will play an increasingly important role in any anaylsis of which areas of Melbourne's employment are growing and which are contracting. The likely escalation of home-based employment and leisure activities, associated with the emergence of the information economy, underline the importance of sectors IV and V in the process of socio-economic structural change.

## 4.2 Location of employment

The years between the two world wars, during which various key industries (such as automobiles, aircraft and agricultural machinery) were established, also heralded the beginning of a suburbanisation process within Melbourne. Postwar metropolitan expansion was initially nominated by a dramatic suburbanisation of population (see Section 2).

In general, residential decentralization at this time preceded and outsped the suburbanisation of employment (BTE, 1983; Beed, 1981); both processes spread initially in similar directions.

Table 4.4 summarizes the changing spatial distribution of Melbourne's employment over the twenty year period, 1961-1981. By the early sixties, Melbourne exhibited a dichotomous structure, consisting of a core zone containing a surplus of jobs (55% of all jobs) over resident workers (less that 20% of all workers), and dormitory suburbs which generated daily flows of commuters towards the city centre. By 1981, the respective figures had fallen to 27% and 9%, emphasizing the erosion of the core for both industrial and residential location. Figure 4.3 depicts the changing relationship between job opportunities and distance from the central business district, whereas Figure 4.4 confirms that a higher percentage of those employed are now living in the outer areas.

Table 4.4

Changing Spatial Distribution of Employment
Within the Melbourne Statistical Division by Zone, 1961-81.

| | % OF JOBS IN ZONE | | | TOTAL NUMBER OF JOBS IN ALL ZONES |
|---|---|---|---|---|
| Year | I. CORE | II. INTERMEDIATE | III. PERIPHERAL | |
| 1961 | 55.0 | 38.3 | 6.7 | 824,803 |
| 1966 | 46.9 | 42.0 | 11.1 | 993,676 |
| 1971 | 41.8 | 44.1 | 14.1 | 1,074,788 |
| 1976 | 36.7 | 46.4 | 16.9 | 1,158,435 |
| 1981 | 26.6 | 37,2 | 36.2 | 1,219,545 |

Sources: Journey to Work Tapes, Wyatt (personal communication); O'Connor and Maher (1979); Australian Bureau of Statistics, The Labour Force, Australia, Catalogue Nos. 6203.0 and 6204.0.

When relative rates of Inner Area (Core zone I) and Outer Area (Intermediate zone II and Peripheral zone III) job change are

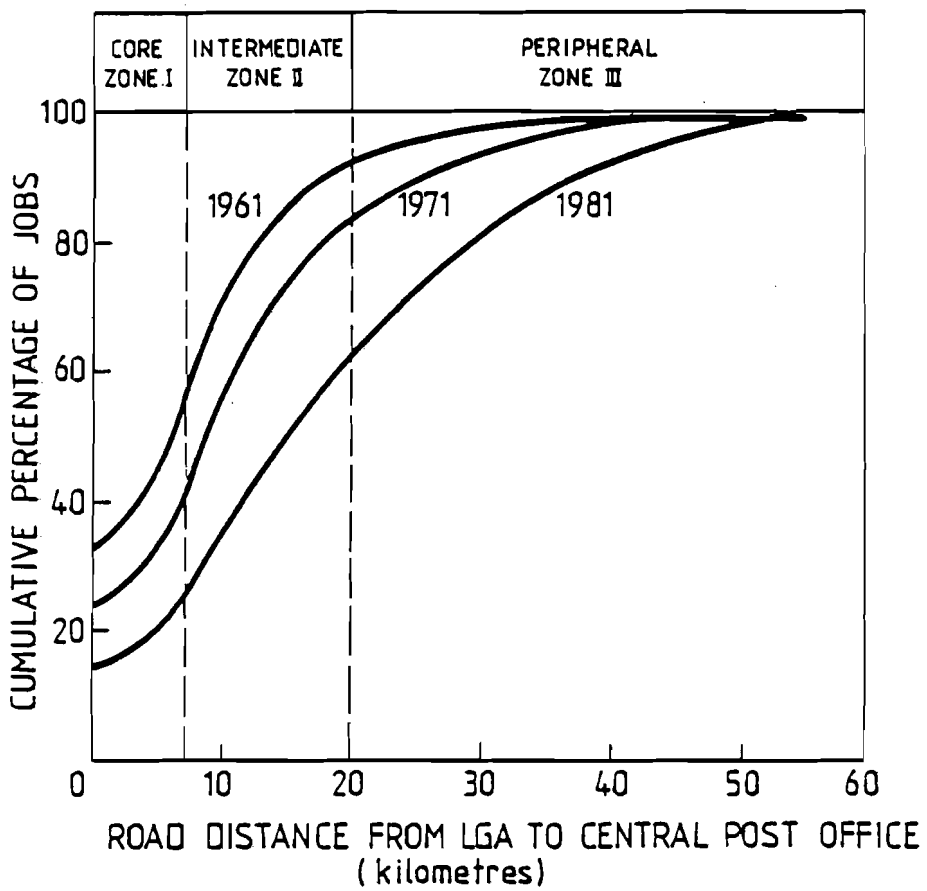


Figure 4.3 Changing Relationship between Job Opportunities and Distance from the Central Business District.

(NOTE: The job population at the origin represents employment in the City of Melbourne.)

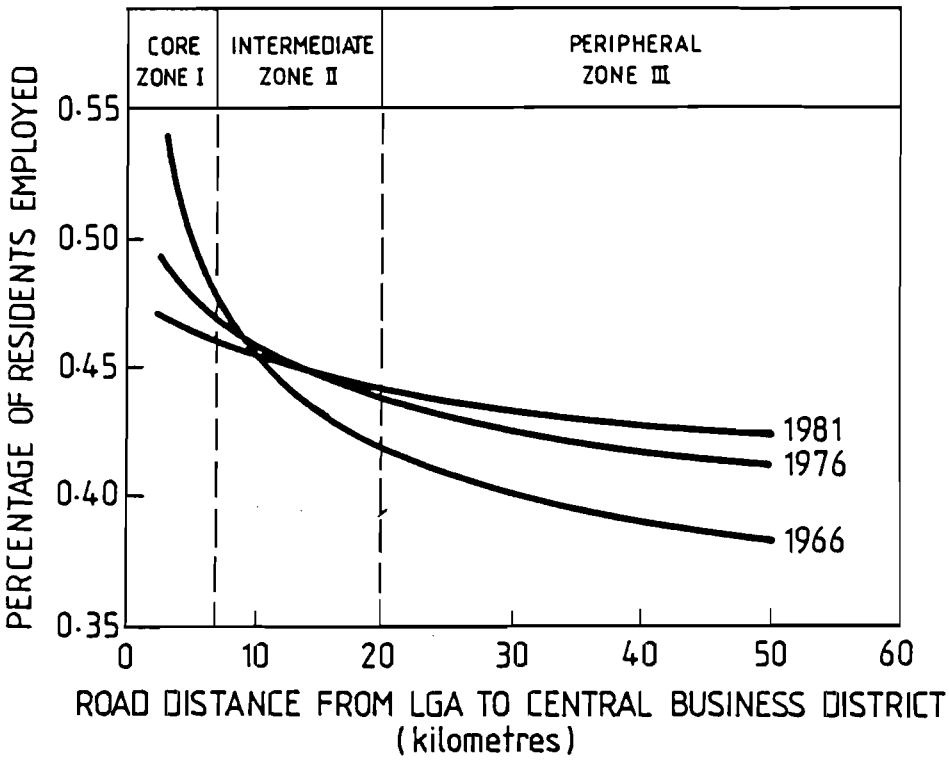


Figure 4.4 Spatial Distribution of Employed Persons, 1966-81.

calculated, the percentages show that the rate of suburban job growth has tended to slow down appreciably since 1961 (see Table 4.5). The Inner Area rate of job loss, on the other hand, remained essentially steady until the relative improvement of 1976-81.

Table 4.5

Relative Rates of Inner and Outer Area Job Change
(in relation to the overall Metropolitan growth rate)

| Year | Inner Area | Outer Area |
|---|---|---|
| 1961-1966 | -12.7% | +15.5% |
| 1966-1971 | -11.6% | +10.7% |
| 1971-1976 | -12.9% | + 8.6% |
| 1976-1981 | - 5.1% | + 3.1% |

Source: Metropolitan Employment Analysis, Melbourne 1961-1981, Unpublished MMBW Report.

These percentages indicate that the rate at which jobs have been suburbanising has continued to fall. This decline was especially marked over the most recent inter-censal period. The percentages also show that the increasing Inner Area losses of 1966-1976 are translated, in relative terms, into a very consistent level of job loss. In other words, when account is taken of job change within the metropolis as a whole, the Inner Area job losses experienced between 1966 and 1976 represented a rate of job change that was very consistent. A comparison of Tables 4.4 and 4.5 confirms that there has been a continued tendency for job growth to be peripheral.

The relative rates of 1976-81 job change in each industry classification within the Outer Area indicate that the secondary and the quaternary job classifictions have most reinforced this outwards momentum of job growth. The respective rates were as follows:

Table 4.6

Relative Rates of Outer Area Job Change
by Industry Classification, 1976-81

| Zone | Job Classification | | |
|---|---|---|---|
| | Secondary | Quaternary | Quinary |
| II. Intermediate | -9.0% | + 2.4% | + 1.9% |
| III. Peripheral | +30.9% | +31.4% | +21.3% |

In the postwar period, peripheral decentralization has been the hallmark of manufacturing. Employment in manufacturing industry was quick to grow in the Outer Area (in both relative and absolute terms), both through the creation of new factories and the decanting of existing firms out of the central code (Beed, 1981, p.133). While 47,000 factory jobs disappeared from the Inner Area between 1961 and 1976, 87,000 new such jobs were created in the Outer Area (MMBW, 1979). During this period, manufacturing employment dispersed more rapidly than the population. However, Table 4.7 confirms that since 1976, absolute job losses which have occurred in both the core and intermediate zones have been much greater than the small gains which have accrued to the peripheral zone. In other words, manufacturing industry is 'down and on the way out'.

A similar story applies to retail activity. The Outer Area currently accounts for about four-fifths of all retailing, following extensive suburbanisation from the core (zone I) to the periphery (zone III). This somewhat selective form of decentralization by retailers has resulted from the development of the supermarket and large shopping complexes in the Outer Area. Table 4.8 comfirms that retail activity in the intermediate suburbs (zone II) has remained relatively stable, although total retail employment has declined since 1974.

Table 4.7

Location of Manufacturing Activity,
MSD, 1969-1981

(a) PERSONS EMPLOYED

| Year | % employed in zone | | | Persons employed |
|---|---|---|---|---|
| | I. CORE | II. INTERMEDIATE | III. PERIPHERAL | |
| 1969 | 35.0 | 55.1 | 9.9 | 369030 |
| 1973 | 29.5 | 58.2 | 12.3 | 386729 |
| 1976 | 27.0 | 58.8 | 14.2 | 354751 |
| 1978 | 25.7 | 58.9 | 15.4 | 334833 |
| 1981 | 24.6 | 58.3 | 17.1 | 329603 |

(b) NUMBER OF ESTABLISHMENTS

| Year | % of Establishments in Zone | | | Number of Establishments |
|---|---|---|---|---|
| | I. CORE | II. INTERMEDIATE | III. PERIPHERAL | |
| 1969 | 36.1 | 53.4 | 10.5 | 9465 |
| 1973 | 31.1 | 55.1 | 13.8 | 9754 |
| 1976 | 27.8 | 55.1 | 17.1 | 9513 |
| 1978 | 25.3 | 55.3 | 19.4 | 9449 |
| 1981 | 23.0 | 54.7 | 22.3 | 9638 |

Source: Census of Manufacturing Establishments, 1969 to 1981.

Table 4.8

Location of Retail Activity
MSD, 1969-1981

(a) PERSONS EMPLOYED

| Year | % employed in zone | | | Persons employed |
|---|---|---|---|---|
| | I. CORE | II. INTERMEDIATE | III. PERIPHERAL | |
| 1969 | 35.7 | 50.4 | 13.9 | 185096 |
| 1974 | 30.1 | 51.0 | 18.9 | 192004 |
| 1979/80 | 22.5 | 51.9 | 25.6 | 154167 |

(b) NUMBER OF ESTABLISHMENTS

| Year | % of Establishments in Zone I. CORE | II. INTERMEDIATE | III. PERIPHERAL | Number of Establishments |
|---|---|---|---|---|
| 1969 | 26.5 | 58.1 | 15.4 | 30154 |
| 1974 | 23.8 | 56.8 | 19.4 | 28964 |
| 1979/80 | 20.7 | 53.8 | 25.5 | 28304 |

Source: Census of Retail Establishments, 1969 to 1979/80.

The bulk of the increase in non-office jobs that require proximity to the residential population has occurred in the Outer Area. By contrast, the increase in office jobs has been balanced more evenly between the Inner and Outer Areas. Between 1961 and 1971, for example, 45,000 new jobs in finance, insurance, real estate, public administration and community services were generated in the Outer Area, but so were an equivalent number in the Inner Area (MMBW, 1977, p.32). Of course, these are the fastest growing jobs in the Australian economy, reflecting post-industrial changes in economic structure. Employment growth is rapid in all quaternary and quinary industries, so much so that their total employment now dwarfs that in manufacturing.

Changes in employment by occupational group are given in Table 4.9. Once again, the dominant trend is one of suburbanisation, with very few occupations enjoying greater demand in the Inner Area. The two main exceptions were the professional/technical and clerical groups, whose job opportunities expanded throughout the MSD.

Table 4.9

Employment and Employment Change for Major Occupational Groups, Inner and Outer Areas, 1961-81

| | | Year | Prof/tech | Admin/man | Clerical | Sales | Transport | Crafts/lab | Service | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Inner Area | | 1961 | 40 890 | 32 500 | 97 845 | 31 870 | 17 840 | 124 745 | 29 340 | 375 030 |
| | | 1971 | 51 130 | 30 675 | 110 221 | 28 938 | 17 922 | 104 960 | 24 923 | 368 769 |
| | change | 1961-71 | 10 240 | -1 825 | 12 376 | -2 932 | 82 | -19 785 | -4 417 | -6 261 |
| | | 1976 | 57 016 | 30 159 | 108 112 | 24 229 | 17 250 | 92 452 | 26 992 | 356 210 |
| | change | 1971-76 | 5 886 | -516 | -2 109 | -4 709 | -672 | -12 508 | 2 069 | -12 559 |
| | change | 1961-76 | 16 126 | -2 341 | 10 267 | -7 641 | -590 | -32 293 | -2 348 | -18 820 |
| | | 1981 | 61 202 | 28 388 | 107 500 | 24 641 | 16 011 | 82 454 | 26 226 | 344 131 |
| | change | 1976-81 | 4 186 | -1 771 | -612 | 412 | -1 239 | -9 998 | -766 | -12 079 |
| | change | 1961-81 | 20 312 | -4 112 | 9 655 | -7 229 | -1 829 | -42 291 | -3 114 | -30 899 |
| Outer Area | | 1961 | 32 575 | 27 465 | 32 560 | 28 720 | 12 445 | 141 705 | 23 510 | 298 980 |
| | | 1971 | 58 081 | 40 395 | 69 982 | 48 759 | 22 971 | 226 084 | 35 975 | 502 247 |
| | change | 1961-71 | 25 506 | 12 930 | 37 422 | 20 039 | 10 526 | 84 379 | 12 465 | 203 267 |
| | | 1976 | 79 857 | 46 800 | 90 585 | 56 750 | 26 836 | 252 883 | 45 314 | 599 025 |
| | change | 1971-76 | 21 776 | 6 405 | 20 603 | 7 991 | 3 865 | 26 799 | 9 339 | 96 778 |
| | change | 1961-76 | 47 282 | 19 335 | 58 025 | 28 030 | 14 391 | 111 178 | 21 804 | 300 045 |
| | | 1981 | 110 590 | 26 026 | 113 192 | 72 292 | 27 509 | 253 018 | 59 870 | 672 219 |
| | change | 1976-81 | 30 733 | -20 774 | 22 607 | 15 542 | 673 | 135 | 14 556 | 73 194 |
| | change | 1961-81 | 78 015 | -1 439 | 80 632 | 43 572 | 15 064 | 111 313 | 36 360 | 373 239 |

Sources: Maher and O'Connor (1978); ABS (1976, 1981)

To sum up, the industries that made Melbourne such a thriving city during the industrial period (1947-71), have suffered serious job losses during the seventies, causing a steady decline in Melbourne's inner city (zone I) population and economic activity. Extensive suburbanisation of industry has occurred, so much so that Melbourne's suburbs have now changed in character as the pairing of job opportunities and residential location has led to the emergence of relatively self-contained local economies. Many suburbs are no longer suburban, but are instead urban areas offering different scales and densities (O'Connor, 1982). An understanding of the spatial development of these sub-metropolitan labour markets has important implications in terms of workforce participation, since unemployment will rise if job seekers limit their search for work to principles by which or areas in which they have previously found employment. The following section examines the changing participation in Melbourne's workforce.

## 4.3 Workforce participation

The size of Melbourne's labour force has progressively exceeded the size of the employed population, especially since 1974. While there was substantial growth in the number of jobs in the quaternary and quinary industries, there were even bigger increases in the numbers of people seeking work. Figure 4.6 depicts this widening gap which emphasizes the growth in unemployment.

Table 4.10 explains the underlying changes in economic activity and unemployment in greater detail. The labour force participation rate, defined as the percentage of the population aged 15 and over holding a job or actively looking for one, captures part of the story. There has been a continuous fall in the male rate since 1961, but an increase in

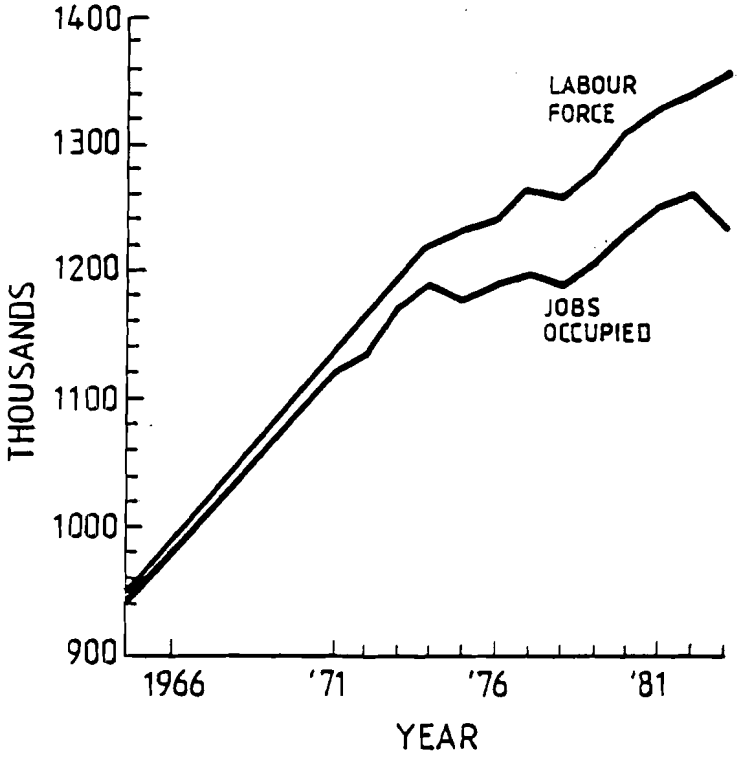


Figure 4.5 Changes in Labour Force and Jobs Occupied, MSD, 1966-83.

Sources: Australian Bureau of Statistics, The Labour Force, Australia, Catalogue Nos 6203.0 and 6204.0 and 6204.0; The Labour Force, Victoria, Catalogue No. 6201.2.

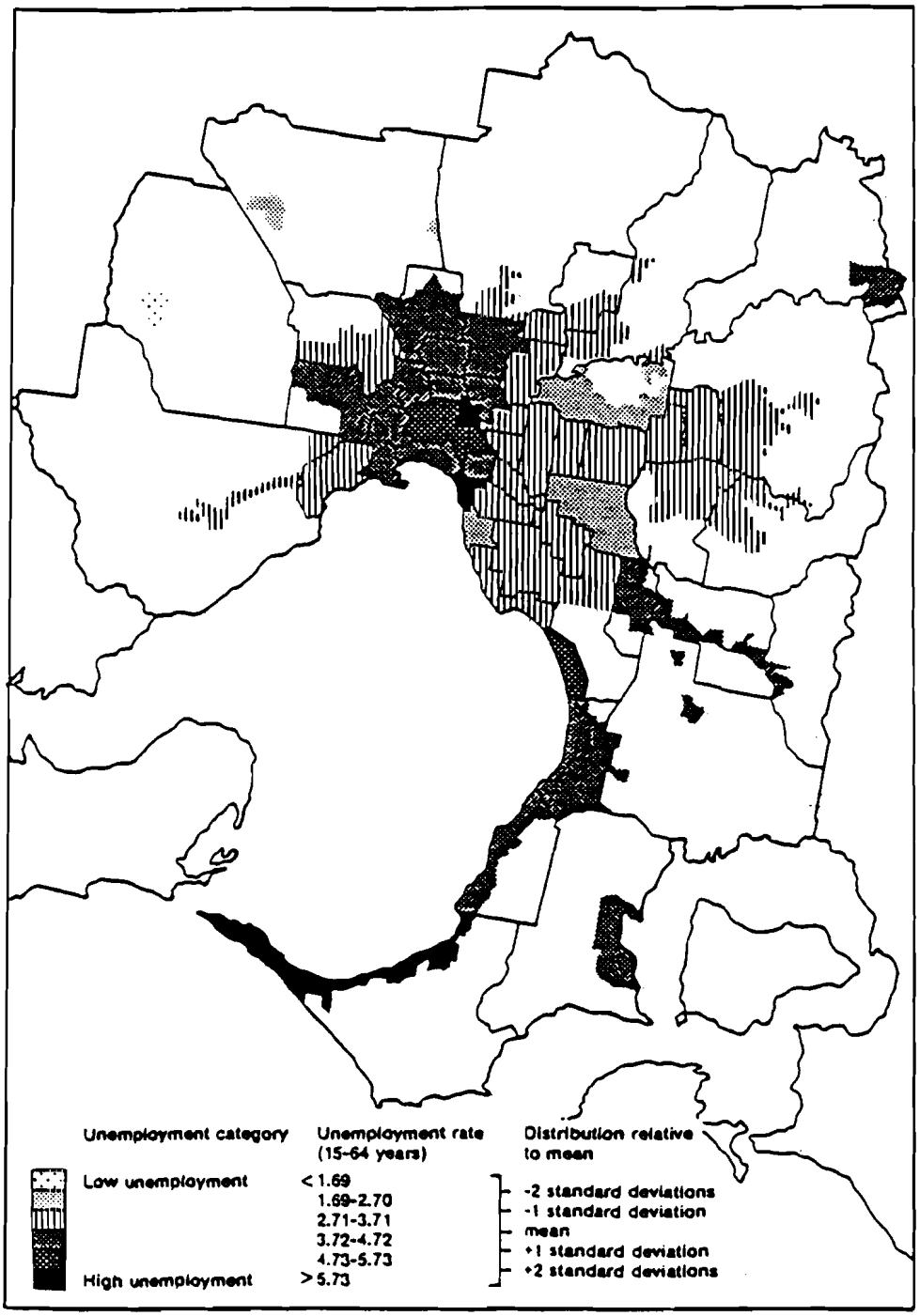


Figure 4.6 Unemployment Rates, Melbourne, 1976.

Source: ABS (1976)

the female rate until 1981. The male trends are partly explained by an increase in the number of people of retirement age, but there is also an increase in the number of workers still seeking employment.

Against this background, there has been a steady increase in the proportion registered as unemployed since 1971, which reached 9% of the workforce by the end of 1983. The higher rates for women can partly be explained by the greater percentage of married females who undertake or are seeking part-time work. The spatial distribution of unemployment in 1976 is given in Figure 4.5.

However, the published unemployment rate is only one measure of the underutilization of labour (Beed, Singell and Wyatt, 1983, p.15). In prolonged periods of less than full employment, as has characterized the Melbourne economy over the last ten years, some people become discouraged from seeking work and withdraw from the labour force. These people are not counted by the statistical bureaux, since the Census definition of unemployed persons includes only those who "had actively sought work in the four weeks preceding the survey week or were waiting to be recalled to a job from which they had been temporarily stood down".

Table 4.10

Economic Activity and Unemployment,
MSD, 1966-83

| Parameter | | Year 1966 | 1971 | 1976 | 1981 | Oct., 1983 |
|---|---|---|---|---|---|---|
| Population aged 15+ | M | 790,700 | 884,900 | 952,700 | 1,026,800 | 1,069,400 |
| | F | 827,700 | 923,000 | 998,400 | 1,076,700 | 1,118,900 |
| | T | 1,618,400 | 1,807,900 | 1,951,100 | 2,103,400 | 2,188,300 |
| Active labour force | M | 664,500 | 730,100 | 768,500 | 808,200 | 823,100 |
| | F | 335,400 | 412,300 | 470,400 | 519,000 | 530,200 |
| | T | 999,900 | 1,142,400 | 1,238,800 | 1,327,200 | 1,352,300 |
| Participation rate (as % of population aged 15+) | M | 84.0 | 82.7 | 80.7 | 78.7 | 77.0 |
| | F | 40.5 | 44.7 | 47.1 | 48.2 | 47.4 |
| | T | 61.8 | 63.2 | 63.5 | 63.1 | 61.8 |
| Unemployed | M | 6,500 | 10,100 | 24,500 | 38,600 | 67,000 |
| | F | 6,000 | 7,300 | 23,000 | 37,400 | 52,600 |
| | T | 12,500 | 17,400 | 47,500 | 76,000 | 119,600 |
| Unemployment (as % of active labour force) | M | 1.0 | 1.4 | 3.2 | 4.8 | 8.1 |
| | F | 1.8 | 1.8 | 4.9 | 7.2 | 9.9 |
| | T | 1.2 | 1.5 | 3.8 | 5.7 | 8.8 |

Sources: Australian Bureau of Statistics, The Labour Force, Australia, Catalogue Nos. 6203.0 and 6204.0; The Labour Force, Victoria, Catalogue No.6201.2.

(NOTE: M=Males; F=Females; T=Total)

Because of the significant numbers of discouraged workers (particularly amongst the elderly) who are not officially counted as unemployed, it has been suggested that conventional measures of unemploymnt are an inadequate record of labour market conditions. Furthermore, the standard unemployment rate does not capture the desire by certain part-time workers to gain full-time employment. Some researchers have therefore produced estimates of "hidden" unemployment in various age groups by calculating the gap between the recorded labour force and the labour force which would have resulted if trend participation rates had persisted (Stricker and Sheehan, 1981). Such estimates, often referred to as labour force gaps, have been derived for Melbourne, and result in the levels of recorded and hidden unemployment depicted in Figure 4.7.

A recent analysis sought to identify the contribution which locational and transport factors make to the unemployment problem in Melbourne (BTE, 1983). The results revealed that social characteristics were statistically more important in explaining spatial variations in unemployment among adults, whereas accessibility to employment, as measured by travel time, was the single most important factor contributing to levels of unemployment among junior males and females. To gain a better understanding of the journey to work patterns involved, trends in the transport sector will be examined in the next section.

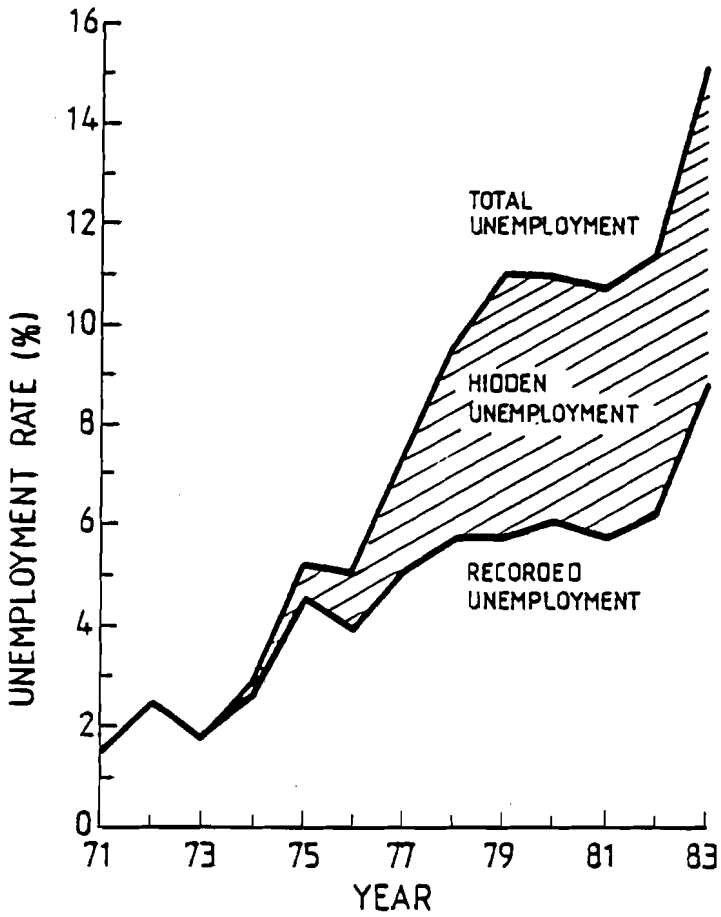


Figure 4.7 Recorded and Hidden Unemployment, Melbourne, 1971-83.

Source: Australian Bureau of Statistics, The Labour Force, Australia, Catalogue Nos. 6203.0 and 6204.0.

# 5. TRANSPORTATION TRENDS

## 5.1 Supply of Transport Networks

### A. Suburban Train System

Melbourne's train network developed as a radial system focused on the CBD (Fig.5.1). The system was opened with steam trains in 1854, and was fully electrified by 1923. Most of the existing network was completed before the Second World War, where the supply in some of the outer areas was often provided in advance of demand. However, there were some further minor extensions made to the network up till the mid-sixties, as well as considerable upgrading of tracks from single to double lines up until the present. In 1975, a major extension of 27 km of the suburban system was made from Dandenong to Pakenham, using the tracks of the already electrified Gippsland line to Morwell. Some of the documented duplications of lines in the 70s include (in order) 9.7 km (Sunshine - Deer Park), 2.4 km (South Kensington - Footscray [Quadruplication]), 5.2 km (McLeod to Greensborough), 5.3 km (Ringwood to Croydon), 15.9 km (Caulfield to Mordialloc [3rd Track]), 5.1 km (Ringwood to Bayswater) and electrification from Altona to Werribee. Most of these new investments related to improving the rail service for outer residents.

The single most significant development in Melbourne's rail network since the War is certainly the approximately 3 km of underground loop which circuits the CBD proper (Figure 5.1). Work commenced in 1971, with the first new station, Museum, being opened in 1981, and the next, Parliament, in 1983. The project is expected to be completed in 1984. In addition to providing congestion-free access to different parts of the CBD, the loop also copes with the skewed demand out to the South and

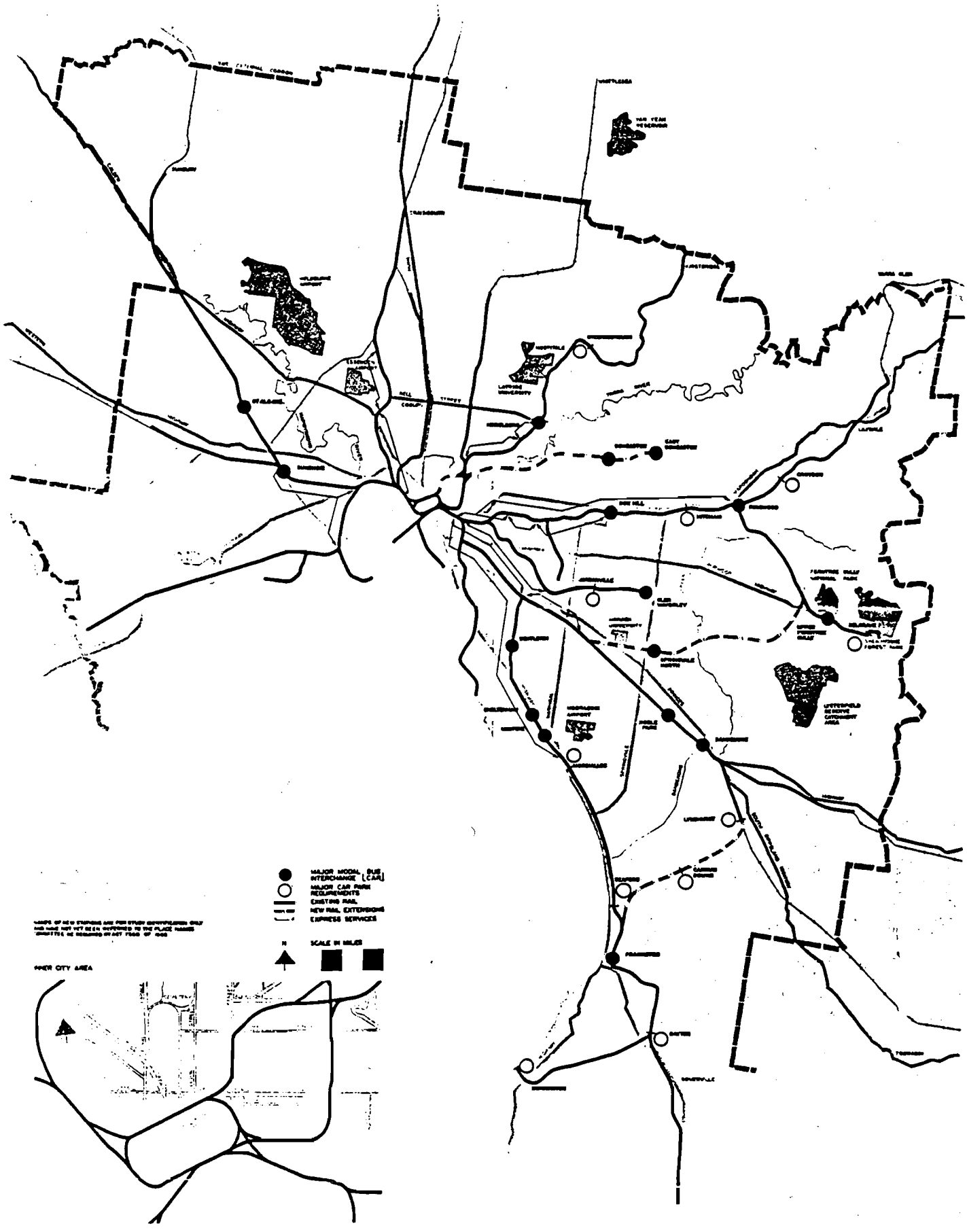


Figure 5.1

Melbourne Suburban Rail Network

East of the metropolitan area, by permitting some trains from these directions to efficiently continue around via the Loop to return and collect more passengers, rather than having to stop and return directly via incoming lines. The capital demands of the loop construction starved the rest of the system from investment relatively for a considerable period. However, the new stations associated with the loop appear to have considerably improved the image of Melbourne's rail system, which is itself expected to lead to increased patronage.

### 5.1.2 The Tramway Network

In 1872, the first tramways company was formed in Melbourne, leading to the opening of the first cable line in 1885, extending to 65 km of lines by 1891. The first overhead electric tramway was opened in 1906, followed by further lines operated by various independent authorities. Finally, in 1919, these authorities were taken over by the newly formed Melbourne and Metropolitan Tramways Board, which is now part of the Metropolitan Transit Authority (1983). By 1920, the network was made fully electric. By 1956, 221 km of double track was available plus 7 km of single track, basically the same length available at the present time. The network extends from the inner suburbs out to some of the middle suburbs. As most of the existing tramways network was in place by the Second World War, the track length supply side of this network can be considered as remaining basically unchanged over the period of this study, except for a short section along the Burwood Highway and a section under construction on Plenty Road (to Latrobe University), as well as the provision of faster and quieter vehicles.

### 5.1.3 The Urban Road System

Up until the Second World War, Melbourne's road network was basically

rectilinear, with major arterial roads forming about 1 mile square grids and more minor roads in between. In addition, several highways cut diagonally through this rectilinear pattern, either to go parallel to the shores of Port Phillip Bay or to proceed directly towards Adelaide, Bendigo, Sydney and Gippsland etc.

In the years immediately after the War, the main achievements were widening of major roads, building of new bridges and replacement of dangerous level crossings by underpasses or overpasses. However, by 1961, the first freeway section, the 10 km Maltby bypass [1], was opened at Werribee, South West of the city (see Fig.5.2). The next effort was the 7 km South Eastern Freeway [F81], proceeding from the edge of the CBD out along the Yarra River. By 1970, the Tullamarine freeway [F81] of length 21 km was opened, terminating at Melbourne's new international airport. The Westgate Freeway [F82] of length 5 km was completed in 1971, with a further 4 km added in 1978 as approaches to the Westgate Bridge. The Mornington Freeway [11] was built in stages, with the first 8 km being built in 1971, and another 8 km in 1981. At about this time, the anti-freeway movement was gaining support, and together with increased costs of new construction, led to a considerable slowing down of the inner urban freeway program, as well as to the deletion of many parts. Several new freeways such as the Mulgrave Freeway [F81], proceeded in short stages, with sucessive parts of its 17 km length being opened in 1974, 1976, 1979 and 1981. Another major project was the Eastern Freeway [F83], with the first 9 km opened in 1977 and 3 km in 1983.

In 1972, the first 6 km of the Calder Freeway [F90] were opened, with 3 km more in 1984 (expected). The 7 km Berwick Bypass [1] on the Eastern

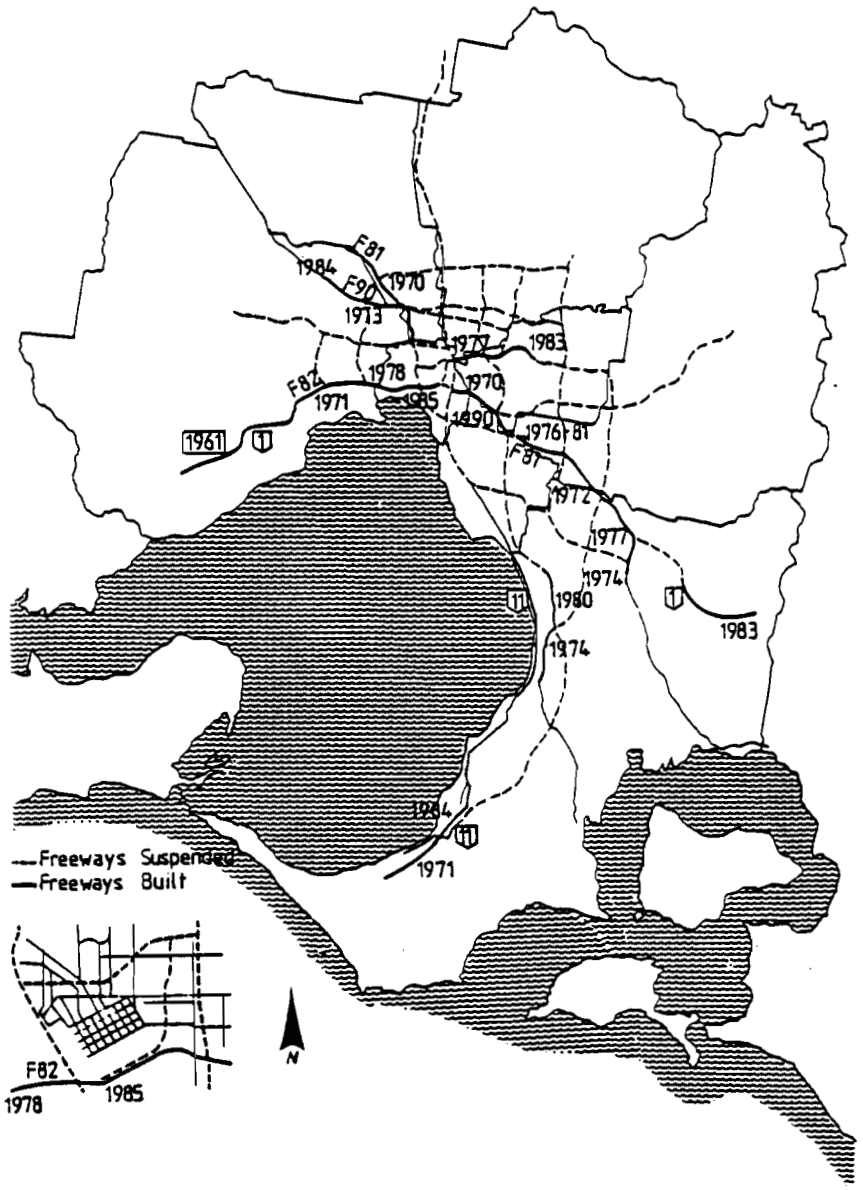


Figure 5.2 Staging of Freeway Development.

edge of the Metropolitan area was opened in 1983, and 6 km of the Frankston Freeway by 1980. With the exception of a few minor links, the main new works are the 6 km Nepean Highway widening and the 4 km Westgate Freeway extension through South Melbourne. With the extra funds coming from the Bicentennial Roads Program until 1988, e.g. about an extra $30 m per year on urban arterials, the pace of freeway and urban arterial construction is expected to be at least maintained. If the above freeway investments are examined over time, it can be observed from Fig. 5.2 that the rate of construction has been relatively uniform since the early 70s, with a low point between 1975 and 1976. In order to partly compensate for the radical slowing down of freeway construction plans, the Board of Works introduced a hierarchy of roads classification for the entire metropolitan area in 1981, with right-of-way priorities at intersections and design criteria depending on the position of each road in the hierarchy.

One of the most significant projects during the last 20 years was the construction of the Westgate bridge [F82] over the Lower Yarra crossing. The bridge diverts a considerable amount of East-West traffic away from the Yarra River bridges in the CBD area to a less congested area well south of the CBD, but where the width of the river is considerably greater. Work was commenced in 1968, but was not completed until 1978 due to a tragic partial collapse of the structure in 1970. Eight lanes are accommodated on the bridge and its value (in the Assets of the 1982 Bridge Authority Report) is assessed at $194 m. Although it was expected to carry 45 000 vehicles per day (vpd) at opening and 100 000 vpd by 1985, it was only carrying 33 000 vpd by 1982. One reason was that the traffic diverted to the bridge from other alternative routes caused the latter to be less congested, and thus relatively more

attractive, especially as the bridge toll could thus be avoided. Also, the construction of a second more modest river crossing at Johnson Street improved access to Footscray and North Melbourne. Another cause of the reduced growth of patronage is the recent depressed state of the economy, as well as the lower population growth in Melbourne compared with the optimistic forecasts of the 60s on which the design was based.

### 5.1.4 Other Transport Alternatives

The Tramways Board operates a fleet of Tramways Buses which carry about 25% of the number of passengers transported by the trams themselves. They complement the tramway network in areas where there is some demand by existing tram passengers, but not enough to justify the laying of additional track. For instance, they serve some of the regional shopping centres such as Northland or Doncaster Shoppingtown, which are not served directly by trams or trains. Such buses carried only about 20% of the tram passengers during the 1950s and 1960s, which increased to 25% from about the mid 1970s. Note that, the Victorian Railways also operate two bus routes, from East Camberwell station to East Kew, and from Sandringham station to Southland regional shopping centre, as extensions of rail lines.

Finally, most of the outer suburbs are covered by a network of private buses. However, these are not yet well coordinated with the rest of the public transport system. For instance, in off-peak periods outer buses may meet say only every third train at its terminus point, and no service often exists at all after say 6.30 p.m. Of course, many of the outer areas of Melbourne are settled at very low densities, and such private buses would require considerable subsidies to operate more regularly and extensively.

## 5.2 Demand for Transport Services

### 5.2.1 Public Transport Trips

In the rapid expansion outwards of Melbourne's residential area from the 1950s onwards, residential land was increasingly being provided in areas which were not within reasonable walking distance of public transport terminals. In addition, rising real incomes enabled households to increasingly expect to own one or more motor vehicles. In this environment, the total number of annual passenger journeys by tram and tramway bus reached a peak of 245 m in 1956. Similarly, the number of suburban train passenger journeys peaked at 161 m during the same year. From then on, the total number of passenger journeys on both public modes continued to decrease, with small local peaks about 1973-75, corresponding to the time of the 'oil crisis'. As the total Metropolitan population increased significantly from 1956 to the present, the decreasing importance of public transport becomes even more significant if the public transport trips per head of population are examined over time (see Fig.5.3). At the same time, it is noted that this trip rate had levelled out by the early 80s and there was even a modest increase by 1981 in tram plus tramway bus trips per person. One reason for this change may have been a lagged response to the world parity oil pricing policy of the Federal Government, leading to a greatly increased real price of petrol from 1978 onwards (see Fig.5.4). The corresponding real incease in public transport fares was much less severe, particularly for trams and tramway buses (Fig.5.5). Nevertheless, in absolute terms, the total number of trips by each main public mode has continued to fall, accompanied by an increase in average

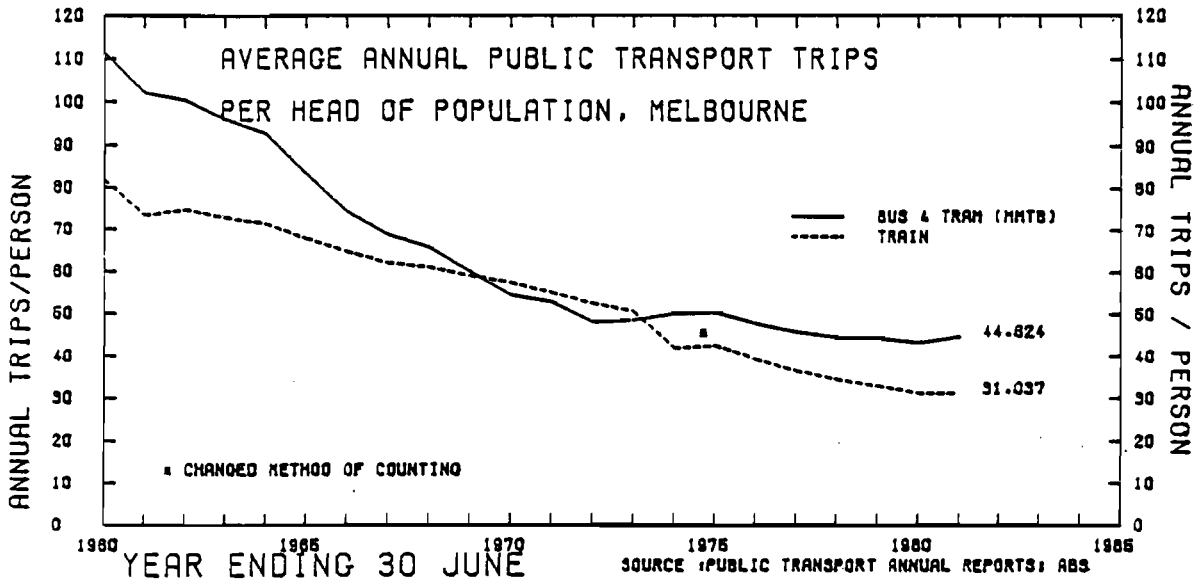
AVERAGE ANNUAL PUBLIC TRANSPORT TRIPS
PER HEAD OF POPULATION, MELBOURNE
BUS & TRAM (MMTB)
TRAIN
44.824
31.037
* CHANGED METHOD OF COUNTING
ANNUAL TRIPS/PERSON
ANNUAL TRIPS / PERSON
YEAR ENDING 30 JUNE
SOURCE: PUBLIC TRANSPORT ANNUAL REPORTS; ABS
120
110
100
90
80
70
60
50
40
30
20
10
0
1960
1965
1970
1975
1980
1985

Figure 5.3

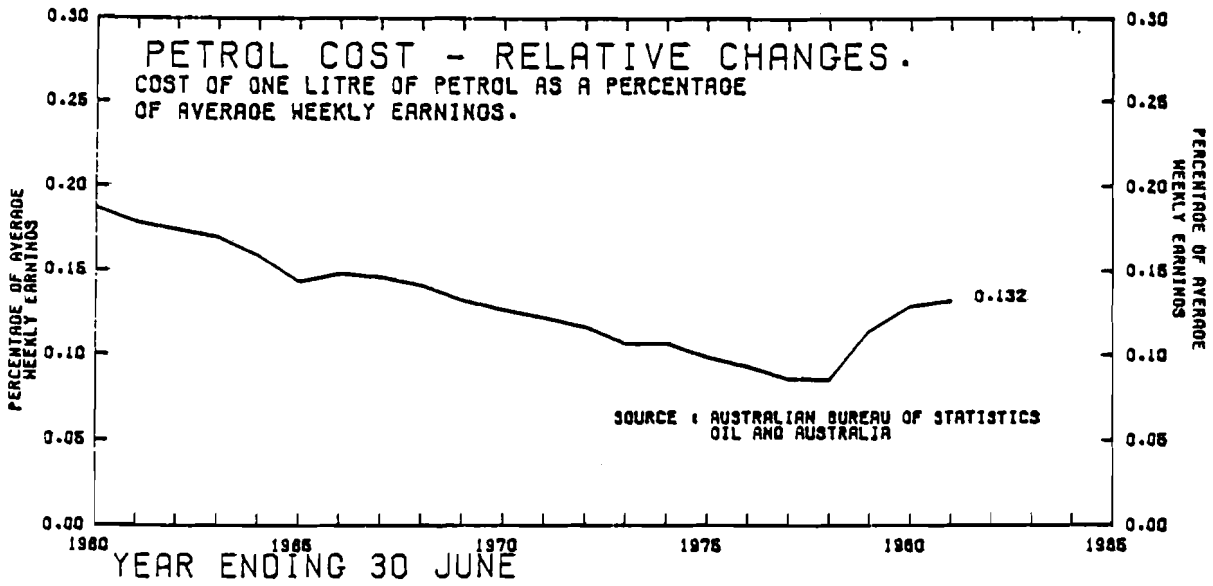
PETROL COST - RELATIVE CHANGES.
COST OF ONE LITRE OF PETROL AS A PERCENTAGE
OF AVERAGE WEEKLY EARNINGS.
PERCENTAGE OF AVERAGE WEEKLY EARNINGS
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0.132
SOURCE : AUSTRALIAN BUREAU OF STATISTICS
OIL AND AUSTRALIA
1960
1965
1970
1975
1980
1985
YEAR ENDING 30 JUNE

Figure 5.4

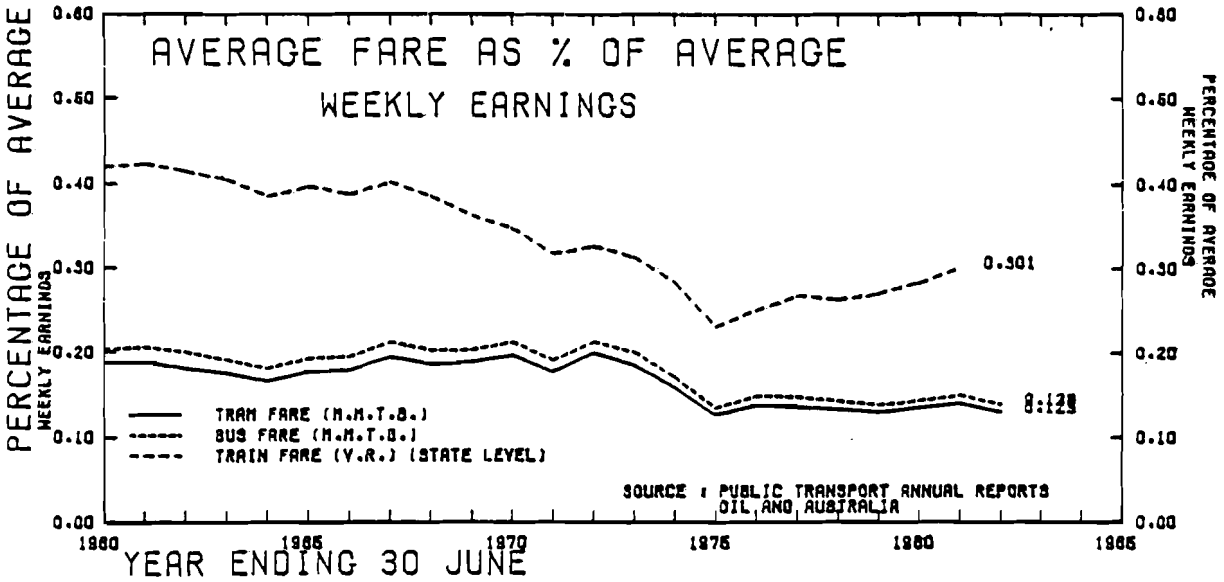
AVERAGE FARE AS % OF AVERAGE
WEEKLY EARNINGS
PERCENTAGE OF AVERAGE WEEKLY EARNINGS
0.60
0.50
0.40
0.30
0.20
0.10
0.00
0.301
TRAM FARE (M.M.T.B.)
BUS FARE (M.M.T.B.)
TRAIN FARE (V.R.) (STATE LEVEL)
SOURCE : PUBLIC TRANSPORT ANNUAL REPORTS OIL AND AUSTRALIA
1960
1965
1970
1975
1980
1985
YEAR ENDING 30 JUNE

Figure 5.5

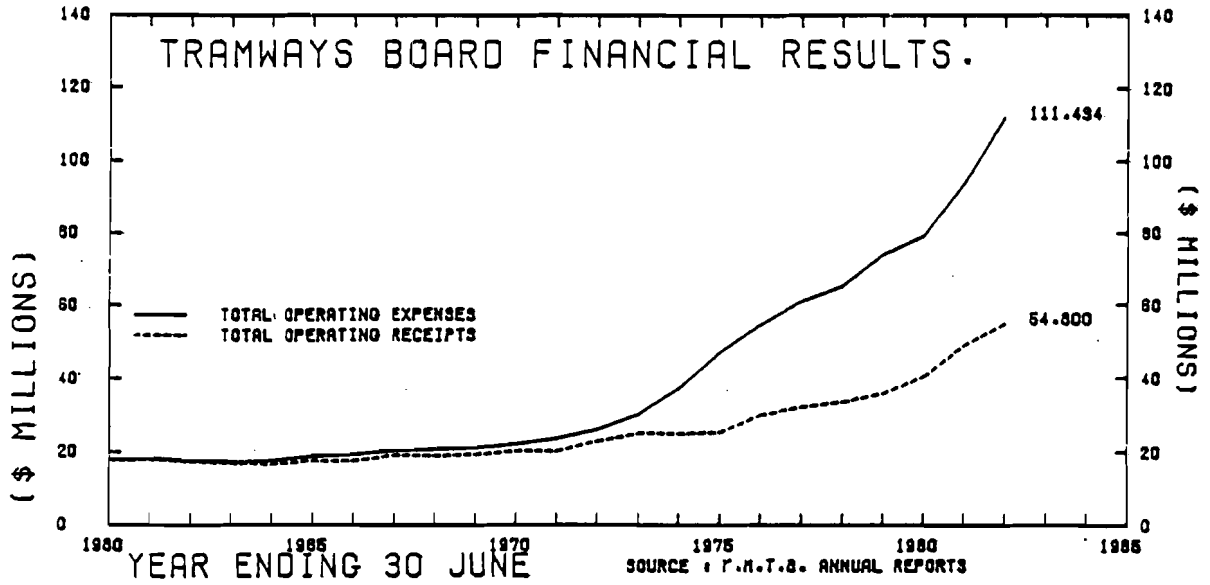
TRAMWAYS BOARD FINANCIAL RESULTS.
111.494
54.800
TOTAL OPERATING EXPENSES
TOTAL OPERATING RECEIPTS
($ MILLIONS)
($ MILLIONS)
0
20
40
60
80
100
120
140
1960
1965
1970
1975
1980
1985
YEAR ENDING 30 JUNE
SOURCE : T.M.T.B. ANNUAL REPORTS

Figure 5.6

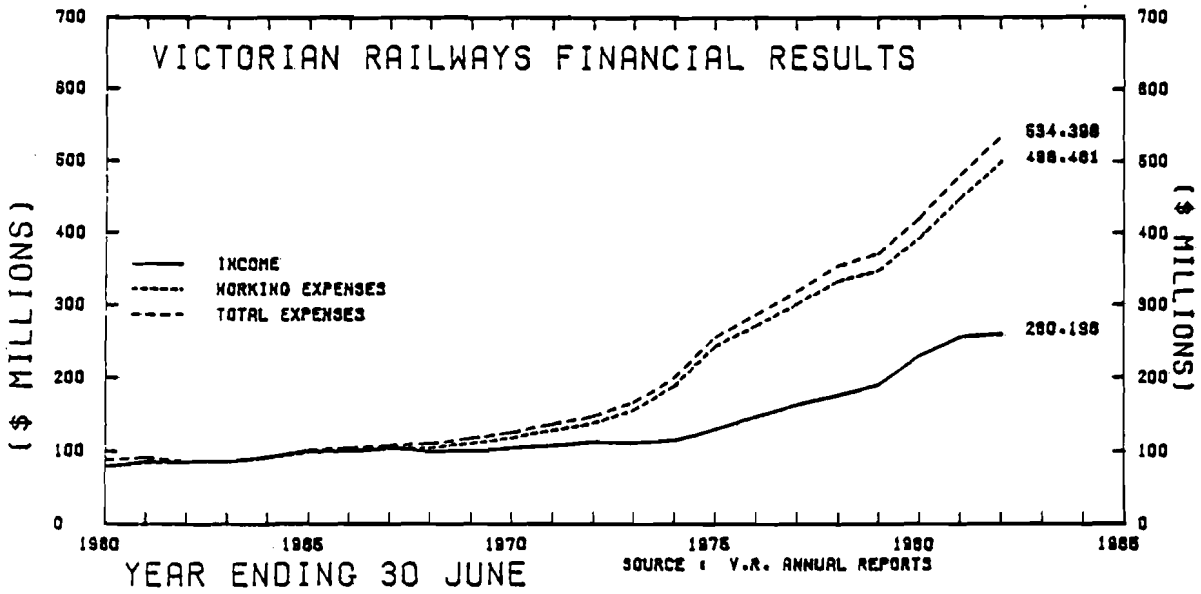
VICTORIAN RAILWAYS FINANCIAL RESULTS
INCOME
WORKING EXPENSES
TOTAL EXPENSES
534.398
488.481
280.198
( $ MILLIONS )
( $ MILLIONS )
700
600
500
400
300
200
100
0
1960
1965
1970
1975
1980
1985
YEAR ENDING 30 JUNE
SOURCE : V.R. ANNUAL REPORTS

Figure 5.7

length per journey.

In Figures 5.6 and 5.7, the rapidly increasing deficits in real terms in operating the tramway and rail system respectively are indicated, noting that the latter figures cover operations for the whole of Victoria. Because of the strong CBD orientation of many of the peak public transport trips in Melbourne (i.e. the main determinant of the supply side), strongly subsidized public transport trips tend to be regressive, that is, they benefit white-collar workers more than blue-collar. Of course, those travellers who commute the longest distances are subsidized the most, particularly in terms of the current fare structure and partial express runs from the outer suburbs. This represents a positive externality for those households locating in outer suburbs with a good train service to the CBD, which is utilized by at least one household member. On the other hand, it may also be argued that such professional households, who pay the highest taxes, are entitled to such higher public subsidies! In addition, good public transport is essential for transport-disadvantaged groups, such as school children and pensioners. As indicated by Beed (1981), off-peak users of both the public and private transport systems subsidize the peak users, particularly in the case of private transport. Further work needs to be done conversely on assessing the implicit subsidies by public transport users to users of the private system, due to the corresponding reductions in congestion, accidents and pollution etc., before a 'reasonable' level of deficit for the public systems can be determined.

### 5.2.2 Private Transport Trips

Because of the peaked nature of work trips (despite recent trends towards flexible working hours), they usually represent the demand side

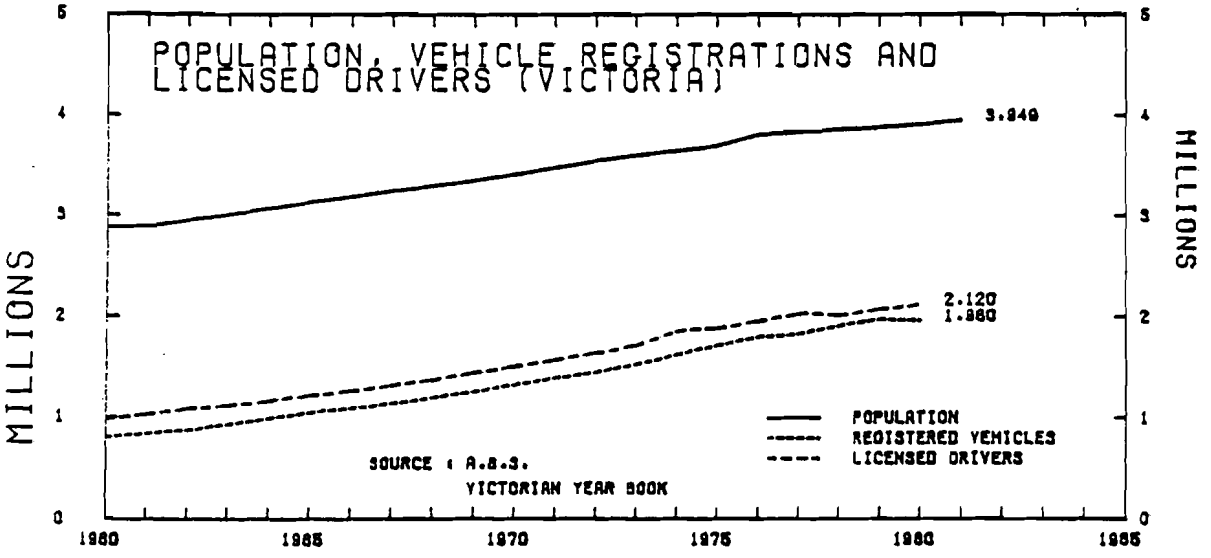
POPULATION, VEHICLE REGISTRATIONS AND LICENSED DRIVERS (VICTORIA)
MILLIONS
MILLIONS
0
1
2
3
4
5
1960
1965
1970
1975
1980
1985
3.849
2.120
1.880
POPULATION
REGISTERED VEHICLES
LICENSED DRIVERS
SOURCE : A.B.S.
VICTORIAN YEAR BOOK

Figure 5.8

for design of transport networks. However, in addition, it is useful to compare the changes over time in licensed drivers and registered vehicles vis-a-vis the general growth in population. Such relations are shown for the whole of Victoria in Fig.5.8, and should apply in relative terms also for Melbourne. In order to pick up the non-symmetrical character of Melbourne work trips from the East versus the West, the three zone system for Melbourne is subivided into a 6 zone system, with the middle zone being divided into 2 sub-zones and the outer zone into 3 sub-zones (see Figure 1.2), with the abbreviations I - Inner, MW - Middle Western, ME - Middle Eastern, OW - Outer Western, OE - Outer Eastern and OS - Outer Southern. The work trips are taken from the 1971, 1976 and 1981 Censuses (N.B. Only the 1976 and 1981 (partial) are covered in this First Draft), and in Tables 5.1 and 5.2 the 1976 and 1981 trip percentages are presented respectively.

Table 5.1 - 1976 Work Trip Percentages

| From \ To | I | MW | ME | OW | OE | OS | Total Workers |
|---|---|---|---|---|---|---|---|
| I | 8.14 | 0.99 | 0.98 | 0.08 | 0.08 | 0.01 | 10.28 |
| MW | 9.51 | 17.04 | 0.73 | 0.97 | 0.13 | 0.02 | 28.40 |
| ME | 13.52 | 1..90 | 16.70 | 0.19 | 1.60 | 0.14 | 34.05 |
| OW | 1.52 | 2.05 | 0.17 | 1.73 | 0.09 | 0.01 | 5.57 |
| OE | 3.40 | 0.64 | 4.39 | 0.14 | 7.65 | 0.32 | 16.54 |
| OS | 0.62 | 0.05 | 0.77 | 0.01 | 0.53 | 3.18 | 5.16 |
| Total Jobs | 36.71 | 22.67 | 23.74 | 3.12 | 10.08 | 3.68 | 100.00 |

Table 5.2 - 1981 Work Trip Percentages (Partial Data)

| From \ To | I | MW | ME | OW | OE | OS | Total Workers |
|---|---|---|---|---|---|---|---|
| I | 7.70 | 0.97 | 0.90 | 0.08 | 0.07 | 0.01 | 9.73 |
| MW | 8.94 | 16.03 | 0.68 | 0.91 | 0.12 | 0.02 | 26.70 |
| ME | 12.86 | 1.86 | 15.97 | 0.19 | 1.57 | 0.13 | 32.58 |
| OW | 1.90 | 2.59 | 0.20 | 2.20 | 0.11 | 0.01 | 7.01 |
| OE | 3.74 | 0.74 | 4.79 | 0.17 | 8.35 | 0.33 | 18.12 |
| OS | 0.69 | 0.06 | 0.86 | 0.01 | 0.60 | 3.64 | 5.86 |
| Total Jobs | 35.83 | 22.25 | 23.40 | 3.56 | 10.82 | 4.14 | 100.00 |

Finally, we normalize each row of the work trip matrix, and indicate in Table 5.3 the 1976 trip destination percentages, given the origins.

Table 5.3 - 1976 Work Trip Destination Percentages given Origins

| From \ To | I | MW | ME | OW | OE | OS | Total Workers |
|---|---|---|---|---|---|---|---|
| I | 79.15 | 9.67 | 9.47 | 0.80 | 0.77 | 0.14 | 100.00 |
| MW | 33.49 | 60.00 | 2.58 | 3.40 | 0.45 | 0.08 | 100.00 |
| ME | 39.70 | 5.57 | 49.05 | 0.57 | 4.70 | 0.41 | 100.00 |
| OW | 27.27 | 36.90 | 2.99 | 31.13 | 1.64 | 0.07 | 100.00 |
| OE | 20.59 | 3.86 | 26.54 | 0.87 | 46.23 | 1.91 | 100.00 |
| OS | 12.00 | 1.00 | 14.97 | 0.11 | 10.27 | 61.65 | 100.00 |

The partial data used to assemble the 1981 matrix do not justify a similar table as Table 5.3 for 1981.

From Tables 5.1 and 5.2, there is a clear tendency for reduction of both jobs and residential percentages in the 3 innermost zones, and a corresponding increase in the 3 outermost zones. The greatest relative increase of housing of 26% (i.e. 5.57 to 7.01) occurs in the Outer-Western region, as well as the greatest relative increase in jobs of 14% (i.e. 3.12 to 3.56). This may be due to the cheaper residential and industrial land in this region, during a period when interest rates were at high levels. Looking at the diagonal terms in both Tables, it is also seen that the outer zones are becoming more self-contained (i.e. a higher proportion of zonal residents finding their jobs intrazonally) and the inner zones less self-contained. In Table 5.3, it is shown that about 21% of inner zone residents reverse commute, dropping to about 5% for middle zone residents. In assessing the rationale for the Westgate Bridge, it is seen that about 4.0% of 1976 total trips go to the West from the Inner, Eastern or Southern suburbs, whereas 1.1% of trips go

from West to East plus a further 11.0% from the West to the Inner area. These percentages remained relatively unchanged by 1981, although the modal split to private transport was greater by then. Although many of the private trips from the West to the Inner area would not conveniently travel via the bridge, it could at least compete for the private transport component of say (4.0 + 1.1 + 3.0) i.e. about 8% of the total commuter trips.

Even by 1981, about 36% of total commuter trips were terminating in the Inner area, dropping from about 37% in 1976. Such figures justify continued strong support for the radially-oriented suburban rail and tramway systems.

### 5.2.3 Changes in Modal Split

A good indication of the relative decline in the use of public transport in Melbourne is given in Figure 5.9 (from Board of Works data). For information at a spatial level, the best source is the Home Interview Travel Survey, carried out for the Victorian Ministry of Transport in 1964, 1972 and 1978/79. As the surveys were carried out for 10 'typical' Melbourne local government areas (municipalities), we will not attempt to massage the data to fit the above 6 zone scheme, but will return to the original IIASA 3 zone arrangement. Several points are worthly of discussion.

From 1964 to 1979/80, the proportion of total metropolitan rail trips for the combined purposes of 'white-collar' commuting and school travel increased from 46% to 54%. The corresponding increase for the tramway and tramway bus system was from 41% to 52%. For every trip purpose, there was a decline in modal split to public transport over each

# ANNUAL PASSENGER KILOMETRES IN MELBOURNE BY CAR, TRAIN AND TRAM (INCLUDES M.M.T.B. BUSES)

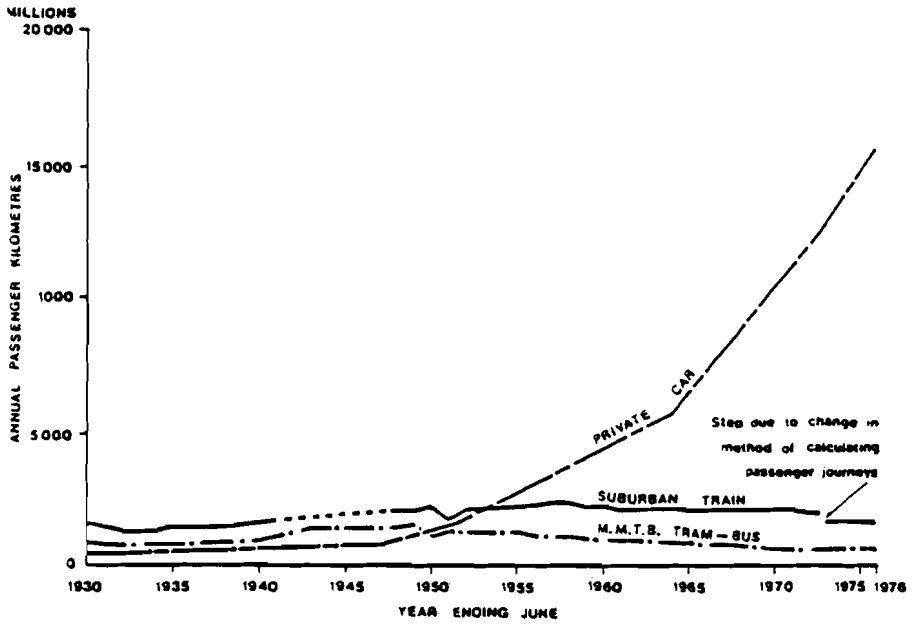


Figure 5.9

succeeding survey. Thus the percentage of unlinked trips by private motor vehicles increased from 64% in 1964, to 80% in 1972 and 84% in 1978/79. The extent of this modal split can be gauged from the annual passenger kilometres for each mode, given in Figure 5.10. At the same time, the number of unlinked trips per person per day increased from 1.70 in 1964, to 2.26 in 1972 and 2.36 in 1978/79.

Regarding the spatial distribution, Table 5.4 below indicates the approximate percentage of work trips which used public transport as the main mode out of each of the three IIASA regions:

Table 5.4 - Percentage of Linked Work Trips by Public Transport

| Zone / Survey | Inner (1) | Middle (2) | Outer (3) |
|---|---|---|---|
| 1964 | 48 | 32 | 28 |
| 1972 | 42 | 26 | 18 |
| 1978/79 | 30 | 22 | 14 |

As expected, the maximum relative reduction in modal split (i.e. about 50%) occurred for commuters living in the Outer ring. The reduction for both Inner and Middle ring residents was about 35%. With even the modal split of public transport commuter trips falling to 30% in the Inner ring, the increasing dominance of the car in the commuting patterns of Melbourne is clearly visible.

### 5.2.4 Congestion and Pollution

Because of the relatively smooth topography of Port Phillip Bay (compared say with the identations of Sydney Harbour), as well as a

reasonable use of public transport for CBD travel, Melbourne does not suffer the extreme peak period road congestion problems found in many other cities of comparable size. However, Melbourne at times experiences air pollution problems on days with temperature inversions, and such problems are clearly exacerbated by even moderate levels of congestion. Taylor and Anderson (1984) have performed much relevant work in this field, and the following Tables are assembed from their work. Their zoning system is based on 4 regions, with their Inner and Middle zones corresponding to Inner and Middle-West and Middle-East in our 6 zone system (see Figure 1.2), and their outer zone being an amalgamation of Outer-West, Outer-East and Outer-South.

For considering location of vehicles on the network and their relative average travel speeds, Tables 5.5 and 5.6 are reproduced from Taylor and Anderson for 1976 and 1981 respectively.

Table 5.5

Percentage of Travel by Trips Produced in Each Zone,

1976 Morning Peak

| Location | Percent of Total Veh-km | Veh-h |
|---|---|---|
| Inner | 4.6 | 4.9 |
| MW | 23.5 | 25.4 |
| ME | 35.2 | 39.9 |
| Outer | 36.7 | 29.8 |
| Total | 100.0 | 100.0 |

Table 5.6

Percentage of Travel by Trips Produced in Each Zone,

1981 Morning Peak

| Location | Percent of Total Veh-km | Veh-h |
|---|---|---|
| Inner | 4.2 | 4.3 |
| MW | 21.9 | 22.3 |
| ME | 32.7 | 38.2 |
| Outer | 41.2 | 35.2 |
| Total | 100.0 | 100.0 |

The clearest result is the large relative increase in travel on the outer part of the network between 1976 and 1981. The congestion levels are indicated by the departure from proportionality of the vehicle hours versus the vehicle kilometres, where the outer areas (in both years) appear to much less prone to congestion than both the middle and inner areas. The Middle Eastern (and Southern) area in 1981 is indicated as being the most congested.

Similar results can be quoted for pollution emissions, where Tables 5.7 and 5.8 below relate to carbon monoxide (CO) emissions.

Table 5.7

CO Emissions by Trips Produced in Each Zone,

1976 Morning Peak

| Location | Total Mass (tonne) | CO Emissions Mean Rate (g/km/veh) | Percent Emitted by |
|---|---|---|---|
| Inner | 2.63 | 19.84 | 5.2 |
| MW | 12.79 | 19.67 | 25.5 |
| ME | 19.55 | 20.61 | 39.0 |
| Outer | 15.14 | 15.04 | 30.3 |
| Total | 50.11 | 18.30 | 100.0 |

Table 5.8

CO Emissions by Trips Produced in Each Zone,

1981 Morning Peak

| Location | Total Mass (tonne) | CO Emissions Mean Rate (g/km/veh) | Percent Emitted by |
|---|---|---|---|
| Inner | 2.83 | 20.36 | 4.7 |
| MW | 13.44 | 19.11 | 22.4 |
| ME | 22.41 | 21.93 | 37.5 |
| Outer | 21.19 | 16.08 | 35.4 |
| Total | 59.87 | 18.82 | 100.0 |

The total pollution levels of course increase considerably by 1981 (i.e. by about 19%). However, as this is accompanied by a relatively small increase (i.e. about 3%) in mean unit pollution values, the main increase in volume of pollution is cased by an increase in traffic volumes rather than congestion levels. As expected, the outer traffic produces the lowest emissions per vehicle kilometre. However, due to the large relative increase in vehicle kilometres in the outer area (compare Tables 5.5 and 5.6), there is a large increase in <u>total</u> emissions there. At the same time, the very large area of the outer zone provides considerable scope for dispersion.

# 6. Planning and Policy-Making Trends

## 6.1 Historical Background to Melbourne's Planning

The role of Planning and policy-making in the metropolis of Melbourne can largely be characterized by reference to the following four evolutionary stages of the city's development:

STAGE 1 - THE PASTORAL PERIOD (1835 -1929)
during which control of metropolitan development was exercised using the English zoning approach to planning.

STAGE 2 - THE RESIDENTIAL PERIOD (1929-1947)
during which priority was given to the protection of residential areas and the removal of incompatible land uses especially industrial activity (Figure 6.1), resulting in the uncoordinated provision of infrastructure.

STAGE 3 - THE INDUSTRIAL PERIOD (1947-1971)
during which unprecedented growth occurred and sustained expansion of industry was experienced behind a tariff wall and under a policy which saw the development of manufacturing for a local market.

STAGE 4 - THE POST-INDUSTRIAL PERIOD (1971 onwards)
during which a slowdown in growth has occurred tempered by economic recession and substantial changes in the structure of the local and global economies, although Melbourne's planning agencies remain largely unaltered.

Melbourne's planning since the second World War has exhibited two persistent trends - an assumption of responsibility by official bodies and a sharpening of awareness of the needs of industry (AIUS, 1973; Pickett, 1973). Control began in 1929 with the Metropolitan Town Planning Commission's Plan of General Development. Planning was largely

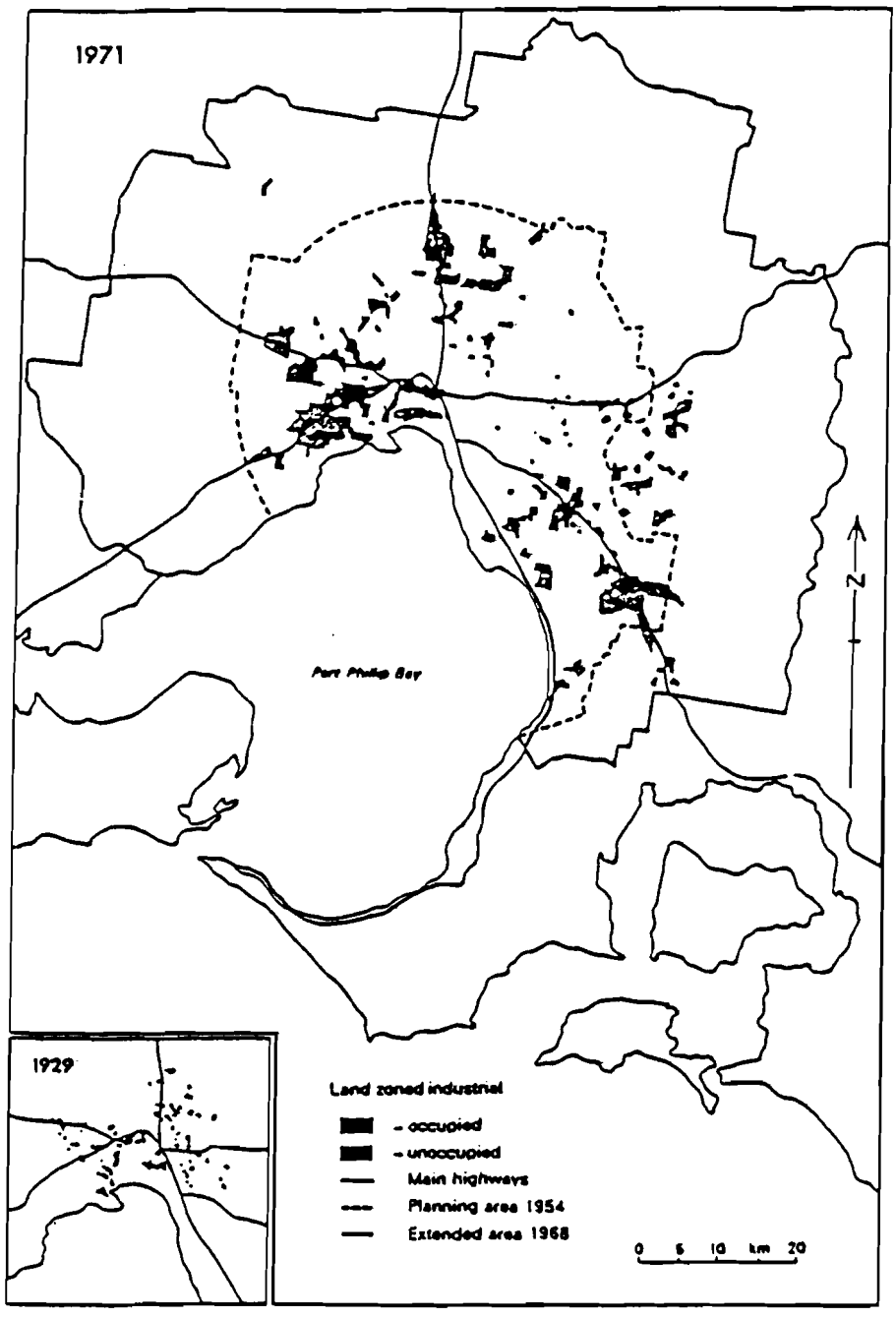


Figure 6.1 Industrial land (1929) and industrial zonings (1971), Melbourne.

(Sources: Metropolitan Town Planning Commission, 1929; Wadley and Bentley, 1981).

negative, with prohibitive lists regulating existing land use rather than providing direct encouragement to particular forms of growth. Overall, the report had little impact on metropolitan land use. This was a political environment in which the Federal Government was largely uninterested or even antagonistic to the concepts of detailed economic and spatial planning, relying instead on the largely unconstrained operation of free-market forces to shape the city's development. With a few notable exceptions, metropolitan planning has not been a concern of the National Government to this present day.

Despite the general antagonism to planning in both federal and state circles, it has naturally become necessary to plan for Melbourne's development in a variety of ways. A large and sprawling city must at least be organized for the provision of basic public utilities such as transport, energy, water, and waste disposal systems. Thus, a metropolitan planning authority known as the Melbourne and Metropolitan Board of Works (MMBW) was empowered in 1949 to produce a plan for the metropolitan area, which it did in 1954 and again in 1971. Despite the emergence of other state, regional and local authorities concerned with various aspects of metropolitan planning (for a summary, see Newton and Johnston, 1981, pp.84-92), the major force in shaping Melbourne's land use is still the MMBW.

Of its several published reports concerning the plans for Melbourne's development, the first (Melbourne Metropolitan Planning Scheme, 1954) has received most positive comment: 'Hardly a problem of Melbourne as we know it today was not covered in that Report, although some of the suggested solutions we now know to have been infeasible' (Joy, 1977).

A reading of the 1954 Report reveals some of the principal concerns:

(i) The sprawling, low density development, which has added substantially to the cost of providing the normal utility services, to the cost of transportation, and to time taken to travel from one part of the city to another.

(ii) The decline in the residential amenities of the inner suburban area due to the obsolescence and low standard of many homes and to the encroachment of industry and other non-residential uses.

(iii) The expansion of industry and its guidance to locations which will be convenient for both industrialists and workers, and which will bring about an adjustment of the present unbalanced distribution of places of residence and work.

(iv) The congestion resulting from the increasing concentration of activities within and adjoining the central business area.

(v) The increasing difficulty in the movement of people and goods throughout the planning area due partly to the increase in the population, but more particularly to the increasing use of motor vehicles.

(vi) The difficulty of securing sufficiently large sites for schools within convenient distances of the children's homes and for hospitals in suitable locations.

(vii) The lack of sufficient parklands and playing fields to meet the needs of the growing population.

These difficulties were to be overcome as far as possible by outlining several guiding strategies as a foundation for detailed local planning. For example, limiting the outward growth of the city by the provision of a rural zone which surrounds the area set aside for urban development

(to contain a projected 2 million people by 1980-85) extending to the metropolitan boundaries; decentralising population, commercial and industrial activity (to satellite towns, and perhaps most interestingly, to five 'district centres' within the metropolitan areas) to relieve congestion in the central city and reduce commuting distances to work and shops; increasing residential densities by encouraging apartment development; facilitating greater public transport usage by employing a system of feeder bus services from outer suburbs to the nearest railway station; provision of an arterial road system (ring road to by-pass CBD; intersuburban; radial) to permit an uninterrupted movement of the increasing volume of road traffic.

To determine future land use requirements, existing land uses were classified and tabulated; development trends were used to estimate space for future zonings (Figure 6.2). The 1954 parameters for determining industrial land requirements largely still remain. In allocating land, little assessment was made of the desirability or efficiency of the urban pattern for economic activity: existing land use was rationalised and new development monitored but neither restrained nor restructured. The 1954 planning scheme was thus relatively simple containing statutory maps and an enabling ordinance. While enforcing legislation was being enacted, control under interim development order was instigated. Following review of objections, the plan was submitted for government approval in 1959 but required re-exhibition and was not given statutory force until 1968 (Sandercock, 1975).

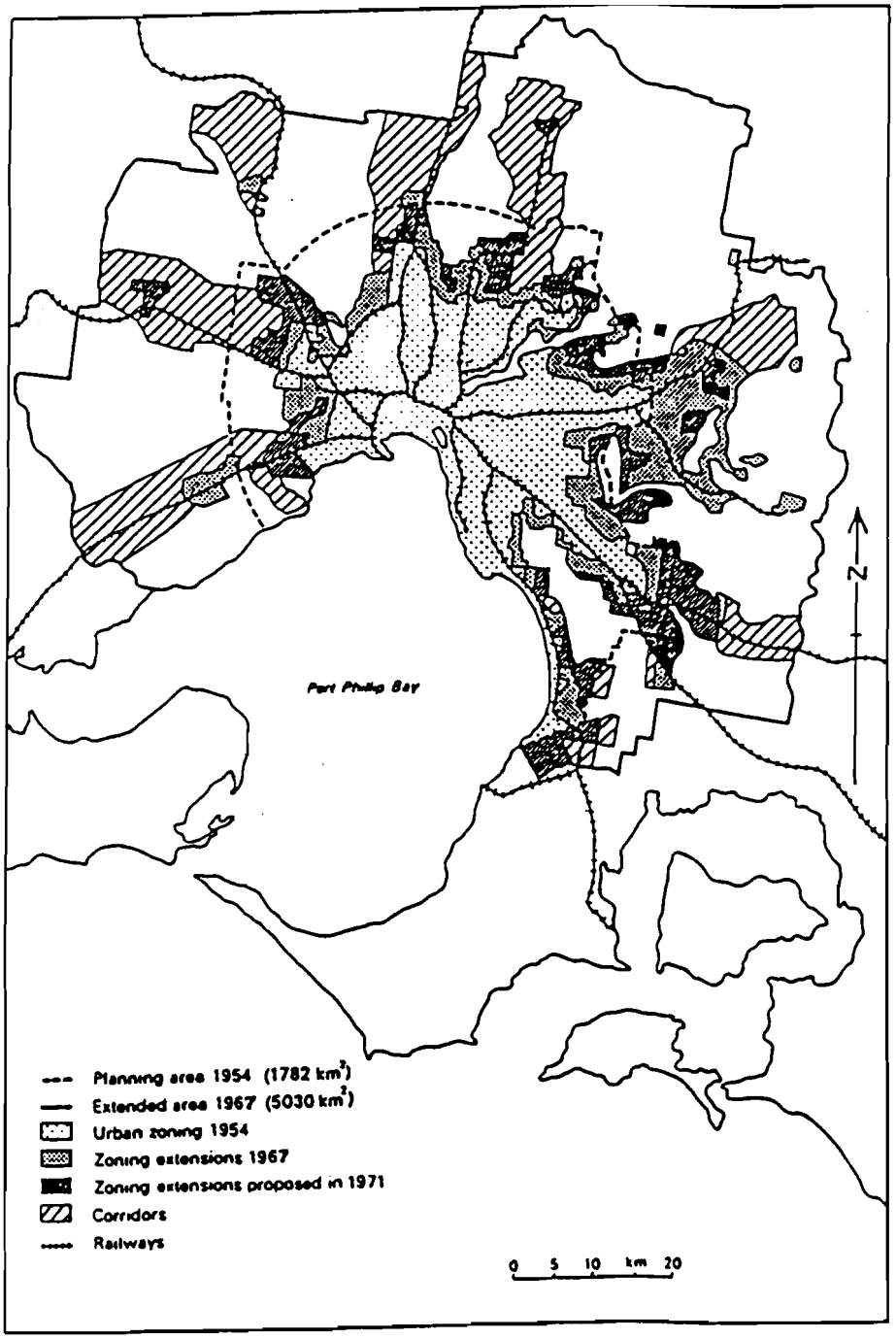


Figure 6.2 Development of Metropolitan Planning Schemes, Melbourne, 1954 to 1971.

(Source: AIUS, 1973)

In the 15 years which followed the release of the 1954 Report, Melbourne experienced rapid population growth (through natural increase and overseas immigration), passing the planners' ultimate population forecast 10-15 years earlier than expected. Low density suburbanisation intensified as rural and green belt land was rezoned for extensive residential development, and a high level of personal mobility was achieved via the automobile (while development of public transport stagnated). However, as early as 1966 it became apparent that a reappraisal of regional planning was required to meet Melbourne's future growth. This move was precipitated to a degree by the friction and uncertainty surrounding the existence of two planning authorities with overlapping but uncoordinated responsibilities for the city's development: the Town and Country Planning Board of Victoria (TCPB), which was commissioned to make reports and recommendations to the government on planning schemes (which it could itself prepare) and town planning matters generally, and the MMBW. The State Government called for planning blueprints from both these bodies.

In 1967, the MMBW produced The Future Growth of Melbourne which pioneered a more positive role for planners in directing urban expansion. The goals and the planning area were enlarged (Figure 6.2) not simply to accommodate an estimated five million people by the year 2000 (TCPB, 1967) but to ensure them adequate access to employment and services (MMBW, 1967). The report introduced the concept of structured growth along urban corridors rather than the trend development of the past. Limited satellite development would be undertaken in the unfavoured north and west to balance the heavy residential surge to the southeast. However, the CBD was to remain the dominant centre in the metropolitan area. Though foundations were laid for an integrated

scheme, specific details on industry were again lacking (Wadley and Bentley, 1981).

The corridor concept of 1967 was incorporated in the MMBW's Planning Policies for the Melbourne Metropolitan Region (1971) which for the first time identified and provided guidelines for the allocation and use of industrial land (Figures 6.1 and 6.2). The zoning pattern was based on parameters similar to those of 1954. Planners assessed the expected expansion of existing plants and the establishment of new enterprises, the extent of land already utilised, and restrictions on the development of unused land. The amount of industrial zoning in each corridor was related to the size of the manufacturing workforce expected to live there and so was directly associated with residential provision. The developed section of each corridor was analysed to derive various density and employment criteria for future expansion. To allow for under-utilisation and non-manufacturing uses and for the choice of location, the initial (i.e. manufacturing) allocations estimated by workforce characteristics were doubled to give a broadly interpreted industrial requirement for each corridor.

The 1971 planning scheme reflected an increasing awareness of the importance of the allocation and use of industrial land. The report itself argued that 'Melbourne for a long time has been the most industrialised capital, where manufacturing industry employs almost four out of ten workers'. Although the suburbanisation process was clearly recognized, there was little questioning of the long run significance of manufacturing as a provider of jobs in the future (Logan, 1977). During the sixties, physical planning was gradually recognized as only one aspect of a complex process of growth and organization as the discipline

shifted from a traditional position concerned mainly with the detail of environment and amenity to a closer alignment with the aspirations of the community (Powell, 1966; LIchfield, 1968). Accordingly, the MMBW perceived the need to improve not merely the physique of Melbourne but also its economic metabolism.

Yet at the time the 1971 report was being issued a number of fundamental political, economic and social changes were already in train, which were to produce a pattern of development substantially different to that experienced previously. For example, the first direct incursion into urban affairs by federal government came in 1972 when the governing Liberal Party established a National Urban and Regional Development Authoirity (NURDA). NURDA was shortlived, being replaced by a new Ministry and Department of Urban and Regional Development (DURD) when the Labour Party took office early in the following year. In addition to the introduction of a range of specific metropolitan programmes, DURD introduced a broader regional strategy concerned with directing future metropolitan growth away from the capital cities to selected cities and towns in the middle (and largely vacant) tier of the nation's urban hierarchy; the reasoning being that the rapid growth rates in Sydney and Melbourne were seen as causing inequalities amongst some community groups and inefficiencies in the allocation of national resources. Thus the slowing down of these growth rates became one of the major policies for achieving a national redistribution of population (MMBW 1977a, p.77).

Although this policy of decentralized growth centre promotion was discontinued at the end of 1975 (when the Labour Party was defeated), Melbourne's growth and development during this period slowed

considerably.

Two interrelated and deepseated socio-economic problems had appeared: a downturn in the hitherto prosperous manufacturing sector with the prospect of considerable job losses, and a steady decline in Melbourne's inner city (region I) population. Concern about these two problems was expressed early by the MMBW (1974a) who strove to address the more general issue of perceived inequalities in access and opportunity throughout the whole metropolitan region. The Board argued that vigorous postwar growth in Australian manufacturing had actually diverted attention away from an automation-induced drop in blue-collar labour intensity. This was not generally noticed until the downturn in manufacturing activity in the early seventies, which left many manual workers without a job and with little prospect of ever finding another (Little, 1977).

The arguments and counter-arguments ventured at this time provide valuable insights into the difficulties and dangers associated with identifying specific cause-effect relationships as being fundamental to an explanation of metropolitan change. For this reason alone, we shall summarize the debate.

The main issue under scrutiny was whether the decline in Australian manufacturing would create (or possibly shroud) additional job losses in other economic sectors within major cities (the multiplier principle in reverse) and aggravate further socio-economic decline in the inner city area. High local levels of unemployment had previously been associated with high local levels of poverty, crime, family breakdown and general social dysfunction (MMBW, 1974b). Following this argument, unemployment

in Melbourne would be localised according to the distribution of the blue-collar workforce in the inner and outer northern and western suburbs. But new technology was also making inroads in such occupations as accounting and clerical work, jeopardising the employment of less skilled white-collar staff and raising the risk of decline in inner city areas. Social run-down, divisiveness and pathology could foster an urban crisis of the type seen in certain European (e.g. London) and North Anmerican (e.g. New York) cities. In other words, those who have skills in demand would flee to increasingly prosperous suburbs, worsening the plight of inner city areas.

The recommended solution to this problem was a stimulation of alternative job opportunities within the unskilled services sector for the displaced manufacturing workers (Little, 1977; Little and Carter, 1979). Analysis of US cities suggested that producer services such as banking, insurance and research and development were becoming the driving force of large metropolitan economies. While a shift into these activities was desirable in Melbourne, the unemployment from manufacturing could also be absorbed in non-professionalised serves such as retailing and wholesaling. But opportunities in the latter fields grow quickly only in large cities with high inner area populations. Even though official policy still favoured a dominant central business district (MMBW, 1971), Melbourne had been losing inner city residents and jobs for more than a decade. Whereas two-thirds of Melbourne's total employment was in the inner area in 1961, only half was there in 1971 (MMBW, 1977a). According to Little, the correct policy in this situation is a spatial one in which the centre must be reinforced with nominated services and the population increased in the inner city area; a more concentrated metropolis will be better equipped to cope with

structural change.

Predictably, this thesis triggered off lively debate and many of its tacit assumptions were questioned by Melbourne's planning community. The following four points of controversy have largely been taken from Wyatt (1982):

1. It is doubtful whether the horrific social, financial, racial and blight problems experienced by some very large US cities can be fruitfully compared with problems of Melbourne's inner area. Indeed, O'Connor (1977) has questioned the database and methodology of Little's work. He suggests that inner city problems represent inequities endemic to Western development, and that a more appropriate spatial response to structural change is to recognize the suburbs as significant socio-economic units and to manage them as integral parts of the region (O'Connor, 1977, p.12).
2. The extremely high correlation between social dysfunction and unemployment does not necessarily imply any causal relationship between the two factors. Indeed, the MMBW's report recognized this need for caution concerning causality (MMBW, 1974b, p.9), although it did assert that strong a priori grounds exist for believing that unemployment causes certain dysfunctions to occur. Even if the latter were true, this alone cannot guarantee that the alleviation of such unemployment will cure established social dysfunction in the same area.
3. Policies which reject all measures to stimulate manufacturing not only imply rejection of traditional props such as tariffs and subsidies, but also disregard the success stories of more advanced nations who have preserved or revitalized large sections of manufacturing activity through capitalization, specialization or

technological innovation. If vigorous growth in services is largely concealing a rising rate of automation-induced redundancies, a more even-handed policy designed to stimulate several sectors of inner city employment would be preferable.

4. The claim that more unskilled service jobs per head of Melbourne's population could be generated by increasing the size and concentration of the inner metropolis has been disputed (Wyatt, 1978). This concern highlights once again the importance of gathering data which is appropriate to the problem area in question, using statistical techniques which are relevant to the data so collected, and carefully resisting the urge to draw specific correlation-causation conclusions until the chosen analytical techniques are beyond reasonable doubt.

The resolution of these issues and other significant debate over the inner-city controversy has been gradual. The concentration policy proposed originally was carefully modifed to one of containment (MMBW, 1979a), involving a deceleration of the inner city's depopulation trend. This stance was further modified with the introduction of an incremental growth option (MMBW, 1979b) to supplement the strategic options mentioned earlier (dispersing growth, centralized growth, suburbanized growth). This new alternative implied consolidation of development around a small number of designated, inner (region I) or intermediate (region II) commercial centres. The final choice between these alternative strategies was made the following year (MMBW, 1980), after considering the ramifications of such strategies for Melbourne in relation to five main criteria - energy, efficiency, employment, environment and equity. Among its employment considerations was a recognition of pockets of local unemployment in northern, western and

inner suburbs caused by the decline in traditional manufacturing and suburbanisation elsewhere of newer, expanding forms of production. The Board's thinking was influenced by Little's (1977) view that the service industries were likely to be the key growth sector. The final recommendation was a strategy of incremental growth, involving 'balanced development'. It seeks to ensure comprehensive planning for fringe growth and its essential services while simultaneously encouraging as much growth in existing urban areas as can be readily accommodated (MMBW, 1980, pp.20-21). Central Melbourne is to remain the hub of government, tourist, entertainment, commercial and cultural functions and the preferred development areas and corridors will guide fringe growth into districts which can more easily be serviced.

To facilitate policy-relevant aspects of the ensuing comparative analysis, the following summary of various aspects of Melbourne's current development strategy (MMBW, 1980) and its implementation (MMBW, 1981) is given;

Employment and Industrial Policy

The Board intends, to the extent that it can, to facilitate innovation and adaptation by industry and commerce to the emerging changes in technology and economic circumstances, as well as providing for the progressive and orderly development of industrial and commercial land. The re-use of existing buildings and land for new enterprises is encouraged, particularly in areas suffering structural change or areas offering efficient use of services and access to public transport.

In particular, the industrial development strategy emphasizes (i) more opportunities to establish small businesses in the inner and

intermediate suburbs; (ii) the concentration of industrial activities (particularly manufacturing) in areas adjoining road and rail links, and (iii) the general improvement of employment prospects in the less affluent north and west rather than promoting population growth in those areas.

Housing Policy

One of the principal objectives of the 1981 Metropolitan Strategy is to encourage and facilitate a wider range of dwelling densities, types and tenures throughout the urban area, including the developing outer residential suburbs (region III). This will help to provide for the increasing diversity of Melbourne's households. Dual occupancy of detached houses is to be promoted. There are also plans to (i) encourage new residential development in outer areas to locate at points where services and transport facilities are or can be made available; (ii) facilitate infill development and rehabilitation of housing in inner areas; (iii) facilitate higher density accommodation near public transport facilities and in or near suburban centres.

Transportation Policy

The Board's general policy goals in this area encompass the provision of public transport at sufficiently high levels of service to cater for those without a car, to alleviate the need for some households to purchase a second car, and to provide a more efficient backup to car travel. More specifically, they plan to (i) encourage a balance in transport services with each mode performing the task to which it is best suited; (ii) facilitate higher residential densities near public transport networks in association with suburban centres, (iii) facilitate activity centre development to reduce motorized travel,

especially in association with older centres.

However, a number of other planning bodies are associated with the preparation of Melbourne's Transport Plan, the majority preferring to promote prevailing tends (Beed, 1981). For example, the Victorian Transport Study recommendations were oriented to the inevitability of dominance by private transport and the continuing demise of public transport, for in Melbourne "the motor vehicle is likely to continue to be the best provider of mobility and accessibility for the individual and industry" (VTS, 1980, p.87). Thus we shall likely see the continuing dominance of the private motor vehicle and further extensions to the already dense population of area wide traffic signal controls to ease congestion.

Energy Policy

Energy policy in metropolitan Melbourne is largely one of conservation. Transport-related fuel use is the major component of energy consumption. Energy savings are sought by encouraging increased vehicle occupancy, higher-density development in areas close to public occupancy, higher-density development in areas close to public transport, the development of diverse activity centres to facilitate multipurpose trips, and/or shorter average trip lengths, higher petrol prices (world parity pricing), and higher vehicle operating costs. Generally, a more efficient use of energy and road space is favoured, since the impact of rising petrol prices on private transport in Melbourne is likely to be minor on aggregate (Lane, 1977).

There is still an unresolved policy conflict between the efficient use and the equitable distribution of various forms of energy (Sharpe,

1982); large metropolitan centres like Melbourne spend less on petrol per head (partly owing to lower prices) than smaller urban and non-metropolitan centres.

Urban Conservation and Renewal

Strategic objectives here include the encouragemnent of continued occupation and maintenance of buildings of architectural or historic significance and the provision of new development which is compatible with such buildings. The re-use of existing commercial and industrial buildings and land for new enterprises, particularly in areas suffering structural change, is also planned. The rehabilitation of older houses and selective redevelopment in the inner areas will be carried out within constraints imposed by the need to preserve some buildings in their present state.

Environmental Protection

Policies to improve the quality of the natural environment to offset the decline in recreational and resource land, and to decrease pollution of the air, the beaches and the bay include (i) retention of permanent wedges of contryside between urban corridors; (ii) elimination of urban expectations from rural areas; (iii) continuation of broadscale pastoral and cropping uses in areas north and west of Melbourne; (iv) limitation of pollutant emissions in urban areas by legislative standards; (v) compulsory licencing of polluters, (vi) complete prohibition of some damaging activities.

Although conventional policies have been adopted to combat urban pollution by Victoria's Environmental Protection Authority (EPAV, 1979), it is difficult to justify any radical policies until more adequate

information on the description, causes, effects and control of urban pollution and degradation in Melbourne has been collected and analysed.

Given its many responsibilities and powers, the MMBW (1977b) now argues that

> planning...in its broadest sense requires not only involvement with physical concerns but with the social and economic considerations as well...it is thus necessary to understand the relationship between measures fostering economic growth and their likely impact on the physical and social environment...Among other things, the task of today's metropolitan planning authorities is to effect an integration of national, regional and local objectives, so as to ensure a continual improvement in the organization and structure of the growing metropolitan complex.

If we are to successfully understand such processes, the urban system must be looked at as a whole. We must be able to see the individual social, economic, political and ecological systems as components of that total system (Harris and Little, 1975). Progress in this direction was made when the Board commissioned research into the socio-economic implications of urban development (MMBW, 1974b; Little, 1977) and its role in national economic development (Little and Carter, 1979; Carter, 1979). Although some of the findings of these studies have proven to be controversial, they have demonstrated the willingness of the Board to seek advice from the research community as an input to the policy-making process.

As far as urban modelling is concerned, the research and development of CSIRO's urban planning model known as TOPAZ (Brotchie, 1969; Brotchie, Dickey and Sharpe, 1980) was first supported by the Board in 1970. The model was used to assess the establishment and interaction costs

associated with a series of alternative corridor development strategies (Sharpe, et al., 1974). However, optimization techniques such as TOPAZ were not perceived by some of the Board's planners as being sufficient to cope with some of the complex social, economic and environmental factors in the development of the city (Harris and Little, 1975, p.211). On the other hand, a trial and error approach to determining values of land-use policy instruments for improving efficiency in system performance needs to be adopted when using the available alternative models. In addition, all workable urban models have necessarily a partial character, and all validation tests are similarly partial in nature. The alternative models used by the Board include those which help predict potential areas of demand and others which evaluate various implications of urban development strategies. To this end, Melbourne's planning authorities have examined the Alonso and Lowry models, the Patton-Clark accessibility model, and the Golding-Davidson intervening opportunities model. More recently, urban planning models which employ a stepwise interactive approach to the resolution of conflicting objectives and multistage decision processes have also been proposed (Batten, 1984).

## 6.2 Planning and Policy-Making Today

Despite a continuing lack of interest in physical planning by the Federal Government, the Victorian Government has gradually assumed greater responsibility. Departmental resources are currently devoted to the strategic areas of housing, transport, energy, commerce, industry, planning and the environment. In addition to these State Ministries, a number of independent authorities (such as the Housing Commission and the Country Roads Board) and economic agents influence the final planning

and development strategies by striving to achieve the best result in their own terms.

Recently, the boundaries of planning responsibility for the MMBW have been more strictly delimited to their traditional physical activities: the provision of urban services and the exercise of land-use controls. This redefinition stems from a realization that physical planning controls have a limited impact on social and economic decision-making or organization, and that the Board's planners had perhaps ventured too far into some areas over which they have little real control. Land-use decisions are generally a reactive response to initiatives by others, and are not such a powerful weapon in today's arsenal for strategic planning.

It must be remembered that the major infrastructure decisions of the past - such as the provision of extensive rail and road networks - in themselves embody considerable inertia or resistance to further change. In this sense, development patterns are already constrained to a significant extent, and transportation infrastructure changes are largely confined to the urban fringe. Furthermore, the unbridled speed of change during the Industrial Period (1947-1971) was also an important factor in limiting opportunities to control or implement physical planning strategies. During this period, the planning system was really "running to catch up", rather than taking the initiative or providing the direction. It is very much in this reactive spirit that Melbourne's planning agencies still operate today.

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