

# UC Berkeley

## IURD Monograph Series

### Title

Metropolitan Strategy in Sydney: Employment Distribution and Policy Issues

### Permalink

<https://escholarship.org/uc/item/72r9s7dx>

### Authors

Blakely, Edward J  
Fagan, Robert H

### Publication Date

1988-04-01

Metropolitan Strategy in Sydney:  
Employment Distribution and Policy Issues

Edward J. Blakely  
Professor and Chair  
Department of City and Regional Planning  
University of California at Berkeley

and

Robert H. Fagan  
Senior Lecturer  
School of Earth Sciences  
Macquarie University

Monograph 36

April 1988

Institute of Urban and Regional Development  
University of California at Berkeley

## ACKNOWLEDGEMENTS

This monograph is the result of work commissioned by the Department of Environment and Planning, New South Wales, Australia. The monograph would not have been possible without the assistance and cooperation of many staff members of the Department. However, we do not wish to imply by the foregoing acknowledgment or by those below that this report is endorsed by or in any way reflects the views of the government of New South Wales or the Department of Environment and Planning.

We are especially indebted to Glen Searle of the Department of Environment and Planning for his assistance with both data and projections for Sydney's populations and employment. He was in every sense a collaborator in this effort. We also wish to acknowledge the extensive support of David Welmoth and John Roseth in the Department for their assistance and cooperation.

We are indebted to both the Australian Institute of Urban Studies and the University of California Institute of Urban and Regional Development for their support in the preparation of the manuscript.

Finally, we wish to acknowledge the strong professional assistance of Laurie Glass of the Institute of Urban and Regional Development through the lengthy process required for publication.

**METROPOLITAN STRATEGY:**  
**EMPLOYMENT DISTRIBUTION AND POLICY ISSUES**

**TABLE OF CONTENTS**

1. **INTRODUCTION**
  
2. **REVIEW OF MAJOR EMPLOYMENT ISSUES**
  - 2.1 Geography of Unemployment in Metropolitan Sydney
  - 2.2 The Future of the Manufacturing Sector
  - 2.3 Trends in Tertiary Services, Office Work, and the Information Sector:  
Employment Levels and Geography
  - 2.4 The Advanced Producer Services: Panacea or Pipe-Dream?
  - 2.5 The Future Role of Sydney
  - 2.6 New Technology: Centralizing or Decentralizing?
  - 2.7 Summary of Employment Issues for Metropolitan Sydney
  
3. **REVIEW OF TRENDS IN EMPLOYMENT CHANGE AND METROPOLITAN DISTRIBUTION**
  
4. **EMPLOYMENT OBJECTIVES AND POLICIES**
  
5. **CONCLUSION**
  
6. **REFERENCES**

**METROPOLITAN STRATEGY:**  
**EMPLOYMENT DISTRIBUTION AND POLICY ISSUES**

**1. INTRODUCTION**

This report reviews employment issues and employment forecasts for the Sydney metropolitan region over the next 25 years as a basis for long-term metropolitan planning strategy. In particular, it examines the major forces likely to influence the future size and intra-urban geography of the major sectors of urban economic activity. A brief examination of the intra-urban geography of unemployment in Sydney is presented to place the question of future employment issues in context. Then, five key issues are examined for metropolitan Sydney through the year 2011. These are (a) the future of the manufacturing sector, (b) trends in tertiary services and the growth of the "information economy," (c) the rise of an advanced producer services sector, (d) the future role of Sydney both in relation to the growing Asian Pacific region and the national and state economies, and (e) the impacts of new technologies on production and services.

A critical review is made of possible future employment structures for metropolitan Sydney and of scenarios for the intra-urban distribution of the work force as set out in the draft metropolitan strategy of the Department of Environment and Planning (DEP). Finally, the report considers the employment objectives of a metropolitan strategy, identifying policy areas and responsibilities of government. The report summarizes the strategic implications for state government policy on employment and future economic development.

## 2. REVIEW OF MAJOR EMPLOYMENT ISSUES

### 2.1 Geography of Unemployment in Metropolitan Sydney: Unequal Burdens, Unequal Opportunities

Unemployment is one of the major issues facing urban policymakers, and has been the subject of considerable research in Sydney since the late 1970s. Although academics and policymakers alike have been slow to place Australia's industrial crises in a global context, most now agree that a form of deindustrialization has taken place. The return of positive national economic growth in 1983-84 was accompanied by some overall improvement in the national employment situation, but urban unemployment rates that are very high by historical standards are still heavily concentrated among particular groups of people and in particular areas. As Stilwell (1980) put it, "...the issue of unemployment in Sydney is not a problem of the city but a problem in cities," and is a symptom of the global restructuring of economic activity since 1970.

A review of policy proposals designed to tackle urban unemployment, however, suggests that there is often only a loose connection between policies and the research findings on underlying causes of unemployment. There are at least three reasons for this disjunction. First, the research itself often focuses on a single dimension of unemployment. The work of Davis and Hermann (1979) focused on inadequate skills bases of the work force, especially in Sydney's western suburbs. Vipond (1984) and others, while recognizing skills as important, have identified distance from the CBD and information as being critical factors. Cole et al. (1984) demonstrated the importance of manufacturing and the uneven impact of deindustrialization on the same suburbs. Clearly, unemployment in Sydney is not a single disease but a multitude of diseases with similar outcomes. Unemployment,

underemployment, and lagging job growth form a set of related problems affecting different suburbs and groups of people in different ways.

Second, policy instruments for tackling urban unemployment are often not aligned with the major forces at work on restructuring the city. For example, the pressures on the state government for provision of housing and welfare services are treated separately in policy formulation from those forces reshaping the geography of employment. Third, attacking the problem of unemployment within the city requires intergovernmental coordination on a scale not yet achieved between federal, state, and local bureaucracies in Australia.

### **Explaining the Geography of Unemployment in Sydney**

The overall geography of unemployment in Sydney is well known, as is unemployment's role as a major cause of social disadvantage in the inner city and outer suburbs. As late as 1971 all Commonwealth Employment Services (CES) Districts in western Sydney shared the overall national condition of full employment. (The only exceptions were Mount Druitt and Katoomba, where rates were twice the city's average of 1 percent.) By 1978, with the annual metropolitan average rate at 6 percent and inner-city local government areas (LGAs) averaging 13 to 14 percent overall, Mount Druitt recorded 10.6 percent, and Blacktown, Fairfield, and Liverpool each recorded 8.5 percent. The disparity between different areas of the metropolis widened during the late 1970s, and youth unemployment began to dominate public discussion about the problems of western Sydney. In 1978, the annual average rate of unemployment in the 15- to 19-year age group was 30 percent in Mount Druitt, 26 percent in Liverpool and Windsor, and over 20 percent in Blacktown and Penrith. Elsewhere in the main urban areas of New South Wales, only Newcastle and Wollongong could match these levels of youth joblessness (Stilwell with Larcome 1980, p. 115).

In the 1981 census, unemployment of youth in western and southwestern fringes stood out from the rest of the city. High rates were concentrated in the LGAs of Blacktown, Fairfield, Liverpool, and Penrith (Matwijiw 1985). The Australian Bureau of Statistics estimates for September 1983 showed that western Sydney, as a whole, was still two percentage points above the (falling) national unemployment rate of 11.6 percent. Following the rapid job shedding in manufacturing in 1981-82, male unemployment in the western suburbs stood at 26 percent compared with the official female rate of 9.5 percent. Joblessness was concentrated among males over 45 years and among youth of both sexes. In June 1984, CES offices at Mount Druitt, St. Mary's, and Penrith all reported over 30 percent unemployment in the 15- to 19-year age group.

These unemployment rates must be seen in the context of rapid growth in the labor force of the outer suburban areas. The net addition to jobs in western Sydney between 1971 and 1981, for example, was 71,000 (MSJ Keys Young 1985), with most of the new jobs created in the early part of the decade. Even this high rate of job growth failed to meet the rising population in western Sydney suburbs. Cautious population projections suggest that the future growth of the labor force will require an additional 250,000 jobs for western Sydney residents between 1981 and 2001 simply to maintain an average annual unemployment rate at 10 percent (MSJ Keys Young 1985). Such an overall rate would probably still mask very high rates in areas such as Mount Druitt, Liverpool, and Penrith, as well as high levels of hidden unemployment (Horinek 1983; Stilwell with Larcombe 1980). These estimates indicate the enormity of the potential future job-creation problem in western and southwestern Sydney.



Three partial explanations of the intra-urban geography of unemployment are as follows:

#### **A. The Locational Explanation**

Vipond (1984) et al. have isolated distance from the CBD as a critical employment factor, especially for male youth (see Tables 1 and 2). In 1981, the outer ring of Sydney suburbs contained 50 percent of the metropolitan population and 48 percent of the work force, but a mere 29 percent of the total jobs.

The results...show clear spatial impacts on employment rates that can be isolated from other effects on unemployment such as skills, education and ethnic status of the workers. For all categories of workers there appear to be disadvantages in living further from the center of Sydney. (Vipond 1984, p. 384.)

More recent unemployment data provide support for this contention. Figures for March 1985 show that the outer suburbs of the city generally suffer higher numbers of persons unemployed and higher unemployment rates (Figure 1).

A number of factors reinforce this spatial pattern. First, physical location within the metropolitan area may not be as important as psychological or perceived distance from job opportunities. The work by Vipond and others shows a consistent pattern of disadvantage among outer suburban workers with respect to information about job opportunities in the inner (job-surplus) areas through the formal CES system or informal newspaper or word-of-mouth networks (Vipond 1982 CAER).

The social movement patterns of unemployed teenagers may not extend to areas where jobs are available and the costs of searching for work may be perceived as high. In addition, private bus services predominate west of Parramatta: they are generally more costly than those of the Public Transport Commission with poor networking. Cross-hauling within the western region is difficult except by private car, and those without access to motor vehicles -- including women with children and

Table 1

Male Intra-Urban Unemployment Gradient  
in Sydney -- 1976 and 1981

Equations for Male Unemployment

Independent Variables	Dependent Variables					
	Total Male Unemployment		Adult Male Unemployment		Teenage Male Unemployment	
	1976	1981	1976	1981	1976	1981
Constant	-2.875	-2.080	-3.223	-2.371	-0.365	0.264
Distance	0.009 (3.711)***	0.008 (4.025)***	0.009 (3.111)***	0.008 (4.110)***	0.010 (4.682)***	0.003 (1.113)
Youthfulness	3.667 (1.188)	3.724 (1.486)			6.409 (2.168)**	2.296 (0.714)
Migrants	0.946 (1.159)	0.533 (2.673)**	0.708 (0.808)	1.495 (2.792)***	1.201 (1.451)	0.688 (0.087)
Lack of Skills	2.012 (3.190)***	1.486 (3.683)***	2.588 (3.884)***	1.821 (5.490)***	0.526 (0.795)	1.173 (2.085)**
Immobility	-2.256 (4.146)***	-2.664 (6.918)***	-2.397 (4.362)***	-2.654 (7.880)***	-4.372 (3.187)***	-5.386 (4.227)***
Occupation Industry	0.450 (0.656)	0.293 (0.451)	0.641 (0.853)	0.445 (0.711)	0.520 (0.734)	0.170 (0.191)
R <sup>(2)</sup>	0.68	0.85	0.66	0.87	0.59	0.64
Degrees of Freedom	38	37	39	38	38	37

NOTES: Immobility was measured by Variable 11 in equations for total male unemployment and adult male unemployment, and was measured by Variable 4 in teenage male unemployment equations.

't' values in parentheses.

\* Significant at 0.10.

\*\* Significant at 0.05.

\*\*\* Significant at 0.01.

SOURCE: Vipond 1984

Table 2

Female Intra-Urban Unemployment Gradient  
in Sydney -- 1976 and 1981

Equations for Female Unemployment

Independent Variables	Dependent Variables					
	Total Female Unemployment		Adult Female Unemployment		Teenage Female Unemployment	
	1976	1981	1976	1981	1976	1981
Constant	-2.731	-1.141	-3.480	-1.400	-1.537	0.861
Distance	0.004 (2.721)***	0.006 (3.765)***	0.003 (1.813)*	0.005 (3.241)***	0.010 (3.345)***	0.007 (2.691)**
Youthfulness	6.938 (6.468)***	4.595 (4.086)***	-	-	6.667 (3.170)***	2.825 (1.590)
Migrants	1.702 (3.553)	1.474 (3.602)***	1.371 (2.343)	1.123 (2.849)***	1.489 (1.521)	1.640 (2.411)**
Lack of skills	0.539 (1.698)*	0.702 (3.207)***	1.468 (4.694)***	1.128 (6.550)***	0.714 (1.132)	0.588 (1.616)
Immobility	-1.381 (4.232)***	-1.720 (7.217)***	-0.846 (2.598)**	-1.642 (7.264)***	-2.202 (1.528)	-4.221 (4.074)***
Occupation Industry	-1.519 (3.718)***	-1.972 (3.741)***	-1.190 (2.345)**	-1.890 (3.633)***	-1.359 (1.530)	-1.618 (1.796)*
R <sup>(2)</sup>	0.86	0.90	0.67	0.88	0.74	0.79
Degrees of Freedom	38	37	39	38	38	37

NOTES: Immobility was measured by Variable 11 in equations for total female unemployment and adult female unemployment and was measured by Variable 4 in teenage female unemployment equations.

Logit transformation was applied to dependent variable.

t-values in parentheses.

\* Significant at 0.10.

\*\* Significant at 0.05.

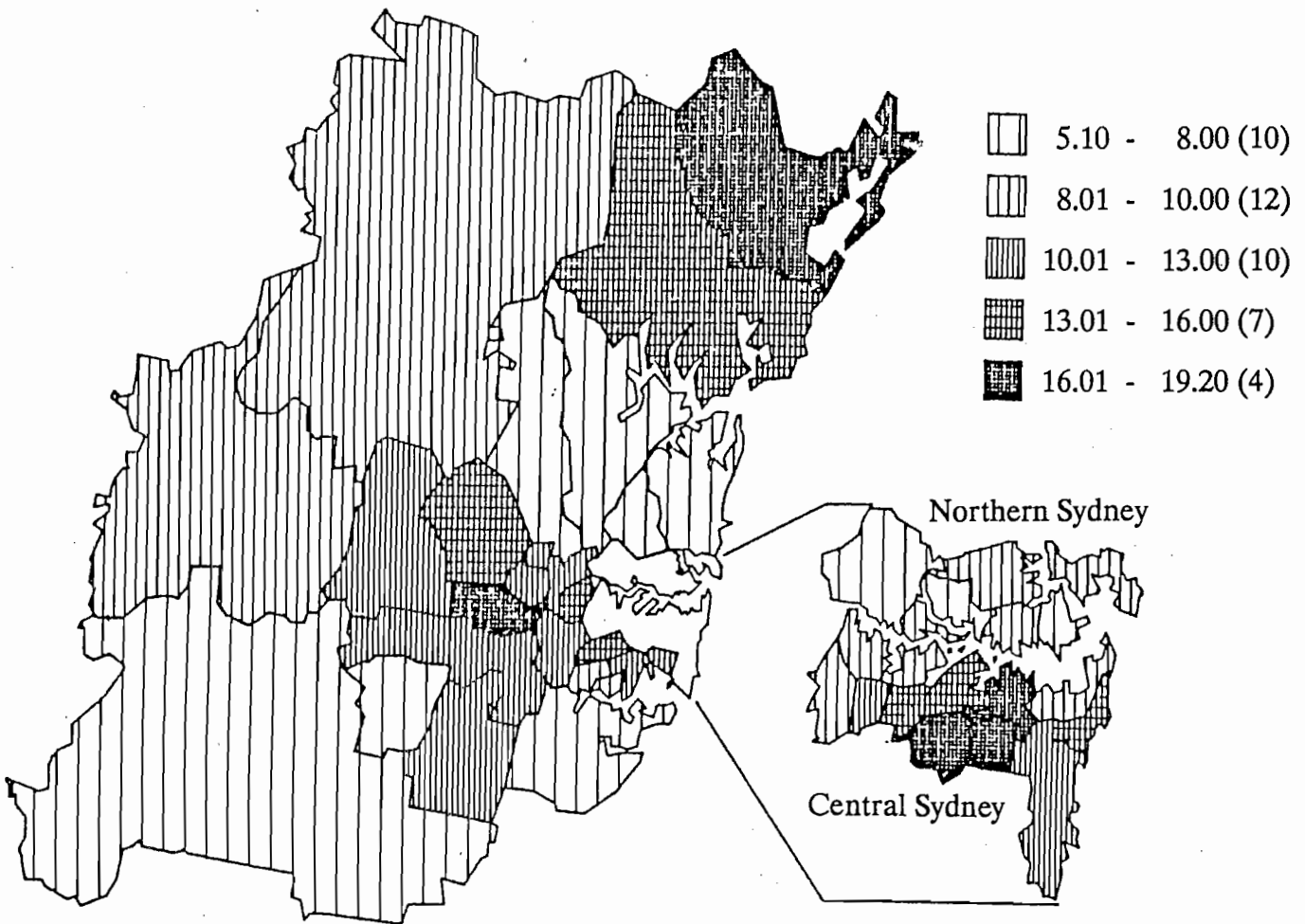
\*\*\* Significant at 0.01.

SOURCE: Vipond 1984

Figure 1

Estimated Unemployment, March 1985

LGAs of the Sydney Statistical Division



youth generally -- have been particularly disadvantaged. At a seminar organized by the Western Regional Organization of Councils (WSROC) in December 1985, evidence was given by representatives of the CES, the TAFE colleges, and community organization, of discrimination by employers in both manufacturing and service industries closer to the CBD against young job-seekers from certain outer suburbs of the west. This anecdotal evidence is supported by Stilwell with Larcombe (1980) and Cass (1984).

### **B. The Family/Community Explanation**

Research suggests that unemployment in Australia lays a disproportionate burden on households composed of single-parent families, or comprised of several persons unrelated by traditional social definitions. Such correlations have been found in Sydney. Bradbury et al. (1984), for example, show that there is a much greater proportion of what they call "irregular" household structures among the unemployed than among those working. Yet it is impossible to separate out those "irregular" households which have been formed as a result of unemployment, especially among young people. It would appear that several factors related to social status cause a clustering in certain inner city and outer suburbs of people most vulnerable to unemployment and underemployment.

In Sydney, the growth of outer fringe residential areas has outstripped both the decentralization of jobs and the provision of community infrastructure (although both of these have grown rapidly since 1970). The geography of private housing development in Sydney, the lack of private rental housing stock, rising home loan interest rates, and the rapidly widening deposit gap (Daly 1985) forced increasing numbers of lower income home-buyers to the fringes during the 1970s. The release of relatively low-cost land in the west and southwest by the NSW Land Commission has exerted additional influence.

Finally, public housing developments have been concentrated in the inner city and the outer suburbs of Fairfield, Blacktown and Liverpool. By 1985, western Sydney held 60 per cent of Sydney's Housing Commission dwellings and 45 percent of publicly owned rental housing (MSJ Keys Young 1985). These factors have all contributed to the concentration in both the inner city and the western suburbs of households which have borne the major social costs of industrial restructuring since 1970. With the single exception of Baulkham Hills, western Sydney is notable for the prevalence of levels of personal and household incomes below the metropolitan average. The geography of unemployment shows a clear correlation with personal income and socioeconomic status of the suburb -- they are two sides of one coin.

Bradbury et al. show a clear correlation between unemployment of parents and that of their teenage children. This reinforces the vulnerability of these young people to long-term unemployment or under-employment. Problems in the provision of social infrastructure to rapidly growing new residential areas make matters worse. Two examples will suffice; First, the availability of childcare in western Sydney is below the metropolitan average throughout the west (MSJ Keys Young 1985). This increases the relative isolation and geographical mobility of single parents who are concentrated in the main Housing Commission areas such as Mount Druitt (Burnley 1980, p. 248). Second, occupational mobility has not been encouraged by the dearth of post-school educational facilities in western Sydney, for job-retraining, technical education, and tertiary studies of all kinds.

A recent study (MSJ Keys Young 1985) found 3.8 tertiary education places per 100 persons in western Sydney compared with 21.0 places per 100 elsewhere in the metropolis. Rates of attendance in twelfth grade at school and at post-secondary courses of all kinds are low by metropolitan standards in all LGAs except Baulkham Hills. Higher retention rates would not only reduce the numbers of people seeking

work, but open more employment options and increase social skills. Bradbury et al. (1984) suggest that employers are using education levels as a means of screening job applicants, a view supported by comparable research in the United States. (Wilms 1974)

Unemployment problems of this nature can become intergenerational. The dynamics and psychology of poverty among the most vulnerable groups create long-term employability handicaps, including the following:

- a. Lower levels of educational attainment for young people;
- b. Families living in relatively lower cost or low-rent suburbs remote from job opportunities;
- c. Lack of work force contact through workplace experience of parents and reduced access to informal job-finding networks;
- d. Lack of personal resources helpful in seeking or obtaining jobs (for example, a car, experience and skills in job interviews, language difficulties); and
- e. Poor image of suburbs in certain parts of the city.

Hence, a policy successful in dispersing job opportunities to deficit areas may not increase employment actualities unless accompanied by policies which tackle the interrelated problems of job readiness close to their causes.

### **C. The Trapped Explanation**

Some members of the work force are trapped or isolated by changes in the labor market (both sectorally and geographically) that reduce their access to jobs. Some workers in the so-called blue collar occupations in Sydney's inner suburbs were effectively trapped by the movements of manufacturing to the middle ring of suburbs or to industrial estates on the fringe. Workers with particular industrial skills or those

lacking experience or training with new office technology can be similarly trapped by the rapidly changing employment market. Burnley and Walker (1982) found that underskilled older workers from the inner city were isolated from jobs and job-finding networks. This work force sought employment in the very kinds of jobs which were declining in absolute terms in the inner suburbs. A recent study commissioned by WSROC (1984) showed that the overwhelming majority of young job seekers sought manual, or low-skill service jobs, precisely those most vulnerable to reorganization and deindustrialization or technology impacts in such areas as manufacturing, transport, and wholesaling,

Many studies have reported that these workers seem reluctant or indifferent to pursuing education or retraining to improve their status in the labor force or averting the danger of future job loss. Such attitudes may be attributed directly to the cumulative socioeconomic factors noted above. Yet, in addition, training must be available, affordable, and perceived as helpful in improving job prospects, before the unemployed or lower skilled groups will opt for it.

This brief review of the geography of unemployment in Sydney suggests that the following factors are important in a study of employment issues for a future metropolitan strategy:

- a. There is a strong relationship between unemployment rates and distance from the so-called job surplus areas closer to the CBD;
- b. Unemployment is directly related to economic status of households; that is, people from lower income households are more likely to experience higher levels of joblessness wherever they live, so attention turns to the reasons why such people are concentrated in certain suburbs where they face limited choices in their range of social, educational, and economic opportunities;



- c. Unemployed persons in the outer suburban areas are likely to face multiple handicaps in their access to jobs, including a combination of physical, social, and economic factors;
- d. Too many unemployed workers seek jobs in sectors of the economy which are growing slowly, declining, or changing their relative location patterns; this choice may be related not only to lower education and aspiration levels, but also to lack of information among both job seekers and potential employers about the true state of the labor market;
- e. The socioeconomic and locational disadvantages of Sydney's outer suburbs will interact with continued high growth rate of the labor force;
- f. The future size of each sector of Sydney's economy and their intra-urban geography will interact with these patterns to produce future unemployment levels in various parts of the city.

## **2.2 The Future of the Manufacturing Sector**

Manufacturing, finance, and business services stand out in Sydney's industrial structure (Table 3). Sydney and Melbourne remain as Australia's two largest centers for industrial production, although their manufacturing sectors have been affected by different combinations of forces since 1971. In 1981, each city held about 28 percent of Australia's total manufacturing work force. Although there has been, historically, much duplication in Australian production structures, Sydney has developed relative specialization in the production of chemicals, metal fabrications, industrial machinery and equipment, printed and published materials, and processed foods. In 1981, manufacturing employed 23 percent of Sydney's work force compared with 19 percent for Australia as a whole, but this had fallen from over 30 percent in 1971.

Table 3

Employment Structure:  
Sydney Region and Australia, 1971 and 1981

<u>Industry Group</u>	<u>Percentage of Total Employment</u>			
	<u>Sydney</u>		<u>Australia</u>	
	<u>1971</u>	<u>1981</u>	<u>1971</u>	<u>1981</u>
Agriculture	0.8	0.7	7.7	6.5
Mining	0.4	0.6	1.5	1.5
Manufacturing	30.6	23.1	24.2	19.2
Utilities	1.9	2.1	1.8	2.2
Construction	5.9	5.2	8.2	6.9
Retail & Wholesale Trade	21.0	20.4	19.7	18.8
Transport	5.1	5.7	5.4	5.7
Communication	2.3	2.4	2.1	2.2
Finance & Business Services	10.1	13.0	7.2	9.1
Public Administration & Defense	5.5	5.5	5.6	6.1
Community Services	11.0	15.6	11.2	16.2
Personal Services, Recreation, & Tourism	5.4	5.7	5.3	5.7
	100.0	100.0	100.0	100.0

SOURCES: Based on ABS, 1971 Census of Population and Housing,  
and 1981 Census of Population and Housing.

The impacts of recession and deindustrialization since the mid-1970s have been felt severely in suburbs of both Sydney and Melbourne. National and global forces affecting most sectors of Australian manufacturing have an immediate impact within these cities. Absolute job shedding took place across all manufacturing sectors in Sydney, and the contribution of manufacturing to total employment fell faster in Sydney than in Australia as a whole between 1971 and 1981.

Yet the intra-urban geography of these changes was quite uneven (Table 4). Job shedding was concentrated in the inner city and inner southeastern industrial areas, although there were also major job losses in inner western areas reaching out along the Parramatta River. By contrast, manufacturing employment in this sector continued to grow throughout Sydney's outer metropolitan areas. Table 4 also indicates the geography of growth in the finance and business services; while employment grew everywhere, it was concentrated heavily in central Sydney and the northern suburbs. These growing intra-urban differences are of major significance for this report and will be examined throughout Section 2. Table 5 summarizes one important implication: the occupational structure of the work force. Blue collar jobs dominated both the inner city industrial areas, and the western and southwestern suburbs. By contrast, the professional, administrative, and even clerical occupations were underrepresented in the outer metropolitan areas and concentrated in the central business district and eastern suburbs.

Hence, the levels of output and spatial distribution of in Sydney's manufacturing sector will exert an important influence on future employment levels of the traditional blue collar labor force. Manufacturing jobs play a disproportionate role in the outer suburban areas because the rates of growth of the labor force are high and skill levels low. In addition, levels of manufacturing production have been crucial determinants of the demand for finance and business services for the city as a

Table 4  
Employment Change by Industry Group and Subregion,  
1971 to 1981

Industry Group	Subregion								
	Central Sydney	South Sydney/ Botany	Inner West	Eastern	Southern	Middle W & SW	Outer W & SW	Northern	Periphery
Agriculture	195	-115	29	17	-49	-157	8	-151	-41
Mining	-461	-29	37	3	-56	41	17	-35	2,433
Manufacturing	-12,153	-22,230	-18,840	-4,049	-3,338	-8,678	8,301	-908	2,898
Utilities	526	96	-246	-242	242	594	1,043	679	1,550
Construction	-3,206	-1,687	-1,228	-684	-283	-1,342	2,381	786	2,732
Retail & Wholesale Trade	-14,513	-3,049	-2,935	-363	713	4,791	11,004	13,488	5,067
Transport	-2,697	4,392	1,370	335	1,942	3,042	1,816	1,233	1,127
Communication	1,663	-841	565	198	9	395	985	593	427
Finance & Business Services	11,292	1,669	2,669	1,592	2,635	5,633	4,819	11,523	2,801
Public Administration & Defense	-3,328	563	893	512	1,167	2,253	564	1,679	1,333
Community Services	5,094	2,295	5,022	3,528	4,148	12,680	12,480	16,715	6,468
Personal Services, Recreation, & Tourism	1,194	-255	-21	-168	577	855	2,117	3,385	1,898
TOTAL	-16,294	-19,191	-12,685	673	7,707	20,107	45,535	48,987	28,693

SOURCES: Based on ABS, 1971 Census of Population and Housing, and 1981 Census of Population and Housing. Excludes employment where place of employment not stated.

Subregion definitions are as follows:

Central Sydney: Sydney, North Sydney.

South Sydney/Botany: South Sydney, Botany.

Inner West: Leichhardt, Marrickville.

Eastern: Randwick, Waverly, Woollahra.

Southern: Hurstville, Kogarah, Rockdale, Sutherland.

Middle West and South West: Ashfield, Auburn, Bankstown, Burwood, Canterbury, Concord, Drummoyne, Parramatta, Strathfield.

Outer West and South West: Blacktown, Camden, Campbelltown, Fairfield, Holroyd, Liverpool, Penrith.

Northern: Baulkham Hills, Hornsby, Hunters Hill, Ku-ring-gai, Lane Cove, Manly, Mosman, Ryde, Warringah, Willoughby.

Periphery: Blue Mountains, Gosford, Hawkesbury, Wollondilly, Wyong.

**Table 5**  
**Occupational Structure of Workforce by Sydney Subregion, 1981**  
 (percent)

Industry Group	Subregion								
	Central Sydney	South Sydney/ Botany	Inner West	Eastern	Southern	Middle W & SW	Outer W & SW	Northern	Periphery
Professional & Technical Administration, Executive, & Managerial	23.3	8.4	15.4	18.2	14.1	10.3	8.2	21.3	13.5
Clerical	7.2	2.2	3.6	7.0	6.1	3.4	2.7	10.2	4.3
Sales	22.7	16.7	19.1	23.2	24.0	20.9	18.2	23.5	16.1
	7.3	5.6	7.1	9.7	9.2	8.0	7.8	10.0	8.9
<b>TOTAL WHITE COLLAR</b>	<b>60.5</b>	<b>32.8</b>	<b>45.2</b>	<b>58.1</b>	<b>53.4</b>	<b>42.6</b>	<b>37.0</b>	<b>65.0</b>	<b>42.9</b>
Transport & Communication Workers	3.5	6.0	5.1	4.4	5.0	5.9	6.1	3.2	5.3
Craftsmen, Process Workers, & Laborers	13.9	40.1	31.8	18.2	28.4	37.1	40.0	18.5	29.2
Service, Sport, & Recreation Workers	10.8	10.8	9.7	10.6	7.3	7.8	7.3	7.0	8.6
Other Blue Collar Workers	1.7	1.1	0.7	1.7	0.9	1.1	3.8	2.0	7.6
<b>TOTAL BLUE COLLAR</b>	<b>29.8</b>	<b>57.9</b>	<b>47.3</b>	<b>34.8</b>	<b>41.7</b>	<b>51.9</b>	<b>57.0</b>	<b>30.7</b>	<b>50.7</b>
Other	9.6	9.2	7.5	7.1	4.9	5.5	6.0	4.3	6.4
<b>TOTAL ALL GROUPS</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

SOURCE: ABS, 1981 Census of Population and Housing.

whole. As a result, changes in the nature of work within manufacturing sectors has had an important bearing on the growth of white collar jobs, especially in the outer industrial suburbs.

The principal problems facing manufacturing in Sydney are really those of Australian manufacturing as a whole. It is crucial to recognize both internal and external causes of industrial restructuring in Australia, although it makes little sense to separate them arbitrarily. Pressures for reorganization in Australian manufacturing since 1970 have included problems associated with the size and fragmentation of the Australian market for most manufactured goods; a variety of cost problems dominated by lack of scale economies and exacerbated by dispersal of the production base; and a widening technological gap between Australia and other OECD countries, a situation reinforced by dependence on costly imported technology. Equally important pressures for reorganization are the impacts of new industrialization in the Asian Pacific region; severe pressures on Australia's most heavily-protected manufacturing sectors; and a range of impacts arising from the continued growth of minerals and energy exports as well as the flight of finance capital away from manufacturing towards technology-based export ventures. The global strategies of transnational corporations (TNCs) are of central importance in all of these pressures listed above.

During the 1970s the TNCs began a process of industrial reorganization in the world economy, arising from the effects of industrial growth in the core economies during the post-war boom. The effects included fierce competition for affluent markets that were becoming saturated in some commodities, and a variety of cost rises, including labor, fossil fuel energy, and environmental control. With profit rates falling, TNCs placed renewed emphasis on production costs in their global struggle for markets. A majority of total investment by TNCs remained concentrated in the

major western world markets, but the fastest growth of new investment in manufacturing after 1970 occurred in a highly selective group of peripheral European and Third World countries offering low wage rates for non-unionized labor, the participation of local capital, and a very significant degree of government support.

By the late 1970s, this change was already being called a "new international division of labor" (NIDL) (see Cohen 1981). The large firms exported manufactured goods or components from their subsidiaries in newly industrializing countries back to the major world markets for final assembly and sale. Standardized labor processes using new technologies made it easier for TNCs to relocate manufacturing in countries, many of them in the Asian Pacific region, where largely unskilled workers could be employed at low wage rates. The comparative advantage of these export platforms may be short-lived, partly because of the rapid pace of technological change and increasing automation of labor-intensive production, and partly because of growing protectionism in developed countries grappling with high levels of unemployment. Yet, production on a world scale of some commodities has led to the relative -- although highly selective -- dispersal of industrial production globally, and increasing centralization of control among the large corporations.

One result of the international division of labor is that the world economic system is now more complex and integrated than ever before. There are five principal manifestations of this for manufacturing cities like Sydney. First, most world trade is actually transfer of goods between branch plants of TNCs, and many large industrial establishments in Sydney are linked to both new suppliers and markets through corporate networks. Ultimate economic control has become more centralized in financial centers such as London, New York, and Tokyo, while industrial production has become more dispersed both within the largest manufacturing countries and internationally. Second, the new international division

of labor could not have emerged without a new global financial system (Daly 1984). This has led to a rapid growth of global banking and financial markets of huge scale and volatility.

Third, the internationalization of manufacturing and finance has created a diverse array of new producer services concentrated heavily in the major control centers. Fourth, new computer-based technologies have facilitated both the production networks and the rapid mobility of capital. Finance now moves very quickly within sectors as well as between cities. Fifth, the combination of low-cost labor with state-of-the-art technology and high productivity in the new export platforms has never been faced previously by industrial cities and groups of workers in the developed countries.

The implications for Australia in general -- and Sydney in particular -- are not yet fully understood. Asian industrialization has not been the sole cause of Australia's manufacturing problems. Indeed, any single factor explanation would be unsatisfactory. Yet three effects will continue to exert their influence during the next two decades. First, export opportunities are limited for a range of Australian manufactured goods. The manufacturing structure which developed during the long boom, built around its core of protected import-replacement industries, is not well suited for integration into the Asian Pacific industrial markets without major social and economic consequences. Second, Australia is one of the closest affluent markets for the newly industrializing countries, and there have been increased political pressures from both inside and outside Australia for reduction of tariff protection. The effects of such changes have had a major impact on Sydney's textile and clothing industries, but more recently on the production of motor vehicles and parts, and industrial and electrical machinery.



Third, there has been an acceleration of direct investment offshore by large Australian manufacturing firms. At least half of the total overseas direct investment by Australian companies has been in the developed capitalist countries rather than in the Third World. Australia is being affected by what Teulings (1984) calls a "double capital movement" towards both the industrial core and the newly industrializing periphery. Australian manufacturing is being squeezed from both sides of this movement; it lacks the scale economies and technological development available to the major OECD producers and is unable to compete with production from new export platforms which combine low wage structures and active suppression of unionization with high productivity.

Hence, it is dangerous to give preeminence to any one group of pressures for restructuring arising since the mid-1970s within Sydney's manufacturing sector, a point which is of vital importance in contemplating its future. There is no single dominant cause of decline, such as comparatively high wages paid to Australian manufacturing workers or the impacts of Asian industrialization. Combinations of causes vary in different kinds of production and for different industrial areas of the city. They are shaped by the numerous ways in which Sydney's urban economy is integrated into the global capitalist economy.

As yet, there has been little detailed study of the net impacts of industrial restructuring on different parts of Sydney, although it has become clear that people in both inner city areas and the metropolitan fringes have borne a disproportionate share of the costs. Most analysts have shown that job shedding in manufacturing had been greater in Sydney than in Melbourne during the recessions of the late 1970s and especially 1981-82. There is evidence (Vipond and Reed 1985) that recovery in some sectors has been more rapid in intermediate times, demonstrating that Sydney has the more volatile manufacturing economy.

A thorough analysis of these differences is beyond the scope of this report.

Four things are clear:

- a. Melbourne has a higher concentration of industries in the heavily protected, import-replacing sectors. While there have been job losses in these sectors, Sydney has a relative specialization in metal fabrications and producer-goods rather than consumer durables. Large-scale mining projects provided impetus to the growth of these sectors during the 1970s, but heavy engineering, industrial, and electrical machinery producers have been subject to sudden increases in imports (especially from the Asian Pacific region) and a fall in exports (Cole et al. 1984). These industries have been more volatile in the early 1980s, partly because they are more open to the industrial changes in Asia.
- b. Both the motor vehicle and appliance industries have extensively rationalized output and employment as part of their restructuring since the mid-1970s. Most corporate decisions have worked to the cumulative disadvantage of Sydney and -- in the case of car production -- to the advantage of Melbourne.
- c. As will be shown, Melbourne has a concentration of headquarters and corporate research and development (R&D) facilities for some of Australia's largest mining and manufacturing corporations. There is a tendency throughout industrialized countries for such regions to generate more positive spin-off from both rationalization and technological change. The rate of technological change in Sydney's manufacturing industries has been very patchy, with new investments in automated production alongside aging and obsolescent plant and equipment in several sectors.

Rich (1982) showed that productivity levels in Sydney manufacturing were lower than those for Melbourne in a majority of sectors.

- d. The costs of new industrial land and of industrial development are higher in Sydney than in Melbourne. A somewhat greater proportion of industrial activity has dispersed to suburban locations within Melbourne than in Sydney, according to Vipond and Reed (1985), notwithstanding the considerable suburbanization of manufacturing within Sydney since the mid-1960s.

This rather gloomy situation, however, has had sharply uneven impacts within Sydney. Cardew and Rich (1982) demonstrate the steady loss of manufacturing jobs during the 1970s in the inner-city areas and from a broad middle zone of suburban manufacturing. The outer suburbs and fringe areas, however, increased their share of both employment (Table 4) and value of manufacturing buildings. Between 1971 and 1981, total manufacturing employment located in inner-city industrial areas fell from 114,000 to about 70,000. South Sydney lost 30 percent of its manufacturing jobs during this decade, and there was a net loss of 22,230 jobs in South Sydney and Botany LGAs together. Manufacturing jobs in western Sydney as a whole grew from 78,300 to more than 84,000, but net growth was most rapid in the outer areas. Manufacturing employment in the west continued to grow not only in its relative share of total metropolitan jobs, but also in absolute terms against the national trend of decline.

There were several interrelated reasons for suburbanization of manufacturing jobs. The fringes gained establishments and employment from the relocation of industrial plants from other parts of the metropolis that sought lower cost industrial land and space for expansion. This phenomenon was uneven across sectors, with the food, beverages, and tobacco groups standing out, and it affected some LGAs more

than others. Moreover, many small firms sought to locate plants closer to the center of the market as the locus of residential expansion moved steadily westward. Finally, the increasing volume of new building activity, including both industrial and residential construction, created a strong growth in the market for wood products and metal fabrications, and an increase in both output and employment in wood products and metal fabrications. Industrial relocation and strong market growth were very important reasons for the expansion of manufacturing in western Sydney.

An additional factor is related to national circumstances. Western Sydney is an important production center for industrial machinery, mining equipment, and heavy electrical machinery. These industries received a significant impetus from the export-oriented minerals and energy developments during the 1970s, while significant export markets were opened up by some of the larger branch plants. The final factor was the continued growth in the petrochemical and motor vehicle industries clustered around the Parramatta River, although towards the middle of the decade, smaller-scale chemical production including pharmaceuticals spread into industrial estates further west.

This outer suburban industrial growth was uneven across the various sectors of manufacturing and was concentrated heavily in the early part of the decade. From 1977 to 1983, there was a fall of 5.4 percent in the total manufacturing employment in western Sydney, suggesting that deindustrialization had begun to offset some of the effects of relocation and market growth. During the same period, there was a fall of 11.6 percent in national manufacturing employment, so that Sydney's outer areas continued to increase their relative share of Australian manufacturing. The changes produced a net decline from 1977 to 1983 of about 4,800 industrial jobs in western Sydney as a whole, a region highly susceptible to long-term unemployment.

The precise net changes are much less important for the purposes of this report than are the processes underlying them. These have a strong influence not only on overall levels of employment, but also on the kinds of jobs available and the skills required. The JAM Study (Cole et al. 1985) of western Sydney revealed several interrelated factors which combined to produce its net job loss in manufacturing between 1977 and 1983.

First, employment growth resulting from the relocation of factories to new industrial sites had begun to slow down by the late 1970s. (Factory relocations from other cities or other parts of Sydney cannot, in any case, serve as a basis for long-term employment growth.) Much of the relocation into western Sydney involved a net loss of employment in other parts of the metropolitan area (especially in food processing). By the 1980s, rationalization and technological change had slowed further creation of regional employment resulting from the relocation of larger plants to outer areas.

Second, several large factories in the heavy engineering and electrical equipment sectors were unable to secure contracts for new projects after 1982 as the second resources boom stalled. Of greater long-term significance is the increased competition for engineering and metal fabrication contracts from overseas suppliers, often the Asian Pacific branch plants of transnational corporations established in western Sydney. Importing is often made attractive not simply by cost differences, but also by the availability of soft-financing arrangements and export incentive schemes from governments of the newly industrializing countries. In these circumstances, the spin-off to branch plants in Sydney from resource projects such as mines, power stations, and processing plants is curtailed. A form of de-skilling can accompany the resulting rationalization as the Sydney branch plant picks up routine maintenance and repair work rather than nonstandardized engineering and design.

Third, several branch plants in Sydney ceased local manufacture of electrical of industrial equipment and began importing from associated plants in the Asian Pacific region.

Fourth, several large plants in engineering and metal fabrication found it difficult to maintain export markets in the Asian Pacific region which had opened during the 1970s. Some plants in western Sydney were affected by export franchising arrangements with their transnational parent companies, making it impossible for them to compete for certain global product markets. Others claimed to have been squeezed out of the Asian Pacific market despite having the production capacity and skills base to participate in exporting.

Barriers to Sydney metal manufacturing firms seeking greater exports include the following:

- o Lack of government export incentives and promotion;
- o Export franchising arrangements with transnational parent companies for certain products in particular markets;
- o Lack of attention to the prospects of exporting or lack of up-to-date intelligence about markets;
- o Technological change in recent years skewed towards process technology rather than product innovation; and
- o Increased standardization of production (including rationalization of product lines) and reduction of one-time design work.

Such standardized products are precisely those now available in increasing quantities from low-cost, highly productive export platforms in the Asian Pacific region.

While market-related growth continues in the manufacturing of foodstuffs, wood products, certain metal fabrications, pharmaceuticals, and small-scale

engineering components, these gains can be offset by large-scale rationalization and plant closures, especially in those branch plants affected by changed national and global circumstances. Manufacturing plants in Sydney also suffer from the more general problems of Australian manufacturing, including lack of scale economies, a variety of cost rises, and a very uneven pattern of productivity rises through technological change.

The western Sydney (JAM) study showed a patchwork of modernization alongside deteriorating plants (Cole and Denyer 1985, p. 38). Since the late 1970s, there has been a sharp decline in new investment across the metals and engineering industries. Much of the technological change reported in larger branch plants involved process technology rather than product innovation, leading to standardization of production in many plants, reduction of purchases from a range of business services, and a fall both in total work force requirements and the demand for skilled workers. Lack of scale economies, limited regional R&D, and lack of international product mandate for exporting are often interrelated.

The geographical impacts of the industrial changes outlined above vary widely within the Sydney region depending on local industrial structure, the relative contributions made by large branch plants and small businesses, the network of links with the national and global economies, investment decisions and rationalization, and site factors such as the costs of industrial land and availability of labor to suit each firm's requirements. Table 6 illustrates the complexity with the example of western Sydney.

Although there was a net loss of employment overall, job shedding was concentrated in established manufacturing areas such as Auburn and Parramatta (see also Table 4). Smaller net loss was recorded further west in Holroyd and Liverpool LGAs. In the former, growth continued in food processing and wood products, and

Table 6

Western Sydney Manufacturing Employment Change  
1976-77 to 1982-83  
by Local Government Areas

<u>LGA</u>	<u>Change</u>	
	<u>Number</u>	<u>Percent</u>
Auburn	-4,715	-38.5
Parramatta	-3,050	-13.6
Holroyd	-593	-5.5
Liverpool	-334	-4.0
Penrith	172	2.0
Fairfield	920	11.4
Blacktown	1,931	17.8
Baulkham Hills	860	28.7

SOURCE: JAM Study (directory of firms); Census of Manufacturing Establishments, Australian Bureau of Statistics (annual).



employment remained stable in the basic metals sector. Significant losses occurred in large branch plants manufacturing boilers, metal containers, and industrial equipment. Similarly, Liverpool experienced continued growth in new industrial estates across a range of manufacturing sectors but sustained large job losses in older plants manufacturing transport equipment, heavy engineering products, and especially electrical machinery. LGAs in the outer west continued to experience employment growth in manufacturing. Net growth was strong in Blacktown, a regional production center for a wide range of foodstuffs, wood products, chemicals, industrial equipment and components. Small business growth has been strong in these outer areas but is offset to some extent by rationalization, closure, and technological change in the branch plant sector.

The role of small businesses in Sydney's future manufacturing sector is often highlighted (see, for example, MSJ Keys Young 1985, and Econsult 1985). In some sectors, notably food processing, metal fabrication, and engineering, the number of small firms has continued to grow strongly despite overall trends in national manufacturing output and employment. The JAM Study revealed considerable employment growth from small firms in some sectors, in contrast with job shedding in large branch plants. Yet once again the small business sector is much more complicated than is often understood. This is particularly important in evaluating the widespread enthusiasm for future policy strategies based on small manufacturing enterprise.

Research on small manufacturing firms has been carried out by both Commonwealth and state governments, commonly focussing on technological change and sources of finance. It seems clear that small firms in Sydney experience disadvantages compared with the large corporate sector in access to finance especially venture or risk capital (Econsult 1985). Businesses lacking property assets

have difficulty securing loans from most financial institutions. In addition, repayment schedules and difficulties in meeting regular high interest payments deny finance to a wide range of potentially high growth, well managed firms that could create future jobs in manufacturing.

However, much greater research is needed on the nature of small businesses involved in industrial production. There are four areas which are of major importance in assessing the future of manufacturing in Sydney, and levels of employment:

- a. Linkages with the large firm sector have changed in many sectors during the period of industrial restructuring since 1975. These include product franchising, supply and market agreements, and technology licensing.
- b. There has been a dramatic increase in subcontracting within Sydney manufacturing as a whole (TNC Workers Research 1985), although details are sparse. An unknown proportion of small firm growth in the metal trades subdivisions, for example, has resulted directly from restructuring in the large-firm sector. The formation of small firms has been encouraged to a small extent by cash settlements to workers involved in voluntary retirement schemes or retrenchments from large firms. But in addition, subcontractors can be used as a buffer between the corporate sector and the fluctuating national or global environment for industrial production. They can be part of a large firm's strategy to reduce overheads, new investment costs, and labor on-costs in the plants under industrial award wages and conditions. Overall costs can be reduced by fragmenting production by encouraging competition among small suppliers, which creates a volatile core-periphery relationship with large firms.

- c. Small manufacturing plants provide much-needed industrial jobs in particular parts of the city, but we have little hard evidence on the types of jobs, the proportion of casual or part-time work, and the extent to which some vulnerable workers become increasingly marginalized within the urban labor market as a result. In the metropolitan clothing industry, there has been a dramatic increase in subcontracting in both inner city and outer suburban locations, much of it in contravention of industrial regulations. Official statistics showing continuing decline in employment in clothing production now give little idea of the actual size of this sector within Sydney (TNC Workers' Research 1985).
- d. It is impossible from overall statistical information to separate the genuine "high flyer" small firms, much sought after in local industrial strategies, from the vulnerable subcontracting enterprises.

This review of industrial trends in Sydney since the mid-1970s demonstrates that forecasting employment levels in manufacturing for the year 2011 is hazardous. Manufacturing remains the largest sector shown in Table 3, but the analysis above suggests that aggregate statistics can hide more than they reveal. The overall picture of manufacturing decline, now so well known, is the net result of interacting and frequently contradictory forces. The sharply uneven impact of industrial restructuring both sectorally and spatially, with growth and decline often side-by-side, must be taken into account in assessments of aggregate trends and future employment projections. A great deal more needs to be investigated, such as the ways in which production is integrating into the global economy, the relations between the corporate sector (both Australian and foreign-owned) and small firms, and longer-term impacts of both technological change and financial restructuring. The report returns to this problem in Section 3.

### **2.3 Trends in Tertiary Services, Office Work, and the Information Sector: Employment Levels and Geography**

Employment in manufacturing had declined to less than 20 percent of the Australian work force by the 1980s as a result of net job shedding in all kinds of industrial production since 1974. By 1981 nearly seven Australians out of each ten at work provided services to people and other industries. In Sydney these activities employed 76 percent of the total work force. During the late 1960s, two sharply different kinds of service emerged in industrialized economies. Tertiary services involve building and construction; the transport, buying, and selling of goods; energy production and transfer; and a diverse range of over-the-counter services. Since 1947 their share of the total Australian work force has been remarkably stable at around 38 percent (Jones 1982). The spatial distribution of these services remains fairly closely tied to population distribution even within the metropolitan areas. (In Table 5, the subregional proportions of work forces in sales, transport, and service, sports, and recreation show limited variation across the city.)

The other group of services, for which the label "quaternary" has been accepted widely, is less tangible and involves creating, processing, and communicating information (see Langdale 1982, and Forester 1984). In addition to media and communication industries, quaternary services include administrative and clerical work, education and research, and specialized financial and business services. In Australia this sector (sometimes used as a surrogate for the office sector) has grown from comprising about 5 percent of the paid work force in the 1880s to about 10 percent by 1910, over 20 percent by the mid-1960s, and more than one-third by the mid-1980s.

Recent analyses of the service economy in advanced industrialized economies have often overlooked the major differences between services to consumers or the community at large and services to businesses, governments, and the corporate

economy. In Sydney, employment in construction declined during the 1970s in most parts of the metropolitan region. Further, there was little net job creation in retailing between 1971 and 1981 compared with its strong growth during the previous two decades. The sector's relative contribution to the metropolitan work force declined, and both automation and organizational changes will limit further employment growth. Major gains in retail sales employment in outer suburban areas were offset by losses in inner city and middle-ring suburbs.

There have been some important developments in wholesaling and significant job shedding overall because of automation and rationalization. Significant relocation has accompanied these changes. The locus of metropolitan wholesaling activity has shifted from the fringes of the CDB to two areas: (a) South Sydney, situated strategically between the two ports and the airport; and (b) the Silverwater-Auburn area much closer to the center of the market. In both cases, wholesaling has often occupied former manufacturing premises.

Most growth in tertiary services actually came from the community sector especially in education, health, and welfare services. This category recorded the largest job growth among all sectors throughout the Sydney metropolitan area between 1971 and 1981, but its growth rate slowed considerably in the early 1980s with curtailment of growth in government expenditures. There was some growth in employment arising from personal services, recreation, and tourism during the 1970s. Some increase in overall leisure time has been coupled, in some middle-class suburbs, with the growth of a relatively affluent retiree group and a rising proportion of two-income, childless households. This has increased the demand for a range of personal services in some parts of the city. Employment in the recreation industries has also increased, largely in line with population growth but again biased towards higher

income suburbs. Tourist-based employment has grown in and around the CBD, notably in the historic Rocks area around Sydney Cove.

Employment grew rapidly in public and private sector administration, finance, and business services. Strong growth in information occupations also took place because of the growing proportion of office-type jobs within the work forces of the extractive, manufacturing, and construction industries. This reflects both technological changes in production and the increasing complexity of large business organizations. By 1981 about 46 percent of Sydney's work force performed office-related occupations. Recent studies by the Australian Institute of Urban Studies on urban real estate investment show the continuing dominance of investment in office development approvals in 1984-85 (see Table 7), and Sydney continues to outstrip Melbourne in the value of new non-dwelling construction.

Between 1971 and 1981 the total number of jobs located within the Sydney CBD actually declined from 312,000 to 286,000. The losses were concentrated in manufacturing, wholesaling and retailing, and transport sectors. Yet growth continued in the business services and administration, so that by 1981 office employment was still heavily concentrated in the CBD (see Table 8). Nonetheless, the suburbanization of both office space and office jobs accelerated during the 1970s. Table 9 shows the relative decline in the share of total office space completions held by the CBD, and the rapid growth in suburbs within relatively close proximity to the inner city (notably North Sydney and the lower North Shore). Yet an important trend is the growing share of total new office space held by the outer suburban areas from an average of 3.2 percent (1971-75) to 9.8 percent (1980-84).

Several factors have interacted to bring about suburbanization of office employment (Alexander 1982; Department of Environment and Planning 1983; Bigsworth and Fitzsimmons 1983), as follows:

Table 7

Capital Cities: Activity Shares of 1984/85  
Non-Dwelling Approvals (Percent)

	<u>Sydney</u>	<u>Melbourne</u>	<u>Brisbane</u>	<u>Adelaide</u>	<u>Perth</u>	<u>Hobart</u>
Offices	40.0	35.1	36.3	29.4	27.4	26.7
Shops	13.3	14.5	20.4	13.8	3.3	8.9
Factories	12.4	11.6	9.0	5.5	3.7	1.7
Business Premises	10.2	7.6	8.7	8.0	5.1	3.1
Hotels	1.3	4.7	6.7	13.7	21.9	34.6
Other	22.8	26.5	18.9	29.6	38.6	25.0
TOTAL	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

Source: Australian Institute of Urban Studies.

Table 8

Office Employment in Selected Local Government Areas,  
Sydney, 1981

<u>LGA</u>	<u>Office Workers 1981</u>	
	<u>Number</u>	<u>Percent</u>
Sydney	195,277	30.64
North Sydney	37,127	5.83
Parramatta	30,349	4.76
Bankstown	22,288	3.50
Willoughby	21,328	3.35
Warringah	18,975	2.98
Ryde	17,820	2.80
Blacktown	14,719	2.31
Hornsby	12,694	1.99
Ku-ring-gai	11,299	1.77
Gosford	9,703	1.52
Baulkham Hills	8,397	1.32
Lane Cove	6,085	0.96
 SYDNEY STATISTICAL DIVISION TOTAL	 637,355	 100.00

SOURCE: Australian Bureau of Statistics, 1981 Census of Population and Housing, Journey to Work data.



Table 9

Share of Office Space Completions, Sydney, 1961-1984,  
by Local Government Area Zones<sup>a</sup>

<u>Zone</u>	<u>1961-65</u>	<u>1966-70</u>	<u>1971-75</u>	<u>1980-84</u>
Center	90.8	82.6	74.7	62.9
Inner	4.5	7.0	10.4	20.4
Middle	5.3	8.1	11.8	6.9
Fringe/Outer	1.6	2.3	3.2	9.8
TOTAL	100.0	100.0	100.0	100.0

SOURCES: Australian Bureau of Statistics, Building Activity Surveys (various); Australian Institute of Urban Studies, 1984.

<sup>a</sup> Prior to July 1983, the A.B.S. classified buildings according to their major use. Consequently, the building data shown here do not include office space in buildings other than those classified as office buildings. Because of the predominance of mixed-use buildings in suburban locations, this omission is likely to have a greater impact on figures for suburban locations than those for CBD locations.

- a. An increasing number of customers and employees have found the CBD remote from their places of business or residence. Office developments on the lower North Shore are more accessible to the residences of professionals and corporate managers. Greater per capita car ownership has led to some preference by office workers for locations where on-site car parking can be developed.
- b. The need for larger premises has been increased by the larger needs for floor space per worker in higher technology offices, and installing new electronic equipment from scratch is generally cheaper than refurbishment. High rents in the Sydney CBD have become a problem for large space users and, according to Jebb (1984, p. 153), it has become difficult to secure appropriate sites for large-scale development in the CBD.
- c. Technological change has reduced the need for face-to-face contact in certain office activities. In addition, some establishments have reduced costs by integrating warehousing with office development in new suburban business parks.
- d. Companies can impose their own personality on new suburban office buildings of which they are the major occupant, and this can be important in corporate image.
- e. Both state and Commonwealth governments have relocated some office activities to the suburbs, particularly to Parramatta, creating an important demonstration effect to private developers.

A more qualitative examination of office suburbanization shows that routine clerical functions and small offices have dominated dispersal patterns since 1970, although there are a small number of notable exceptions (such as the relocation of the IBM head office to West Pennant Hills). Top management and corporate

headquarters remain tied to prestigious addresses in the CBD or its extension in North Sydney, and this has tied a host of business services to these areas. Yet it is often very expensive to maintain a large clerical staff in an expensive CBD office building, and many corporate offices have become caught up in restructuring, cost-cutting, and rationalization, especially in the wake of mergers and takeovers.

Public sector transfer of offices out of the CBD has continued, although, according to Bigsworth and Fitzsimmons (1985), at a slower rate than was forecast during the mid-1970s. The reasons for this include budgetary restraint in the 1980s; opposition from governmental ministers and their senior bureaucrats and from public service unions; and an apparent lack of electoral excitement about suburbanization of the public sector. Yet, during the 1980s, both the Commonwealth and state governments have given major positive commitments to floor-space expansions and public service job growth in Parramatta.

Suburbanization of the office sector in Sydney has involved three kinds of location. First, major suburban commercial centers have attracted office investment commencing with Parramatta and Chatswood and extending to St. Leonards, Neutral Bay/Cremorne, Gordon, Epping, Bondi Junction, Burwood, and Hurstville. The dominance of the North Shore is apparent. Second, there are the more dispersed mixed-land-use zones; these are substantially office development located in industrial parks, often but not always combined with on-site warehousing or light manufacturing. Although the North Shore is dominant through business parks at North Ryde and French's Forest, the office employment now occurring in outer suburban areas is emerging on inner-city industrial sites. Third, there are some free-standing new office developments, often involving users of very large floor spaces seeking low-cost sites in the outer suburbs.

Despite this strong suburbanization, recent statistics prepared by the Department of Environment and Planning show that a very large imbalance remains within the metropolis between place of residence of the office work force and place of employment (Table 10); central and inner areas remain areas of surplus and are targets for large flows of office workers.

A majority of new jobs created in outer suburban areas of Sydney during the 1970s were in local services, especially in the transport sector, building and construction, retailing, and public sector community services. Yet manufacturing played a more important role than in other parts of the metropolis. At the 1981 Census, western Sydney's work force remained well above the metropolitan averages in its concentration of tradespeople and transport workers (Table 5). By contrast, the region had below-average proportions of professional, technical, administrative, and clerical workers in all LGAs except Baulkham Hills. The growth of the information economy, the continued investment in new office space, and the proliferation of advanced producer services has worked to the advantage of the CBD, North Sydney, and the suburbs of the lower North Shore. With the significant exception of Parramatta, the outer suburbs have participated to a limited extent in Sydney's growing information economy.

#### **2.4 The Advanced Producer Services: Panacea or Pipe Dream?**

The rise of the service economy in advanced industrialized economies is the critical future employment issue that accompanies the issue of the future of the manufacturing sector. Several analyses of future employment structures for Sydney have placed great stress on further growth of services to take up some or most of the labor which can no longer find employment in the production sectors (see, for example, Department of Environment and Planning 1985, p. 18). While there can be no doubt about the profound structural changes since 1970 and the crucial role of the

Table 10

Imbalance Between Workforce Residence and Place of Employment,  
by Occupation Group and Subregion, 1981

<u>Industry Group</u>	<u>Subregion</u>								
	<u>Central Sydney</u>	<u>South Sydney/ Botany</u>	<u>Inner West</u>	<u>Eastern</u>	<u>Southern</u>	<u>Middle W &amp; SW</u>	<u>Outer W &amp; SW</u>	<u>Northern</u>	<u>Periphery</u>
Professional & Technical Administration, Executive, & Managerial	-46,842	-3,881	6,631	10,367	12,386	-599	2,260	34,763	5,972
Clerical	-18,675	-3,854	-1,263	5,399	5,602	-3,421	999	21,301	1,736
Sales	-103,590	-10,974	8,334	18,450	25,993	12,025	24,863	41,117	7,692
	-15,899	-2,895	-117	5,504	6,291	-569	5,789	11,356	2,941
TOTAL WHITE COLLAR	-185,006	-21,604	13,585	39,720	50,272	7,436	33,911	108,537	18,341
Transport & Communica- tion Workers	-8,857	-5,674	736	3,209	5,224	4,114	9,617	4,580	2,501
Craftsmen, Process Workers, & Laborers	-31,898	-24,181	849	12,506	21,129	487	52,168	15,769	11,723
Service, Sport, & Recreation Workers	-15,971	-2,298	4,129	4,871	4,885	4,388	8,138	5,797	2,570
Other Blue Collar Workers	-1,534	-36	293	864	817	1,115	3,017	2,166	235
TOTAL BLUE COLLAR	-58,260	-32,189	6,007	21,450	32,055	10,104	72,940	28,312	17,029
TOTAL ALL GROUPS <sup>a</sup>	-243,266	-53,793	19,592	61,170	82,327	17,540	106,851	136,849	35,370

SOURCE: ABS, 1981 Census of Population and Housing.

<sup>a</sup> Excludes workforce where residence or place of employment was unstated.

information economy in Sydney, there has been no smooth transition to a post-industrial economy during the economic crises and industrial downturns of this period. Focussing merely on the changing contributions of the broad sectors diverts attention away from the underlying changes in the social, economic, and political organization of the capitalist countries. During the last decade, resources have shifted rapidly back and forth within and between the sectors rather than steadily away from primary towards quaternary sectors.

Processes underlying the rise of the services economy remain widely misunderstood, especially the linkages between services growth and the agribusiness, mining, and manufacturing sectors. Forecasts of future employment structure need to be based on careful examination of reasons for the growth of particular kinds of service activity. Subsection 2.3 has identified public and private sector administration, finance, and business services as accounting for much of the net growth in service employment in Sydney since the early 1970s. Noyelle (1983) refers to the business and finance segment as advanced producer services which include a vast array of computer-related activities, financial transaction, information processing and communication, accounting and legal services, and consultancy.

When the labor-intensive community services (health, education, and welfare) are added, the vast proportion of service occupations and industry growth is encompassed. These community services are largely provided in the nonprofit, non-market sectors pushed along or retarded by the pattern of government expenditures. All of these services are still labor-intensive despite productivity changes, and are capable of growing in employment terms equal to or faster than the growth of output. It is most important to note, however, that in economies like the United States, United Kingdom, and Australia, market-based consumer and personal services have not kept pace either in jobs or output, although both have continued to grow.

The restructuring of manufacturing to restore profitability has been made possible by the introduction of new technologies and the emergence of advanced producer services. These new services have not grown independently of industrial production but as part of its transformation into new and increasingly global networks. The two-way flow between manufacturing and services, as Cohen and Zysman show in *Manufacturing Matters*, remains the crucial issue in deciding the future size of the quaternary work force (Cohen and Zysman, 1987).

The advanced producer services complement production, management, and planning, and facilitate greater control of finance and the labor process. Their growth has been pushed along by the new international division of labor, new computer-based technologies of production and information transfer, diversity and rapid growth of the state's functions within the production system, and corporate reorganization strategies. A high proportion of the new services have been embodied in new production methods or products, and bear something of a chicken-and-egg relationship to new technology (Noyelle 1983, p. 281).

In summary, five major processes of the new service sector growth are important to the future employment issues for metropolitan Sydney. These are as follows:

- a. Service growth relates strongly to restructuring in the productive sectors so that we could think of much quaternary sector growth as the transformation of production. Gershuny (1983, p. 65) claims that up to half of British growth in service occupations between 1960 and 1980 resulted from shifts in types of job within sectors rather than from shifts of resources between sectors as implied in the simple sector graphs of structural change.

- b. While technological change has always been a major factor in structural change, the increasing convergence between communications and computers has revolutionized many aspects of both production and information transfer.
- c. Restructuring of the corporate sector, the application of new technologies, and the increased mobility of capital have blurred significantly the practical distinctions between agriculture, manufacturing, producer services and information activity. The traditional three- or four-sector models now tell us a decreasing amount about real changes in the labor force.
- d. Impacts of the restructuring have been most uneven within particular economic activities, between regions, and between groups of people. Cohen (1981) and Noyelle (1983) show that urban centralization is still the dominant feature of the advanced producer services. Obviously the capital cities dominate this sector in Australia. These services are also concentrated within cities like Sydney, and are tied to the areas identified broadly in Subsection 2.3 as major office locations, in particular the CBD, North Sydney, and the lower North Shore.
- e. For the foreseeable future, advanced producer services will continue to contribute net job creation to urban areas in which they are concentrated. Yet such cities will become influenced increasingly by global production and finance systems mediated by transnational corporations, fluctuations or downturns in state expenditure on services to business and the community, and any decline of manufacturing production and/or its ability to retain and develop new product or regional markets.



There is a paradox. The producer sector and the growing complexity of government's role within it have created much of the real growth in advanced services. Yet regions, cities, and suburban areas dominated by production itself (agricultural, extractive, manufacturing) have borne most of the costs of this restructuring while as yet receiving few of the benefits in income or employment.

## **2.5 The Future Role of Sydney**

In common with other recent analyses, the Metropolitan Strategy Plan (DEP 1988) places great emphasis on the growth of producer services employment arising from Sydney's growing role as Australia's gateway city with increasing orientation to the Asian Pacific region. This section of the report argues that an assessment of these future employment possibilities must be based on a careful examination of the reasons for this growth and for the changing roles of Sydney and Melbourne, which are commonly seen as cities competing vigorously for commercial leadership. Once again, this assessment is hampered by lack of hard data. Work on the complex jigsaw of urban impacts from restructuring in the Asian Pacific region is only just beginning (Daly 1985).

It is clear that Sydney has become Australia's leading financial center since the mid-1970s, with significantly more banks (especially merchant banks), overseas banks' offices, and major finance and insurance companies than Melbourne (Table 11). The state government is promoting Sydney's international status. Sydney's airport is Australia's busiest, especially for international flights, accounting for 39 percent of national air traffic movements in 1981.

Edgington and O'Conner (1984) confirm the greater growth of Sydney in the growth of jobs since 1971, compared with Melbourne. While Sydney lost 17 percent of its manufacturing jobs between 1971 and 1981 (compared with 10 percent for

Table 11  
Head Office Location of  
Major Financial Institutions  
in Australia

<u>Type of Institution</u>	<u>Sydney</u>	<u>Sydney/ Melbourne</u>	<u>Melbourne</u>	<u>Other</u>
Reserve bank	1	-	-	-
Trading banks	3	2	1	2
Prescribed banks	2	-	-	1
Development banks	2	1	-	-
Representative offices of overseas banks	73	6	15	-
Merchant banks	41	14	-	1
Major finance companies	16	4	-	4
Authorized money market dealers	5	4	-	-
Ten largest life insurance companies	7	2	-	1
Twenty largest general insurance companies	13	7	-	-
Number of building societies	33	36	-	40
Number of credit unions	285	186	-	149
Australian companies:				
Top 200 by sales performance	99	68	-	33
Top 200 by profitability	100	70	-	30

SOURCE: Department of Industrial Development and Decentralisation (1984)  
Sydney: Financial Growth Centre for the Pacific, DIDD, Sydney.

Melbourne), finance and business services grew by 43 percent (compared with 33 percent in Melbourne). Sydney experienced much stronger growth in professional and technical jobs within the overall quaternary sector, and this growth was dominated by finance and advanced producer services.

The property boom in Sydney's CBD during the 1970s, in which international capital played an important role (Daly 1983), certainly gave Sydney some concrete advantage over Melbourne despite higher real estate prices. Yet a more thorough analysis is needed of the changing roles in both the Australian and Asian Pacific economies played by the two cities; such analysis might indicate that the two cities have been playing dissimilar roles (Daly 1985; Fagan 1986). Since the mid-1970s, Sydney's international linkages have moved away from the earlier dominance by Western Europe towards Japan and the Asian Pacific region.

The financing of new minerals and energy ventures oriented towards these markets played an important role in the development of Sydney's international financial role. First, although large Melbourne-based firms participated, Sydney-based financial institutions and merchant banks were more active in arranging financing packages for the large-scale projects. Second, the changing international links built upon Sydney's earlier orientation towards the Asian Pacific region, while Melbourne remained the key center for control of well-established domestic and foreign industrial enterprises that had played the greater part in the earlier manufacturing and mining booms.

Daly (1984 and 1985) explains the major changes in the world financial system that not only underpin the rapid growth of the Asian Pacific region itself but also have created "...a life of [their] own, partially dissociated from the rest of the productive world" (1985, p. 25). Key factors in these new market forces are the restructuring strategies of large corporations and their financial requirements; the

rapid growth of the Euromarket, especially following the OPEC oil price rises of the 1970s; the growth of currency speculation in unregulated markets; the speed with which finance can be transferred with new technologies; and the sheer size and volatility of both the world financial market and the world debt.

The accelerating patterns of merger and takeover within the Australian economy since the early 1960s entered a new phase after the onset of recession in 1974-75. This increased markedly the spatial concentration of industrial and financial decision-making in both Sydney and Melbourne at the expense of other state capital cities. Important work by Taylor and Thrift (1980, 1981) showed that Melbourne was the leading center of corporate control during the manufacturing boom between 1950 and 1970, but its share of head offices in the 100 largest business organizations fell from 50 in 1953 to 38 in 1978, while Sydney had 52 head offices by 1978. Any list of the largest private sector organizations will be arbitrary to some extent. The use of publicly listed companies, employed by Taylor and Thrift and commonly the basis for overseas studies, is somewhat misleading for economies like Australia and Canada. First, some of the largest industrial organizations are unlisted subsidiaries of TNCs; and second, a number of large family-owned companies remain within the largest firms. All three categories of firm have been used to prepare Table 12.

Because of the continued importance of Melbourne as headquarters location for well established, non-listed firms, Sydney's actual lead over Melbourne among the 100 largest corporations is lower than that suggested by Taylor and Thrift or Edgington and O'Conner (1984). But the real importance of Table 12 lies in what it reveals about the different roles played by Australia's twin centers of corporate control. These are three principal factors:

- a. Sydney has become the leading center for smaller business organizations, with some 25 of the 50 largest indigenous firms compared to

Table 12

Australia's 100 Largest Business Organizations -- 1984<sup>a</sup>  
 (Total number of firms; foreign-controlled in parentheses)

<u>Sector</u>	<u>Sydney</u>	<u>Melbourne</u>	<u>Brisbane</u>	<u>Adelaide</u>	<u>Perth</u>	<u>Other</u>	<u>Total</u>
Minerals/Energy	8 (4)	11 (5)	2 (2)	1 (-)	-	1 (-)	23 (11)
Manufacturing	18 (10)	20 (11)	3 (-)	1 (1)	1 (-)	1 (-)	44 (23)
"Conglomerates" <sup>b</sup>	6 (-)	1 (-)	-	1 (-)	2 (-)	-	10 (-)
Finance & Insurance	2 (-)	4 (-)	-	-	-	-	6 (-)
Retailing	1 (-)	3 (1)	-	-	-	-	4 (1)
Media	2 (-)	1 (-)	-	1 (-)	-	-	4 (-)
Construction & Property Development	2 (-)	1 (-)	-	-	-	-	3 (-)
Transport	2 (-)	1 (-)	-	-	-	-	3 (-)
Trading Companies	3 (-)	-	-	-	-	-	3 (1)
<b>TOTALS</b>	<b>45 (15)</b>	<b>41 (17)</b>	<b>5 (2)</b>	<b>4 (1)</b>	<b>3 (-)</b>	<b>2 (1)</b>	<b>100 (36)</b>

SOURCE: Fagan 1986.

<sup>a</sup> Twin criteria were used to compile the largest 100 firms: (1) total shareholders' funds (an indication of capital structure and size); (2) total employment in Australian-controlled company or Australian subsidiaries of transnational corporation (an indication of major job-providing organization). Firms were ranked according to total shareholders' funds to a lower limit of \$A200 million. Around this limit, firms were included if they employed 1,000 persons or more. On this ranking, BHP Ltd. was the largest industrial organization in total funds, but with dramatic job losses after 1981, slipped to third-largest employer behind the retailers Coles and Woolworths.

<sup>b</sup> Subsidiaries operating substantially across the sectoral classifications.

Melbourne's 19. Nearly half of Sydney's firms have grown through takeover (Fagan 1986), and Table 12 shows the dominance of Sydney as headquarters for the largest conglomerates. Japanese trading, marketing, and finance companies have also preferred Sydney for their head offices (Edgington 1983, p. 12), and it is likely that smaller Asian corporations have also preferred Sydney an Australian base because of established trading and financial links.

- b. The major difference between cities is the presence in Melbourne of a tightly knit group of firms with production and financial links. The 36 TNCs among Australia's largest 100 organizations are concentrated in production sectors and still show an overall preference for Melbourne as head-office location. Of the 20 largest mining and manufacturing corporations in 1984, Sydney was the domicile of only six, while Melbourne's 11 included BHP Ltd., Elders IXL Ltd., CRA Ltd., Shell, and BP.
- c. Melbourne's large businesses represent the earlier periods of Australia's industrial development and the direct investment strategies of United States and British companies. These firms, while remaining as beacons of Australian corporate power (see Fagan 1984), have internalized much of their financial and advanced producer services within existing structures. By contrast, Sydney is affected more by the new global linkages, the new money flowing through financial institutions as loans and portfolio investment, and the rapid spin-off of small fast-growth companies to service them. If the analysis is extended to include the 200 largest business organizations, then Sydney's leading role of headquarters for medium-sized firms is even more apparent (see Table 11).

This analysis is very important in assessing the future growth of Sydney's advanced producer services role. Although employment will continue to grow in the finance and business service areas, it is unlikely that the dramatic changes of the period 1975-85 will be maintained into the 1990s (see Daly 1985). Because of the new entrenchment of the Asian Pacific financial link, Sydney will continue to develop this aspect at the expense of Melbourne. Beyond this point, analysis becomes speculative. It seems implausible even with sufficient government support that Sydney or Melbourne will become one of the largest Asian Pacific financial control centers.

Daly (1985) suggests several reasons. Clearly, despite the communications advances, Sydney remains remote from the intensive contact networks within the financial communities of Tokyo, Hong Kong, and Singapore. In addition, the time zone advantages are not important enough to give Sydney much competitive edge over alternative regional centers. Moreover, some inadequacies in the communications infrastructure and high Commonwealth taxation levels compared with other financial platforms in Asia could place a brake on future growth of the international service link. Prediction is hazardous and much depends on the future levels of financial activity in the Asian Pacific region itself. While a major regional market for advanced producer services will remain well past 2000, there are already signs of a major slowdown in the rate of industrial change within the region since 1984-85 (Far Eastern Economic Review, 1985). This could place a brake on the rate of growth of demand for internationally oriented business services based in Sydney, switching greater attention to the city's domestic service role.

The Australian market for advanced producer services will continue to grow, but may not be large enough to sustain the momentum of the last few years given the existence of two large corporate centers as revealed in Table 12. The rate of

industrial and financial restructuring in Australia, which has transformed Sydney's quaternary sector, will slow down. Attention then turns to the underlying forces pushing along the advanced producer services, as demonstrated in Subsection 2.4 -- in short, to the manufacturing sector, the rate of technological change and innovation within Australian production, and the expenditure decisions of governments themselves. Competition between the two cities will increase for these domestic services.

Patterns of internationalization among Australia's largest organizations will also be influential. Research on this subject remains in its infancy in Australia, but the relatively limited studies overseas (such as that of Teulings 1984) of actual corporate internationalization suggest that, while local manufacturing jobs can be squeezed by offshore investments in both the major markets and the export platforms, some offsetting employment increase can occur in corporate management and services in the country of domicile. The largest current Australian participants in this internationalization are headquartered in Melbourne. Research on the likely future impact of this internationalization of Australian firms has scarcely even begun. Finally, the role of state government policy will be crucial, and some indication is given by Edgington and O'Connor (1984, p. 108) when they claim that Melbourne (or rather the Victorian state government and its corporate sector) "...will be looking to reassert its role in the national economy."

## **2.6 New Technology: Centralizing or Decentralizing?**

This report sees technological change as inevitable. The information technologies and others based on microelectronics have already had a revolutionary impact within Sydney's urban economy, while the pervasiveness of technological change is transforming manufacturing and service activities throughout the Asian Pacific region. Yet the report also argues that there is nothing particularly inevitable about the ways in which new technology is applied and the uses to which it is put or



the extent of economic impacts of technological change on people in cities. These matters are determined by social, economic, and political processes. It is worth emphasizing this since it is often apparently overlooked in the literature on the so-called sunrise industries.

The relationship between technological change, economic growth, and employment is very complex, as the Myers Report (Australian Committee of Inquiry into Technological Change) rather ruefully concluded. Much depends on the specific mix of factors, including national and local economic circumstances; levels of investment and availability of finance; levels of indigenous R&D; the quality and supply of trained personnel and managers; the ownership of technology and industrial resources; and degree of participation by workers, smaller enterprises, and governments in application and evaluation of technology. (See Johnston and Rutnam 1981, University of Wollongong 1984.)

Definitions of high technology vary and during the last few years the microelectronics revolution has often been given too much emphasis. Obviously the computer hardware and software industries form a core of product and process innovations in the 1980s. In addition, Searle (1985) lists the following technologies as potentially forming a base for sunrise industries in Australia: biotechnology, ceramics, robotics, fiber optics, and solar energy technology. In addition, less glamorous technological changes such as the use of new materials in manufacturing, building, and construction can have dramatic effects on economic growth and employment.

There are at least four reasons why Australia must pay increasing attention to new technologies. First, their development and application has both positive and negative effects on employment. While allowing jobless growth to occur in several manufacturing and service sectors, it can also generate new kinds of employment

rather than simply relocate existing jobs (Searle 1985). Second, it provides a crucial link with the advanced producer services reviewed in Subsection 2.4. The rationale for the adoption of new technologies by both manufacturing and service firms hinges on reducing costs in increasingly competitive environments, speed and efficiency in handling information, and increasing control over their labor requirements, costs, and availabilities. Third, new technologies can assist in the rejuvenation of production in some sectors. Finally, technological dependence is very costly for Australia.

The technological problems facing Australian manufacturing were outlined in Subsection 2.2. Dependence on imported technology has been expensive and has suppressed the level of local R&D. By 1975 Australia boasted one of the lowest levels of indigenous R&D among OECD countries. A remarkably small proportion was undertaken in the private sector, about three-fifths of which was carried out in branch plants of TNCs.

The impact of new technology on employment in cities like Sydney is the subject of wide disagreement. High-technology industry per se does not necessarily create large numbers of jobs; much depends on patterns of R&D investment, the creation or penetration of new markets, and the spin-off into advanced producer services. On the other hand, the potential loss of jobs in both manufacturing and lower-skill, lower-income services, is very great, "...which even the most optimistic observers do not deny" (University of Wollongong 1984, p. 47).

Table 13 summarizes forecasted effects of new information technologies on service sector employment over the next decade. In some sectors, direct job losses of up to 40 percent are predicted in the long run. Information technologies will increase the number and range of skilled intellectual tasks and decrease the number of unskilled tasks in the longer term, in both manufacturing and service sectors. For labor directly engaged in production, the new technologies have a de-skilling effect,

Table 13

Impact on Employment of Current Technological Changes; Some Forecasts:

<u>Country</u>	<u>Type of Technological Change</u>	<u>Sector or Occupation</u>	<u>Horizon</u>	<u>Forecast</u>
Australia	Computerization	Banking	1989	Job savings of 30-40%; job creation of 5-10%
France	Computerization	Banking	1988	Job savings of 30%
France	Automated check-sorting	Banking	1985	Potential abolition of 7,000 jobs
United Kingdom	Computerization	Banking	1985 1990	Slight increase in staff Stabilization of staff
France	Computerization	Insurance	1988	Job savings of 30%
United Kingdom	Computerization	Insurance	1984	With no growth in business, 15% retrenchments
United Kingdom	All changes under way	Banking, Insurance, & Finance	1983 1993 2003	Retrenchments in relation to 1978: 7.6% 31.4% 42.8%
Japan	POS terminals	Department Stores & Supermarkets	1990	<u>Rapid Dissemination</u> (100%): in relation to 1975, reduction in sales staff of 3,000 (1.2%), & potential loss of 39,000 sales jobs; increase in total workforce of 5,000 (1.5%) <u>Slower dissemination</u> (50%): increase in sales staff of 17,000 (6.5%) and potential loss of 19,000 sales jobs; increase in total workforce of 25,000 (7.9%)
United Kingdom	All changes under way	Commerce	1983 1993 2003	Retrenchments in relation to 1978: 41.1% 24.8% 39.8%
Japan	Office machines (copiers, microfilms, office computers, & word-processing machines)	All sectors	1985	Insignificant effects on staff
France	Word processing	All sectors	1985	Potential abolition of 82,000 secretarial jobs
France	Telecopy	Post, telecommunications, & all businesses	1985	Potential abolition of 11,000 jobs
United Kingdom	Word processing	Office work -- all sectors	1983	Potential abolition of 250,000 jobs
Western Europe	Office work automation	All sectors	1988	Office staff retrenchments of 20-25%; possible loss of jobs for 5 million typists

SOURCE: Johnston and Rutnam (1981, pp. 14-15), adopted from International Labour Organisation (1981).

with skilled and semi-skilled tasks being fragmented, specialized, and often reduced to unskilled tasks (Rothwell and Zegveld 1979, p. 168).

Debate now centers largely on the capacity of urban labor markets to experience new kinds of employment growth (new products and markets, new labor-intensive services, changed expenditure patterns) to absorb labor released by technological change. One argument is that future job losses in Australian manufacturing may be much greater if new technology is kept out of import-competitive sectors. Although the technologies are likely to produce jobless growth in a wide range of large-scale production, microelectronics and numerically controlled machines allow production to be undertaken economically in small runs or batches. This increases the viability of smaller manufacturing establishments and is already reflected within Sydney's metal trades industries by a sharp increase in subcontracting by large branch plants in the 1980s.

Employment growth prospects, in this argument, shift to the smaller, linked activities and into the producer services sector. Here, Australia's poor record in indigenous R&D, its technological dependence through transnational corporations, and the heavy concentration of employment in technology development and production in the northern hemisphere -- these all work systematically against Sydney's future prospects. Most studies on the geography of R&D show its high concentration in a relatively small number of cities and regions throughout the world. As a result, employment generation in R&D, with the spin-off to services, is very often located in sharply different areas from those experiencing its job-replacing applications.

In the business services themselves, evidence from the United States shows that the main occupations at risk from technological change have been stenographers, office machinists (other than computer operators), telephonists, and, to a lesser

extent, typists and routine clerical workers. In reality, there has been gradual amalgamation of lower-skill office work into the job description of positions such as secretary or stenographer. Table 14 examines areas of employment growth in quaternary services during the 1970s in the United States. All areas added clerical personnel, but the real growth was in professional and technical staff.

The table reflects two things: first, customer contact is still important in these producer services; and second, new multi-function jobs are being created and labeled "professional" or "technical," as new technology replaces routine employees in the lower skill categories. This process is partly designed to reduce labor costs, but also to increase speed, efficiency, and standardization, a major concern to the corporate sector during periods of economic crisis. Increasing control is possible over virtually every level of office function, while educational qualifications are used increasingly as entry gates irrespective of actual job content (Wilms 1983).

The impacts of technological change on jobs have been uneven both spatially and among groups of workers in Sydney. Although meritocratic entry to the professions has seen an increasing proportion of females entering higher-income employment in services, women are still concentrated heavily in clerical fields, forming nearly two-thirds of the work force in finance and business services. The number of openings being created in professional/technical jobs is falling behind the number of jobs currently held by women that are at risk due to technological change in retailing and office work. Women in the best position to capitalize on new opportunities are likely to live in suburbs within Sydney where these opportunities are being created. Conversely, women most at risk generally live further from job opportunities, have fewer transferable skills, and depend to a high degree on the CBD. Smith (1979) concluded that, compared to 25 percent of male workers, up to

Table 14

U.S. Employment by Major Occupation Groups: 1900 to 1995  
(percentage distribution)<sup>a</sup>

<u>Occupation Group</u>	<u>1900</u>	<u>1930</u>	<u>1960</u>	<u>1980</u>	<u>1995</u> <sup>b</sup>
Professional/Technical	4	7	11	16	17
Managerial	6	7	11	11	10
Clerical	3	9	15	19	19
Sales	5	6	6	6	7
Craft	11	13	13	13	12
Operative	13	16	18	14	12
Laborer	12	11	6	5	5
Service	9	10	12	13	16
Farm	37	21	8	3	2

SOURCES: U.S. Bureau of Census, Historical Statistics of the United States, Part 1 (Washington, D.C.: U.S. Government Printing Office, 1975), Table D182-232; U.S. Department of Labor, Employment and Training Report of the President (Washington, D.C.: U.S. Government Printing Office, 1979 and 1982), Tables A-16 and A-18; George T. Silvestri, John N. Likasiewicz, and Marcus E. Einstein, Occupational Employment Projections Through 1995, Monthly Labor Review 106, Nov. 1983, Table 1.

<sup>a</sup> Distributions for 1900 and 1930 based on experienced civilian labor force. Distributions for other years based on total employed persons.

<sup>b</sup> Data for 1995 based on moderate-trend projections.

half of the female work force in Australian cities risk job displacement through technological change.

In many ways, the locational implications of these technological changes are even more difficult to predict than the overall employment and social impacts, especially at the intra-urban level. Recent research has focused on the degree to which employment dispersal will be encouraged by technological change. Frequently, however, arguments about the effects of information technologies are simplistic. It cannot be argued that some technologies promote centralization while others cause dispersal. A variety of configurations is possible, for example, within the finance and business services. New technologies permit the elimination of areas of office work and their re-allocation to higher-level personnel in dispersed locations. The need for face-to-face contact can be reduced and routine office staff could be relocated to lower-cost suburban locations with some jobs eliminated in transit.

Offices built around the new information technologies require greater floor space per office worker than was standard during the 1970s. Since routine clerical activities are the most frequent application of microelectronics, this provides a major incentive for large new offices to be located away from the high rents of the Sydney CBD. Home workstations built around micro- or mini-computers tied to central data processing units permit dispersal to residential areas of both executive and clerical jobs.

Yet centralizing tendencies also exist with the same technology. Automation makes it possible to rationalize the hierarchy of branch operations and maintain central computerized control over those remaining. New, consolidated clerical staffs can provide regional or national services to a dispersed field staff. These dispersed offices can appear larger than their predecessors, but the total work force is smaller. The potential exists for this centralization to be coupled with the transfer offshore of

routine transactions (such as word processing, printing, and document work) to locations with low labor costs in Southeast Asian cities.

Higher-level decision-making remains centralized to maintain maximum contact potential with other corporate sector and government offices. Producer services provided to the corporate sector thus continue to cluster in the CBD and its North Shore extensions, with the principal examples of major decentralization being those large head offices (such as IBM Ltd.) which obtain a very high proportion of their producer services internally. Not all quaternary activities will necessarily disperse because microtechnologies encourage it. The potential impacts of at-home workstations are commonly exaggerated. Evidence from the United States (1984) shows that less than one-third of office employees would prefer to work at home using computer linkages. The majority saw benefits conferred by day-to-day socialization brought about by working with colleagues at central locations and the continuing importance of contact potential.

Hence, technological change facilitates decentralization rather than causes it. The same technologies can be used to increase centralized control, depending on corporate strategy. The essence of the analysis is to go beyond simple job transfers and examine the kinds of jobs centralized and dispersed and to which parts of the city. The CBD and inner North Shore locations still offer contact potential, specialized services, and access to higher status residential areas and to clerical work forces through the public transport system. Conversely, the new technologies promote the suburbanization of routine office jobs to reduce total costs and allow relocation closer to the center of the metropolitan population west of Parramatta.



## 2.7 Summary of Employment Issues for Metropolitan Sydney

This final subsection summarizes the principal employment issues as revealed in this study. These should shape the state government's metropolitan strategy and will determine the effectiveness of policy measures aimed at achieving metropolitan employment objectives.

The study highlights perhaps the major characteristic of economic restructuring in Australia since 1975: its uneven impacts on economic sectors, cities and regions, and groups of workers. This unevenness results from a complex overlay of new economic growth, rapid technological change, the reorganization of production and finance on a global scale, and significant deindustrialization. This combination has never been experienced before in Sydney, and this is one of the main reasons why the processes are as yet so poorly understood. This makes metropolitan forecasting unusually hazardous, with so little detailed empirical analysis available, inadequately developed conceptual frameworks, and a pervasive tendency to extrapolate urban impacts from broad national and global studies. Important examples of the unevenness include the following:

- o Rapid growth of Sydney's service employment alongside some of the highest rates of unemployment in manufacturing.
- o Cumulative disadvantage in the outer suburban areas in accessing an appropriate quantity and diversity of jobs, despite continuing suburbanization of economic activity.
- o Continued growth of manufacturing on suburban industrial estates in some sectors, alongside retrenchment and plant closure in some of the largest industrial plants.

- o Net job gains in manufacturing in some LGAs despite the overall picture of decline, only partly the result of job relocation from other parts of the city.
- o The brake placed by technological and organizational change on future growth of some service occupations within the growth sectors.
- o Uneven impacts on women, migrants, males over 45 retrenched from manufacturing, and young people in outer suburbs. People in the inner city and on the metropolitan fringes are bearing a disproportionate share of the social and economic costs of structural change.
- o Public expenditures on infrastructure to support growing mineral export activities and new industrial developments in some regions have made it more difficult for the state government to meet all the demands for new urban infrastructure, especially in the outer metropolitan areas.

Subsections 2.2 to 2.6 above show that this unevenness has caused increased occupational and spatial segmentation of the intra-urban labor market since the mid-1970s, with the impacts both of direct job loss and de-skilling borne disproportionately by certain groups of people concentrated in particular parts of the metropolitan area. Increasing polarization of the labor market has taken place between the more skilled, better paid jobs in manufacturing and services, and low-paid, low-security, or marginalized jobs in all sectors except public administration.

The following 13 employment issues arising from the analysis in Section 2 should affect the metropolitan strategy. The first five concern future levels of employment in the metropolitan region as a whole, while the remainder will affect their spatial distribution. These two aspects will remain intimately related.

- a. Technological change will be one of the major influences on future employment levels in all sectors of the urban economy. Because of the

nature of the new technologies and the pervasiveness of their application, the historical record is of limited use as a basis for predicting the future balance between destruction of jobs and creation of new employment.

- b. Despite the symptoms of deindustrialization, the Australian manufacturing sector in general and levels of industrial output and employment at the local level remain crucial to the economic health of most of the Sydney region. It is of long-run importance because of the crucial linkages between Australian manufacturing and advanced producer services in the 1980s and 1990s.
- c. Employment will continue to grow in both community services and producer services based on information, yet their growth in Sydney cannot be taken for granted as often implied in the traditional three- or four-sector model of structural change. These services are driven along by specific and identifiable forces, important among which are the levels of public sector expenditure (under threat from budgetary constraints and cutbacks) and a volatile set of global linkages.
- d. Advanced producer services will not grow simply from good policy intentions. Sydney's new international role will continue to be important, but the growth rate of new services related to this role may well have peaked for the foreseeable future. This fixes attention on regional and local demands for services generated by new technologies, manufacturing, and other activities.
- e. Other employment growth in services will be stimulated in Sydney by recreation and tourist industries, which remain labor-intensive. There was a slowdown in new hotel investment in Sydney after a boom in the later 1970s; by the early 1980s, a decline in hotel occupancy rates was

experienced in the CBD. Tourism can be overstressed as a generator of long-term employment in the city, although it could be of great importance in regional economies. The international market is variable, and much depends in the future on overseas travel patterns and currency exchange rates. Most concern, however, is directed at the kinds of jobs provided by the industry that lie in a narrow range and are often casual. Linkages to other economic activities are limited compared to other production sectors.

- f. Manufacturing is of most direct importance in the western region, but is also vital to the restructuring of inner and southeastern industrial areas. It is also important for the future of producer services in the outer areas. Regional activity, including manufacturing rejuvenation, would produce much greater spin-off to growing western commercial centers such as Parramatta.
- g. Suburbanization of the office sector will continue despite the clustering of large new investments in office space in the CBD. Present trends, however, would see continued clustering on the lower North Shore with dispersed growth on mixed industrial zones and in Parramatta.
- h. The number of jobs in the tertiary and quaternary sectors of the CBD actually declined somewhat between 1971 and 1981, although the rate of decline has not been fast enough to make much impact on the suburban areas of rapid work force growth, and dispersal has not favored the areas of greatest employment need. In fact, because of the nature of Sydney's public transport system, the present pattern of dispersal makes some of the new jobs even less accessible to outer suburbs.

- i. Suburbanization of office employment needs a more qualitative re-analysis, since relocation often emphasizes routine, lower-paid jobs often de-skilled or increasingly at risk from future technological change. These technologies can support both centralization and dispersal of economic activity, and both things are happening in metropolitan Sydney.
- j. Outer metropolitan areas remain at the greatest disadvantage in access to jobs, especially in the financial and business services. Those service jobs that are more localized are either at risk from technological change (for example, retailing) or public sector cutbacks (community services).
- k. There is little relief from the trends towards greater unemployment in the outer suburban areas, given the problems facing manufacturing, the limited access to alternative sectors, and the rapid growth of the labor force. Inner suburbs appear to be better placed, but there is a strong social differentiation in opportunities, and particular problems facing low-income workers retrenched from manufacturing and wholesaling.
- l. Jobs, transport, and community infrastructure are interrelated problems in the western and southwestern fringes. Educational resources seem especially inadequate given the employment situation faced by both young people and older workers.
- m. Attention turns to future changes in work itself, the diffusion of shorter working hours (probably on a days-per-fortnight basis rather than reduction of hours per day) and early retirement, and increased leisure time. These changes will certainly generate new market and nonmarket service demands within Sydney if accompanied by secure, remunerative employment rather than marginalized casual work. Increasing marginalization of regional or local labor forces will produce increased

demand for community welfare services rather than for new recreation and leisure facilities.

It is impossible to predict the future balance between new service growth in Sydney and future job replacement by both technological change and other corporate restructuring. In a recent study of the United Kingdom, Gershuny (1983) relies on the restructuring of work itself so that the informal or "self-service" economy in cities becomes both more attractive and productive enough to be a genuine substitute for part of formally earned income. Yet the equity issues surrounding these future scenarios are the most difficult. Gershuny's self-service sector is designed to be widely accessible as an individual or household choice and simply as a choice for highly skilled information workers at domestic workstations or as a means of survival for an increasingly marginalized low-income urban group.

### **3. REVIEW OF TRENDS IN EMPLOYMENT CHANGE AND METROPOLITAN DISTRIBUTION**

The urban impacts of industrial restructuring cannot be simply extrapolated from an analysis of overall processes of economic reorganization since 1970. Regional and local impacts are determined by the interaction of these processes with specifically local political, economic, and social structures (see also Massey 1984). Forecasting has become extremely difficult under such circumstances, and the problems are made worse by the openness of Sydney's urban economy to global financial and industrial restructuring; the current epidemic of merger and takeover within corporate Australia, which will lead to future rationalizations and new geographies of production; the variety of possible impacts from technological change, especially involving information technology; and uncertainties about future industrial, fiscal, monetary, technology, and social welfare policies of the Commonwealth and other state governments competing for development. As a result, this report does not engage in forecasting, but applies the employment issues identified in Section 2 to forecasts of urban employment structure and intra-urban distribution made in the draft Metropolitan Strategy of the Department of Environment and Planning.

#### **3.1 Forecasts of Future Employment Structure**

Table 15 shows forecasts made for overall employment structure in 2011. The estimates recognize, to some extent, the difficulties of forecasting urban employment structure given the issues identified in this report. Table 15 gives three estimates for the relative contribution of manufacturing. The low-manufacturing proportion assumes stagnation of both domestic and world markets 25 years hence (the length of time over which the post-1950 boom produced much of Australia's current manufacturing structure and geography). Lack of growth in the domestic market,

Table 15

Employment Structure of Sydney Region,  
1981 and 2011

<u>Industry Group</u>	<u>1981</u>	<u>Percentage of total employment</u>		
		<u>Manufacturing's share,</u> <u>2011 (forecast)</u>		
		<u>High</u>	<u>Medium</u>	<u>Low</u>
Agriculture, mining	1.3	1.0	1.0	1.0
Manufacturing	23.1	15.0	12.5	10.0
Utilities	2.1	2.0	2.0	2.0
Construction	5.2	4.5	4.0	3.5
Retail, Wholesale	20.4	16.0	17.0	18.0
Transport	5.7	6.5	6.5	6.5
Communication	2.4	2.0	2.0	2.0
Finance, business services	13.0	19.0	18.5	18.0
Public administration, defense	5.5	6.0	6.5	7.0
Community services	15.6	17.0	19.0	21.0
Personal services, recreation, tourism	5.7	11.0	11.0	11.0
TOTAL	100.0	100.0	100.0	100.0

Sources: 1981 -- ABS Census of Population and Housing;  
2011 -- DEP, 1985



inability to achieve significant exports, and increased penetration of the domestic market by imports ensure no employment growth to offset replacement of jobs by new technology and rationalization (Subsection 2.2).

Yet for the larger metropolitan population of 4.5 million in 2011, on which all the forecasts are based, 10 percent seems an unreasonably low floor for the contribution of manufacturing to urban employment in one of Australia's two largest manufacturing regions (Table 16). Subsection 2.2 revealed the importance of market growth for manufacturing change in Sydney since 1970, especially important for Sydney's suburbanization. Market growth can be expected to sustain future local development of food processing; building and architectural materials; smaller-scale metal fabrication and engineering; paper and packaging; and chemicals and pharmaceuticals.

This worst-case scenario in Table 15 assumes a continuation of major rationalization and retrenchment levels over the next two decades, especially in the branch plants of inner and outer manufacturing zones. It involves limited rejuvenation and technological development of Australian manufacturing, and no real success in gaining spin-off effects from resource development projects, raw material and energy advantages, and diverse market growth in the Asian Pacific region. This would be encouraged by the absence of effective industrial policies by federal and state governments.

The scenario would involve major problems for Sydney's economy by 2011: first, because of the unevenness of the social and spatial impacts of continued deindustrialization; and second, because manufacturing development is an essential part of growth in the services economy and of service employment (Subsection 2.4). Depending on the precise balance of underlying process, the 10 percent contribution for manufacturing could spell major problems for sectors which, in Table 15, are

Table 16

Employment in Major Commercial Centers in Sydney Region, 1981,  
and at 4.5 Million Population

<u>Center</u>	<u>EMPLOYMENT</u>		
	<u>1981</u>	<u>Forecast at 4.5 Million Population</u>	
		<u>Strong Planning Intervention</u>	<u>Low Planning Intervention<sup>a</sup></u>
Sydney CBD	188,919	220,000	150,000
North Sydney	28,750	40,000	40,000
St. Leonards'	22,983	20,000 <sup>b</sup>	20,000 <sup>b</sup>
Chatswood	9,363	20,000	20,000
Pymble/Gordon	4,256	5,500	7,000
Hornsby	9,637	15,000	10,000
Neutral Bay/Cremorne	5,397	4,000	8,000
Manly	4,218	6,000	6,000
Dee Why/Brookvale	5,088	10,000	6,000
Epping/Eastwood	4,024	5,000	5,000
Bondi Junction	6,095	10,000	7,500
Hurstville	6,978	10,000	7,000
Sutherland	5,524	10,000 <sup>b</sup>	1,500 <sup>b</sup>
Miranda	5,681	5,000	6,000
Burwood	7,355	10,000	7,500
Bankstown	9,727	15,000	10,000
Parramatta	20,360	60,000	35,000
Blacktown	10,592	18,000	13,000
Mt. Druitt	1,746	5,000	3,000
Penrith	3,703	20,000	11,000
NW Sector Center	-	8,000	2,500
Liverpool	10,904	20,000	12,000
Campbelltown	4,729	30,000	11,000
Bringelly	-	12,000	2,500
Gosford	5,233	10,000	6,500

SOURCE: For 1981 data, State Transport Study Group Travel Survey.  
Figures exclude students working part-time.

<sup>a</sup> Assumes low-density population scenario.

<sup>b</sup> Forecast based on narrower center employment definition than 1981 figures, which include industrial employment in same traffic zone but outside center.

expected to make up the difference. The low-manufacturing scenario would be associated with high long-term unemployment levels in Sydney, forecasted to be as high as 12 percent of the future labor force. Yet the key issue in these aggregate forecasts is their uneven impact in practice: the costs would be borne principally by the vulnerable groups of people concentrated in inner-city areas (social disadvantage) and outer suburbs (severe locational disadvantage).

The medium estimates in Table 15 are somewhat conservatively figured as forecast for 2011, given the great uncertainties. Growth of the urban market, plus some spin-off from future Asian Pacific developments and product innovation, would provide the impetus for the 12.5 percent level. Continued introduction of new process technologies in manufacturing could cause a reduction of up to 50 percent in employment contribution if there is no growth in markets or products.

The high-manufacturing scenario should be the active goal for the metropolitan employment strategy. It would require strong rejuvenation in some sectors of Australian manufacturing, given the likelihood of decreasing employment opportunities in many sectors because of technological change, and strong commitment to the manufacturing sector with policies at all three tiers of government. The development of new products and markets are of importance here, two critical aspects of which are (1) achieving a fair share of the domestic market for local manufacturers of higher-technology product, and (2) future exports to the Asian Pacific region.

These directions for manufacturing would ensure continued growth in demand for advanced producer services, and some likelihood of new service employment being created in the areas where future labor-force growth would be greatest. Because of the technological and structural changes analyzed in Section 2, an increasing proportion of employment in the manufacturing sector in this scenario

would be service jobs. This serves as a reminder that the maintenance of employment levels in the manufacturing sector is not incompatible with continued growth in the overall proportion of white collar occupations in the work force. As Gershuny (1983) points out, this is a source of continuing confusion for some advocates of the post-industrial economy.

A contribution of 15 percent by 2011 would still see a net absolute fall in manufacturing-sector jobs from 325,000 in 1981 to about 285,000. The creation of new jobs in manufacturing, especially in outer suburban areas, will be vital to offset the inevitable job shedding through structural and technological change; otherwise, absolute employment loss will be even greater during the next 25 years. Despite the projected direct employment reductions implicit in this scenario, the manufacturing sector should remain of central importance to the metropolitan strategy: first, to help avoid severe unemployment problems in the most vulnerable parts of the city; and second, for the economic health of other sectors in tertiary and quaternary services, and the continued growth of professional, technical, and service occupations.

Other forecasts in Table 15 are broadly consistent with the analysis in Section 2. Further changes in retailing and wholesaling might prove the projected 16 to 18 percent contribution to be rather optimistic. This would place even greater weight on other services in the business, community, and personal/recreational sectors, which provide the job growth in all columns of Table 15. These increases must be driven by public sector activity and the kinds of regional economic development discussed earlier in this report, including continued growth in recreation, tourism, and future services to households resulting from increased leisure time.

It is important to examine the increases forecast for these sectors in the light of the issues summarized in Subsection 2.7. First, the finance and business services

would need to employ an additional 200,000 persons net by 2011 to achieve the suggested 18 percent of urban work force (compared with the total number of such jobs in 1981 of about 130,000). Given the future role of Sydney, the nature of the growth areas in producer services, and the pace of technological change, this is a tall order for metropolitan strategy. Yet failure to achieve this target would place even greater reliance on non-marketed services in the public and community sectors, coupled with an exaggerated reliance on tourism/leisure, to prevent large increases in unemployment.

The growing demands of the enlarged metropolitan population will yield employment growth in community services; yet the increase from 15.6 percent (1981) to 21 percent would require major growth of employment in education, health care delivery, and welfare activities. In the absence of transformations in the nature of work, or the emergence of something like Gershuny's (1983) self-service economy in the twenty-first century, the level of public-sector expenditure will remain a crucial element in achieving such employment levels. Similarly, the virtual doubling in the contribution of personal services rests on some rather shaky assumptions about (1) future market-generated growth in demand for recreation and leisure services, themselves affected by overall levels of economic activity and their translation into leisure time and personal affluence; and (2) the future contribution of the tourist industry to job-growth, given uncertainties about international tourist flows.

The detailed research of Noyelle (1983) and others into the United States service economy leaves no room for complacency in a metropolitan strategy about international tourist flows.

Finally, the forecasts for community and personal services in Table 15 raise the question of the kinds of employment sought in a metropolitan strategy. Under present circumstances, such growth could further polarize the urban work force

between higher-skill, higher-income, and stable jobs, and low-skill casual or part-time employment, now growing in so many service sectors. Polarization (considered later in this section) would be more visible in terms of occupational structure, with increasing polarization between high-skill, technical jobs, and unskilled jobs in all sectors -- including manufacturing and producer services themselves.

### **3.2 Metropolitan Distribution of Future Employment**

The future geography of the work force will be shaped by these structural changes as they interact with the location of future residential populations and patterns of location decisions for future employment distribution. This is reflected in the numerous strategy drafts and technical papers on estimation methodology (DEP 1983 and 1985; Searle 1984). Underlying the estimates is a future metropolitan work force of between 1.8 and 1.9 million, depending on overall levels of economic activity and their effect on participation rates. The estimates would keep unemployment at a level of around 8.5 percent overall, which demonstrates the magnitude of the future job-creation task if current levels of unemployment are not to increase, let alone be reduced substantially.

Future population distribution provides the framework for work force estimation. Here, the operation of a range of other state government strategies (such as urban consolidation) include the following:

- o Increased participation rates, especially for women with children, in various parts of the city;
- o Altering the age structure of the population by earlier retirement ages;
- o Increasing the rates of retention of young people in secondary schools (which, at present, are lowest in areas of high vulnerability to joblessness),

and rates of attendance at vocational colleges and other tertiary institutions;

- o Increasing future levels of overseas immigration (including both nature and size of the flow);
- o Altering the future economic development within Sydney, by retarding the declining trends in manufacturing and facilitating the growth of advanced producer services;
- o Becoming more aware of trends in hidden unemployment and underemployment, and the further growth of the secondary economy (including subcontracting) and informal activity networks in the city;
- o Actively pursuing new special land use locations, notably the siting of a second airport for Sydney, likely to be in the western or southwestern regions.

These factors have been taken into consideration by the Department of Environment and Planning in their production of Table 17. The crucial role of policies lying outside the scope of the Department's metropolitan strategy is underlined by the estimation methodology. One example will suffice here. The Department of Environment and Planning (1983) and Searle (1984) apply constant retention rates for secondary-school age groups, and assume the overall trend of rising rates of participation in ages 11 and 12 years. While this is highly desirable for the future, these rates vary across the metropolitan area and, in some places, are among the lowest in OECD countries. This shows the importance of future educational strategies, especially for outer suburban areas, including education funding; development of programs relevant to future needs; the range of institutions involved (The TAFE system already educates more people in the 15- to 19-year age

Table 17

Percent Change in Employment  
in Selected Financial Service Industries  
by Selected Occupation: United States -- 1970-78

	<u>All</u> <u>Industries</u>	<u>Insurance</u> <u>Carriers</u>	<u>Banking</u>	<u>Securities</u>	<u>Business</u> <u>Services</u>	<u>Credit</u> <u>Agencies</u>
Professional/ Technical	30.5	24.0	51.7	30.7	68.7	70.5
Managerial	35.0	21.3	36.9	35.8	69.9	45.2
Clerical	23.2	8.1	33.9	10.1	60.1	39.7
Sales	18.7	37.2	34.5	5.9	51.0	25.9
<hr/>						
All Occupations	20.1	19.0	34.5	13.8	62.9	42.6

Source: U.S. Department of Labor, Bureau of Labor Statistics,  
The National Industry-Occupation Employment Matrix,  
1970, 1978, and Projected 1990, Bulletin 2086, Vol. I & II, 1981.



group than secondary schools in western Sydney); and future rates of youth unemployment.

In addition, the future urban transport network shapes and is shaped by the geography of jobs (industrial location) and the distribution of workers (residential land use). The importance of a state economic development strategy, coordinated with these other policies, is highlighted by the projections. In the absence of such a strategy, several of the assumptions underlying the forecasts could become self-fulfilling prophecies, such as the assignment of low participation rates to present and future areas with major public housing development. These assumptions point to areas where much greater research is needed in the preparation of future labor market plans, especially for the outer areas of the Sydney region.

Two of the major issues involved in Table 17 are the future rates of dispersal for the urban population and for the location of economic activity. This report has argued that the trend toward suburbanization will continue in the location of both population-related services and more localized activities such as manufacturing and the office sector. These trends are well-entrenched, although recent research by the Department of Environment and Planning shows that an increasing proportion of jobs in new suburban areas have clustered in the major employment centers. They argue that the distribution of employment has been suburbanizing in direct proportion to the outward movement of population, but lagging by about five years.

The dispersal of employment (DEP 1985, p. 43) should not be oversimplified, however, as this report demonstrates in Section 2. Technological change can support both concentration and dispersal of economic activity within the city. The role of lifestyle changes and the reduced importance of face-to-face contact in business services can be overemphasized. The key issue is the qualitative difference between employment dispersal (manufacturing, routine clerical jobs, community service) and

continued concentration (professional and technical jobs, and the advanced producer services so important in Table 15). Suburban dispersal will continue as suggested by the lagged model, but neither necessarily as desired in principal job deficit areas rather than less vulnerable areas with poor access to public transport, nor with the skill and income diversity to increase the range of employment opportunities in the outer suburbs.

The modelling of overall statistical trends on suburbanization can produce working forecasts of future patterns. Yet there are major dangers in seeking explanation of trends from simple cause-and-effect models which make employment growth a lagged function of population growth. This apparent lagged relationship buries the overlay of forces which Subsections 2.2 and 2.3 show have led to job growth. Only some of these were related to suburbanization of the population and the westerly shift of urban market potential for either manufacturing or services. With different combinations of future events (in the Asian Pacific region, in national manufacturing, the finance sector, or technological change), these lags between population and employment growth would be erratic. For some key activities (advanced producer services, preferred jobs) the lags may increase in the absence of strong government intervention.

Without strong planning policies directed at the geography of new activity, dispersal will continue to reduce jobs in the central and inner city areas, both in manufacturing/warehousing and in a range of office work. Growth of office employment in the suburbs will not necessarily bring more jobs within the reach of workers in the most vulnerable areas of the inner city or the outer suburbs. Section 2 described the polarization in the metropolitan work force which has increased as a result of industrial restructuring. Hutchinson (1987) demonstrated the following trends to the mid-1980s: (a) the net loss of jobs to the inner city in blue-collar and

routine clerical/sales work, with continued gains in specialist quaternary services; (b) heavy manufacturing loss in inner and southern industrial suburbs with limited service growth; (c) strong growth of the quaternary sector in northern suburbs; and (d) net growth of blue-collar jobs in the western region, despite job shedding on the inner fringes of the west, but service growth too slow to produce much diversification in employment structure.

These issues are tackled broadly by the Department's proposed Centres Policy (DEP 1988) which underlies the strong planning scenario in Table 17. In essence, this seeks to stimulate future development of the CBD on the one hand, and to concentrate future dispersal of jobs into strategically selected commercial centers. Among the outcomes of the forecasts in Table 17 would be the following:

- o Lower costs of suburban sprawl as the city increases in size to 4.5 million, including avoidance of expensive cross-hauling by workers;
- o Shortening of overall journeys to work, especially by private motor vehicle;
- o Maximum use of the public transport network (principally the rail system) already installed, to ensure access to the future range of service jobs for people in the west and southwest;
- o Regional focal points for encouraging higher-density residential developments to reduce low-density expansion at the fringes;
- o Greater opportunities for local multiplier effects on the growth of retailing and other services in the centers.

The high intervention forecasts in Table 17 show attempts to hold back future growth of centers not well-served by public transport, such as Neutral Bay/Cremorne. They require strong future growth of employment in the CBD, and the development of Parramatta as a genuine subsidiary CBD on the fringe of the western region. They

promote employment growth in a network of regional and subregional centers, and discourage future growth of tertiary or quaternary services outside designated centers except in specially approved cases. The development of Parramatta in this way is supported strongly by the analysis in Section 2 of this report, which makes clear the key future relationship between the CBD and the Asian Pacific region, and the difficulties faced by Parramatta in competing for this service role. It should not compete with the CBD, but rather be supported by the large regional market and impetus provided by the relocation of government offices.

The designation of priority subregional centers should provide one vehicle for the government to encourage maximum future employment growth on the western and southwestern fringes. An adequate provision of land in these areas for future industrial use would be an essential part of this strategy. Such provision should recognize the trend towards more service-type occupations within industrial production and adopt a flexible future policy on land use under the overall guidelines. The aim should be to discourage free-standing office developments outside the subregional centers, and should not encourage the growth of service-type employment or combined industrial-service activity on industrial land use zones.

Outer suburbs will have the greatest absolute job-creation needs well past the year 2000. Their detailed needs lie beyond the scope of this paper. Given the future growth of the labor force in these areas, plus their vulnerability to high unemployment levels (Section 1), a strong economic development strategy is needed if current levels of job self-sufficiency are to be maintained. Yet self-sufficiency alone will not provide a wholly adequate employment strategy, given future needs. In 1981, about 68 percent of western Sydney's employed workers were able to find jobs within their region (MSJ Keys Young 1985), leaving a large volume of commuting to the CBD and adjacent industrial areas. In addition, since there were 87 jobs in the region

for each 100 resident workers, some 19 jobs per hundred were taken by people travelling into the region from middle-zone suburbs, the Campbelltown growth center (which had a large deficit in local jobs), and adjacent semi-rural areas. These self-sufficiency levels reflect not only the gains made through suburbanization of economic activity, but the problem of relative isolation for many workers from activities elsewhere in the metropolitan labor market.

This report demonstrates that new industrial, technology, and education policies are keys to future urban policy, and the principal challenge to future spatial planning. An economic development strategy should be combined with adequate policies on social and economic infrastructure and transport improvements. Weak planning, mentioned as one possible scenario in Department of Environment and Planning 1983 and 1985, will result in increasing mismatch between the location of jobs and workers; underutilization and inefficiency of the existing public transport system; the costs of commuting by private car falling increasingly on those least able to afford them; and future congestion of road systems difficult or very costly to upgrade.

Greater labor force planning is required if the forecasts in Table 17 are to meet future employment needs of metropolitan residents. Once again, the unevenness of industrial change and the quality of employment generated are the major factors obscured by the aggregate projections. Table 15 illustrates the magnitude of the future planning task, especially in the retraining of skilled and semi-skilled workers from sectors experiencing employment decline and the provision of accessible jobs in the information economy. Skilled production workers will not necessarily be willing or financially able to take jobs in routine clerical work or personal services.

The cost to the state of this unevenness could accelerate as greater welfare support is required, especially in outer areas. Decline in local disposable income

makes it even less likely that such areas could generate the future consumer or business service growth on which the forecasts in Table 17 are based. Polarization of the metropolitan work force will increase if the contribution of the manufacturing sector falls to the low forecasted in Table 15, or if unrestrained dispersal of white-collar jobs to the northern suburbs continues.

#### **4. EMPLOYMENT OBJECTIVES AND POLICIES**

This last section sets out a framework for employment objectives and policies based on the analysis of employment issues. It highlights those that should play a central role in the Sydney metropolitan strategy. Details of specific area policies and discussion of implementation are beyond the scope here, and are better covered in the report on outer metropolitan areas by the same authors (1986).

##### Objectives for the Sydney Metropolitan Region

- a. Ensure the provision of adequate employment opportunities in the projected metropolitan labor force during the next 25 years, with socially and economically desirable distribution within the Sydney region.
- b. Arrest the trend towards polarization within the labor market, and avoid increasing marginalization in certain sectors and in the most vulnerable areas.
- c. Develop a metropolitan employment strategy compatible with essential strategies for non-metropolitan areas.
- d. Ensure that strategies for employment development are compatible with policies to protect and enhance urban amenities and environment.

All three tiers of government will play crucial roles in the attainment of these objectives. This report has identified manufacturing, community services, and advanced producer services as critically important to employment generation. All three are influenced strongly by federal government policies and by national and global circumstances. The state government has the major responsibility for metropolitan policy, while local councils within the Sydney region are closest to the

specific locality impacts of the industrial changes reviewed in this study. Their role in the formulation and implementation of strategy for different parts of the city is vital.

There is a two-way relationship between federal and state-local governments. First, national policies for industrial restructuring must recognize the uneven urban and regional impacts of change. Tripartite industry plans, involving specific agreements among capital, labor, and the state, would stand a greater chance of achieving employment goals if they recognized the differential growth potential in the major manufacturing cities and regional impacts of the plans.

On the other hand, policy for industrial development working from the bottom up, including local employment-generation schemes and small-scale entrepreneurialism, are not unlikely to make long-term contributions to metropolitan targets unless they are integrated with broader state strategy and supported by appropriate top-down policy. National industrial and technology policies are crucial for future employment in the Sydney region, because forces for change derive from both national and global levels. The analysis in this study strongly supports Noyelle's (1983) contention that, for the next two decades, and to a far greater extent than during the post-1950 period of industrialization, urban policy should be a dimension of industrial, financial, and technology policy.

### **Federal Policies**

Before focussing on state strategies for the Sydney region, this section indicates major areas of federal government policy which will strongly influence the achievement of the first two goals mentioned above.

- a. The importance of national strategy for revitalizing Australian manufacturing (and thereby Sydney's) has been emphasized. Industry plans should have a genuine regional dimension, and this goes well beyond



simple provision of untargeted funds for affected cities and regions on a pro rata basis.

- b. A national technology strategy should be integrated with policies to modernize Australian manufacturing and promote new products and markets both in Australia and in the Asian Pacific region. These strategies should aim to reduce the spatial and sectoral fragmentation which has bedeviled Australia's manufacturing structure since 1950.
- c. Commonwealth and state governments should cooperate to ensure Australian manufacturers' maximum reasonable and/or fair access to domestic markets, especially for higher-skill production. Gaining the maximum spin-off to fabricating and engineering industries from Australian natural resource-based projects should be a major part of the strategy. This is one of the functions of the Industrial Supplies Offices established in New South Wales, South Australia, and Victoria. A federal counterpart could ensure greater cooperation between governments and industry in purchasing and supplying capital goods; promote a single national-market demand for capital goods used by the resources sector, other manufacturing industries, and the state, to reduce fragmentation in Australian manufacturing; and reduce avoidable import competition, including that arising through branch plants of transnational corporations. These policies would have a major impact on manufacturing employment and the spin-off to producer services in Sydney (especially in the western suburbs).
- d. Competition between Australian states for industrial investment remains a potent force in shaping the contemporary geography of industrial change. Such competition is exploited by increasingly hypermobile industrial

capital around the world, as large firms restructure conditions for profitable production on a global scale. A clear national strategy for developing key manufacturing sectors and advanced producer services, and new export markets for both of these, would have major impacts on the capital cities. It would help create an environment in which state governments felt less pressured to compete for industrial investment and new ventures such as technology parks, and to simply duplicate each others' strategy mixes for manufacturing and service industry developments. Such a strategy would promote a less fragmented manufacturing sector, and facilitate removal of barriers (such as state preference schemes) to its achievement.

- e. Federal taxation and monetary policies exert strong influences on the environment for future manufacturing and service industry development. In addition, future policies on capital inflow and outflow, and foreign investment guidelines, both have a major effect on Sydney, as shown in this study.
- f. Federal government funding for public utilities, transport development in cities, housing policy, and the provision of social infrastructure is crucial to the areas most vulnerable to future job deficit and unacceptably high unemployment levels. This can scarcely be overemphasized in Sydney's outer suburban areas, which have massive future requirements for investment in urban amenities and targeted education and industrial training programs.

These six areas of federal policy will not only have major influence on the future generation of jobs in the Sydney region as a whole, but also on the ability of the state government to promote the desired intra-urban distribution of jobs. Yet the

state government and local authorities cannot simply wait for the appropriate top-down policies. Most of the employment issues summarized in Subsection 2.7 could be tackled immediately at state and local levels, although this requires a large amount of coordination between various arms of the state bureaucracy. The Sydney metropolitan strategy should include, and be supported by, clear employment policies which can also provide a basis for negotiating with the Commonwealth government for the introduction of supportive national policies and funding.

Economic development and future employment creation should both support and be an integral part of metropolitan strategy for Sydney. This is demanded by the future size of the resident workforce and its likely geography, the economic changes summarized here, and the potential scale of future job deficit in the outer areas.

Weak policy, lack of coordination among departments, and single-dimension policies not forming part of an integrated strategy will all inhibit the achievement of employment goals. Reliance on firm relocation, for example, can simply lead to rearrangement of dwindling job opportunities. Similarly, the continued generation of marginal (low paid, low skilled, or casual) jobs is not successful employment strategy and will continue to polarize the metropolitan labor market.

### **State Government Policies for Metropolitan Sydney**

The following four major policy goals provide a framework for metropolitan employment strategy:

a. The Generation of Net Job Growth Within the Sydney Region

The study has demonstrated four reasons for the importance of manufacturing to the strategy:

- o The generation of net job growth in localities most vulnerable to long-term high unemployment levels;

- o The continued growth of service occupations within manufacturing industry groups;
- o The linkages between manufacturing and future employment growth in producer services, both in the metropolis generally and in outer areas;
- o The crucial role the Sydney region would play in the revitalization of manufacturing in the Australian economy and, especially, in future linkages with the Asian Pacific region.

b. The Targeting of Industry Support, Assistance, and Subsidy

Virtually all major reports on urban employment issues during the last two years have agreed upon this goal (see, for example, Larcombe and Blakely 1983; Cole et al. 1984; Econsult 1985; MSJ Keys Young 1985). Selectivity of assistance, conditional on direct employment targets or linkages with job-creating manufacturing or services, has also been recommended in a recent OECD report on urban economic development policy (OECD 1986).

c. Reduction of Barriers to Net Job Creation and Firm Growth in the Most Vulnerable Parts of the City

This involves not only employment and firm assistance policies tailored to meet the needs of specific localities, but coordination of investment in infrastructure to support (1) and (2) above, and to achieve the distributional goals of the strategy. Investment in human resources (education/training) in the outer suburban areas must continually be emphasized.

d. Encouraging Urban Distinctiveness and Amenity

This goal seeks to break down the stereotyped images of the most vulnerable localities (for example, western Sydney) and to promote

diversity among the main subregional centers so that they can better attract job-creating businesses. Many economic activities in the advanced producer services have been attracted to a variety of new residential environments, and are also attracted by perceptions of high environmental quality. Investments in urban amenities and the preservation of the built environment thus become important elements of employment strategy, especially social and spatial distribution goals, and directly provide jobs in community services and construction.

## 5. CONCLUSION

There are no panaceas for generating employment in Sydney. This report suggests a three-tiered strategy. First, Sydney must modernize and retain its manufacturing base. To the greatest extent possible, both existing and new manufacturing should be concentrated in the western and southwestern areas of the city. Second, functional unemployment can be reduced by better land use and transportation planning. Third, Sydney cannot turn its back on the world or the Pacific region. The city's employment destiny rests primarily on the role it plays as an international center. This portion of the strategy will require more reliance on human resource development -- "high touch" rather than high tech. To this end, the total educational and vocational skill development of Sydney must be improved, especially in the western suburbs. Immigration of able people from elsewhere in the world can speed up this process. However, Sydney must ultimately commit itself to being knowledge-intensive rather than merely labor-intensive.

## 6. REFERENCES

- Alexander, I., 1982. "Office suburbanisation: a new era?," in R. V. Cardew, J. V. Langdale, and D. C. Rich, eds., *Why Cities Change*, George Allen and Unwin, Sydney.
- Bigsworth, K., and Fitzsimmons, A., 1985. "Office suburbanisation in Sydney," unpublished paper presented to Australian Institute of Urban Studies, Canberra.
- Bowring, P., 1985. "Export-led slowdown," *Far Eastern Economic Review*, 26 September, pp. 99-100.
- Bradbury et al., 1984. "Unemployment and Families in Western Sydney," Centre for Applied Research, University of New South Wales.
- Burnley, I., 1980. *The Australian Urban System*, Longman Cheshire, Melbourne.
- Burnley, I., and Walker, S., 1982. "Unemployment in metropolitan Sydney; spatial, social and temporal dimensions," in R. V. Cardew, J. V. Langdale, and D. C. Rich, eds., *Why Cities Change*, George Allen and Unwin, Sydney.
- Cardew, R. V., and Rich, D. C., 1982. "Manufacturing and industrial property development in Sydney," in R. V. Cardew, J. V. Langdale, and D. C. Rich, eds., *Why Cities Change*, George Allen and Unwin, Sydney.
- Cass, B., 1984. "Unemployment in the western region of Sydney: local labour market, housing and transport issues," unpublished paper presented to Urban Research Unit, Australian National University, July.
- Cohen, R. B., 1981. "The new international division of labour, multinational corporations and the urban hierarchy," in M. Dear and A. J. Scott, eds., *Urbanisation and Urban Planning in Capitalist Society*, Methuen, London.
- Cohen, S., and J. Zysman, 1987. *Manufacturing Matters*, Basic Books, New York.
- Cole, M., et al., 1984. *Jobs and Manufacturing: Prospects for Western Sydney*, AMWU, Sydney.
- Cole, M., and Denyer, A., 1984. *Jobs and Manufacturing: Prospects for Western Sydney -- Supplementary Report*, AMWU, Sydney.
- Daly, M. T., 1983. *Sydney Boom, Sydney Bust*, George Allen and Unwin, Sydney.
- Daly, M. T., 1984. "The revolution in international capital markets: urban growth and Australian cities," *Environment and Planning A*, Vol. 16, pp. 1003-1020.
- Daly, M. T., 1985. "Australian urban development and international finance capital," TNC Research Project, Working Paper No. 31, University of Sydney.
- Davies, D., and Hermann, G., 1979. *Employment and Skills Study, Western Sydney Employment Initiatives*, N.S.W. Department of Environment and Planning, Sydney.

- Department of Environment and Planning, 1983. "Employment Issues," in *Draft Metropolitan Strategy*, DEP, unpublished.
- Department of Environment and Planning, 1988. *Towards a Metropolitan Strategy for Sydney 1986-2011*, DEP.
- Department of Environment and Planning, 1985. *A Centres Policy for the Sydney Region; Discussion Paper*, DEP.
- Econsult, 1985. *Financing of Small and Growing Businesses in Western Sydney*, report prepared for Western Sydney Regional Organisation of Councils, Blacktown.
- Edgington, D., 1984. "Some urban and regional consequences of Japanese transnational activity in Australia," *Environment & Planning A*, Vol. 16, pp. 1021-1040.
- Fagan, R. H., 1984. "Corporate strategy and regional uneven development: the case of BHP Ltd," in M. Taylor, ed., *The Geography of Australian Corporate Power*, Croom Helm, Sydney, pp. 91-123.
- Fagan, R. H., 1986, "Australia on the periphery: geographical perspectives on economic reorganisation," in D. N. Jeans, ed., *Australia -- A Geography: Vol. 2 Space and Society*, Sydney University Press.
- Foreign Investment Review Board, 1983. *Report 1983*, AGPS, Canberra.
- Forester, J., ed., 1984. *The Information Technology Revolution*, Blackwell, Oxford.
- Gershuny, J., 1983. *Social Innovation and the Division of Labour*, Oxford University Press, Oxford.
- Gold, S. M., 1980. *Recreation Planning and Design*, McGraw-Hill, New York.
- Horinek, J., 1983. *Youth and Employment Prospects for Western Sydney*, Western Sydney Regional Organisation of Councils, Blacktown.
- Hutchinson, B., and Searle, G. H., 1985. "High technology industry location and planning policy in the Sydney region," in J. F. Brotchie, P. Hall, and P. Newton, eds., *The Spatial Impact of Technological Change*, Croom Helm, London.
- Industries Assistance Commission, 1981. *The Regional Implications of Economic Change*, AGPS, Canberra.
- Jebb, R., 1984. "Recent trends in capital city property markets," in C. Adrian, ed., *Urban Impacts of Foreign and Local Investment in Australia*, Australian Institute of Urban Studies, Canberra.
- Johnston, R., and Rutnam, R., 1981. *The Effects of Technological Change on Employment in the Wollongong Region in the 1980s*, Science, Technology and Public Policy Series, Department of History and Philosophy of Science, University of Wollongong.



- Jones, B. O., 1982. *Sleepers Wake! Technology and the Future of Work*, Oxford University Press, Melbourne.
- Jones, E., and Stillwell, F. J. B., 1983. "When is an urban problem not an urban problem," in P. Williams, ed., *Social Process and the City*, George Allen and Unwin, Sydney.
- Langdale, J. V., 1982. "Telecommunications in Sydney," in R. V. Cardew, J. V. Langdale, and D. C. Rich, eds., *Why Cities Change*, George Allen and Unwin, Sydney.
- Larcombe, G., and E. Blakely, 1983. *Employment in the Illawara*, New South Wales Department of Environment and Planning, Sydney.
- Massey, D., 1984. *Spatial Divisions of Labour: Social Structures and the Geography of Production*, Macmillan, London.
- Matwijiw, P., 1985. *Atlas of Youth Unemployment, 1981*, Australian Institute of Multicultural Affairs, Melbourne.
- MSJ Keys Young, 1985. *West Sydney 2000: Regional Assessment of West Sydney*, Vols. 1 and 2, reports prepared for Western Sydney Regional Organisation of Councils, Blacktown.
- Noyelle, T. J., 1983. "The rise of advanced services: some implications for economic development in U.S. cities," *Journal of the American Planning Association*, Vol. 49, pp. 280-290.
- O'Connor, K., and Edgington, D., 1984. "Tertiary industry and urban development: competition between Melbourne and Sydney," in C. Adrian, ed., *Urban Impacts of Foreign and Local Investment in Australia*, Australian Institute of Urban Studies, Canberra, pp. 93-110.
- Reinecke, I., 1982. *Micro-Invaders*, Penguin, Melbourne.
- Rich, D. C., 1982. "Structural and spatial change in manufacturing," in R. V. Cardew, J. V. Langdale, and D. C. Rich, eds., *Why Cities Change*, George Allen and Unwin, Sydney.
- OECD (Organisation for Economic Co-operation and Development), Revitalizing Urban Economies, 1987.
- Santos, M., 1979. *The Shared Space: the Two Circuits of the Urban Economy in Underdeveloped Countries*, London, Methuen.
- Scott, W. D., and Company, 1984. *Information Technology in Australia: Capabilities and Opportunities*, Vol. 1, W. D. Scott, Sydney.
- Searle, G. H., 1984. "Geographies of employment in Sydney in the year 2015," paper presented to Section 21 of ANZAAS Congress, Canberra, May.

- Senate Standing Committee on Science and Environment, 1979. *Industrial Research and Development in Australia*, AGPS, Canberra.
- Smith, D., and D. T. Herbert, 1979. "Social Problems and the City," *Geographical Perspectives*, Oxford University Press.
- Stillwell, F. J. B., with Larcombe, G., 1980. *Economic Crisis: Cities and Regions*, Pergamon, Sydney.
- Taylor, M. J., and Thrift, N., 1980. "Large corporations and concentrations of capital in Australia: a geographical analysis," *Economic Geography*, Vol. 56, pp. 261-80.
- Taylor, M. J., and Thrift, N., 1981. "Spatial variation in Australian enterprise: the case of large firms headquartered in Sydney and Melbourne," *Environment and Planning A*, Vol. 13, pp. 137-147.
- Teulings, A. J. M., 1984. "The internationalisation squeeze: double capital movement and job transfer within Philips worldwide," *Environment and Planning A*, Vol. 16, pp. 597-614.
- TNC Workers' Research, 1985. *Anti-Union Employment Practices: Final Report*, Trans National Corporations Research Project, Faculty of Economics, University of Sydney.
- University of Wollongong, 1984. *Towards a Regional Technology Strategy*, University of Wollongong.
- Western Sydney Regional Organisation of Councils, 1984. *Study of Major Urban Centres of Western Sydney*, WSROC, Blacktown.
- Wilms, W., 1974. *Proprietary and Public Vocational Training*, Berkeley Center for Research and Development in Higher Education, University of California at Berkeley.
- Vipond, J., 1982. "The suburban unemployed," Centre for Applied Research, Paper No. 16, University of New South Wales, Kensington.
- Vipond, J., 1984. "The intra-urban employment gradient: the influence of location on unemployment," *Urban Studies*, Vol. 21, pp. 377-388.
- Vipond, J., and Beed, C., 1986. "A Sydney and Melbourne comparison of intra-urban differentials in unemployment rates," *Australian Geographical Studies*, Vol. 24, pp. 41-56.

Table 17

Percent Change in Employment  
in Selected Financial Service Industries  
by Selected Occupation: United States -- 1970-78

	<u>All</u> <u>Industries</u>	<u>Insurance</u> <u>Carriers</u>	<u>Banking</u>	<u>Securities</u>	<u>Business</u> <u>Services</u>	<u>Credit</u> <u>Agencies</u>
Professional/ Technical	30.5	24.0	51.7	30.7	68.7	70.5
Managerial	35.0	21.3	36.9	35.8	69.9	45.2
Clerical	23.2	8.1	33.9	10.1	60.1	39.7
Sales	18.7	37.2	34.5	5.9	51.0	25.9
<hr/>						
All Occupations	20.1	19.0	34.5	13.8	62.9	42.6

Source: U.S. Department of Labor, Bureau of Labor Statistics,  
The National Industry-Occupation Employment Matrix,  
1970, 1978, and Projected 1990, Bulletin 2086, Vol. I & II, 1981.

Table 16

Employment in Major Commercial Centers in Sydney Region, 1981,  
and at 4.5 Million Population

<u>Center</u>	<u>1981</u>	<u>EMPLOYMENT</u>	
		<u>Forecast at 4.5 Million Population</u>	
		<u>Strong Planning Intervention</u>	<u>Low Planning Intervention<sup>a</sup></u>
Sydney CBD	188,919	220,000	150,000
North Sydney	28,750	40,000	40,000
St. Leonards'	22,983	20,000 <sup>b</sup>	20,000 <sup>b</sup>
Chatswood	9,363	20,000	20,000
Pymble/Gordon	4,256	5,500	7,000
Hornsby	9,637	15,000	10,000
Neutral Bay/Cremorne	5,397	4,000	8,000
Manly	4,218	6,000	6,000
Dee Why/Brookvale	5,088	10,000	6,000
Epping/Eastwood	4,024	5,000	5,000
Bondi Junction	6,095	10,000	7,500
Hurstville	6,978	10,000	7,000
Sutherland	5,524	10,000 <sup>b</sup>	1,500 <sup>b</sup>
Miranda	5,681	5,000	6,000
Burwood	7,355	10,000	7,500
Bankstown	9,727	15,000	10,000
Parramatta	20,360	60,000	35,000
Blacktown	10,592	18,000	13,000
Mt. Druitt	1,746	5,000	3,000
Penrith	3,703	20,000	11,000
NW Sector Center	-	8,000	2,500
Liverpool	10,904	20,000	12,000
Campbelltown	4,729	30,000	11,000
Bringelly	-	12,000	2,500
Gosford	5,233	10,000	6,500

SOURCE: For 1981 data, State Transport Study Group Travel Survey.  
Figures exclude students working part-time.

<sup>a</sup> Assumes low-density population scenario.

<sup>b</sup> Forecast based on narrower center employment definition than 1981 figures, which include industrial employment in same traffic zone but outside center.

Table 15

Employment Structure of Sydney Region,  
1981 and 2011

<u>Industry Group</u>	<u>Percentage of total employment</u>			
	<u>1981</u>	<u>Manufacturing's share,</u> <u>2011 (forecast)</u>		
		<u>High</u>	<u>Medium</u>	<u>Low</u>
Agriculture, mining	1.3	1.0	1.0	1.0
Manufacturing	23.1	15.0	12.5	10.0
Utilities	2.1	2.0	2.0	2.0
Construction	5.2	4.5	4.0	3.5
Retail, Wholesale	20.4	16.0	17.0	18.0
Transport	5.7	6.5	6.5	6.5
Communication	2.4	2.0	2.0	2.0
Finance, business services	13.0	19.0	18.5	18.0
Public administration, defense	5.5	6.0	6.5	7.0
Community services	15.6	17.0	19.0	21.0
Personal services, recreation, tourism	5.7	11.0	11.0	11.0
TOTAL	100.0	100.0	100.0	100.0

Sources: 1981 -- ABS Census of Population and Housing;  
2011 -- DEP, 1985

Table 14

U.S. Employment by Major Occupation Groups: 1900 to 1995  
(percentage distribution)<sup>a</sup>

<u>Occupation Group</u>	<u>1900</u>	<u>1930</u>	<u>1960</u>	<u>1980</u>	<u>1995<sup>b</sup></u>
Professional/Technical	4	7	11	16	17
Managerial	6	7	11	11	10
Clerical	3	9	15	19	19
Sales	5	6	6	6	7
Craft	11	13	13	13	12
Operative	13	16	18	14	12
Laborer	12	11	6	5	5
Service	9	10	12	13	16
Farm	37	21	8	3	2

SOURCES: U.S. Bureau of Census, Historical Statistics of the United States, Part 1 (Washington, D.C.: U.S. Government Printing Office, 1975), Table D182-232; U.S. Department of Labor, Employment and Training Report of the President (Washington, D.C.: U.S. Government Printing Office, 1979 and 1982), Tables A-16 and A-18; George T. Silvestri, John N. Likasiewicz, and Marcus E. Einstein, Occupational Employment Projections Through 1995, Monthly Labor Review 106, Nov. 1983, Table 1.

<sup>a</sup> Distributions for 1900 and 1930 based on experienced civilian labor force. Distributions for other years based on total employed persons.

<sup>b</sup> Data for 1995 based on moderate-trend projections.

Table 13

Impact on Employment of Current Technological Changes; Some Forecasts:

<u>Country</u>	<u>Type of Technological Change</u>	<u>Sector or Occupation</u>	<u>Horizon</u>	<u>Forecast</u>
Australia	Computerization	Banking	1989	Job savings of 30-40%; job creation of 5-10%
France	Computerization	Banking	1988	Job savings of 30%
France	Automated check-sorting	Banking	1985	Potential abolition of 7,000 jobs
United Kingdom	Computerization	Banking	1985 1990	Slight increase in staff Stabilization of staff
France	Computerization	Insurance	1988	Job savings of 30%
United Kingdom	Computerization	Insurance	1984	With no growth in business, 15% retrenchments
United Kingdom	All changes under way	Banking, Insurance, & Finance	1983 1993 2003	Retrenchments in relation to 1978: 7.6% 31.4% 42.8%
Japan	POS terminals	Department Stores & Supermarkets	1990	<u>Rapid Dissemination (100%)</u> : in relation to 1975, reduction in sales staff of 3,000 (1.2%), & potential loss of 39,000 sales jobs; increase in total workforce of 5,000 (1.5%) <u>Slower dissemination (50%)</u> : increase in sales staff of 17,000 (6.5%) and potential loss of 19,000 sales jobs; increase in total workforce of 25,000 (7.9%)
United Kingdom	All changes under way	Commerce	1983 1993 2003	Retrenchments in relation to 1978: 41.1% 24.8% 39.8%
Japan	Office machines (copiers, microfilms, office computers, & word-processing machines)	All sectors	1985	Insignificant effects on staff
France	Word processing	All sectors	1985	Potential abolition of 82,000 secretarial jobs
France	Telecopy	Post, telecommunications, & all businesses	1985	Potential abolition of 11,000 jobs
United Kingdom	Word processing	Office work -- all sectors	1983	Potential abolition of 250,000 jobs
Western Europe	Office work automation	All sectors	1988	Office staff retrenchments of 20-25%; possible loss of jobs for 5 million typists

SOURCE: Johnston and Rutnam (1981, pp. 14-15), adopted from International Labour Organisation (1981).

Table 2

Female Intra-Urban Unemployment Gradient  
in Sydney -- 1976 and 1981

Equations for Female Unemployment

Independent Variables	Dependent Variables					
	Total Female Unemployment		Adult Female Unemployment		Teenage Female Unemployment	
	1976	1981	1976	1981	1976	1981
Constant	-2.731	-1.141	-3.480	-1.400	-1.537	0.861
Distance	0.004 (2.721)***	0.006 (3.765)***	0.003 (1.813)*	0.005 (3.241)***	0.010 (3.345)***	0.007 (2.691)**
Youthfulness	6.938 (6.468)***	4.595 (4.086)***	-	-	6.667 (3.170)***	2.825 (1.590)
Migrants	1.702 (3.553)	1.474 (3.602)***	1.371 (2.343)	1.123 (2.849)***	1.489 (1.521)	1.640 (2.411)**
Lack of skills	0.539 (1.698)*	0.702 (3.207)***	1.468 (4.694)***	1.128 (6.550)***	0.714 (1.132)	0.588 (1.616)
Immobility	-1.381 (4.232)***	-1.720 (7.217)***	-0.846 (2.598)**	-1.642 (7.264)***	-2.202 (1.528)	-4.221 (4.074)***
Occupation Industry	-1.519 (3.718)***	-1.972 (3.741)***	-1.190 (2.345)**	-1.890 (3.633)***	-1.359 (1.530)	-1.618 (1.796)*
R <sup>(2)</sup>	0.86	0.90	0.67	0.88	0.74	0.79
Degrees of Freedom	38	37	39	38	38	37

NOTES: Immobility was measured by Variable 11 in equations for total female unemployment and adult female unemployment and was measured by Variable 4 in teenage female unemployment equations.

Logit transformation was applied to dependent variable.

t-values in parentheses.

- \* Significant at 0.10.
- \*\* Significant at 0.05.
- \*\*\* Significant at 0.01.

SOURCE: Vipond 1984



Table 1

Male Intra-Urban Unemployment Gradient  
in Sydney -- 1976 and 1981

Equations for Male Unemployment

Independent Variables	Dependent Variables					
	Total Male Unemployment		Adult Male Unemployment		Teenage Male Unemployment	
	1976	1981	1976	1981	1976	1981
Constant	-2.875	-2.080	-3.223	-2.371	-0.365	0.264
Distance	0.009 (3.711)***	0.008 (4.025)***	0.009 (3.111)***	0.008 (4.110)***	0.010 (4.682)***	0.003 (1.113)
Youthfulness	3.667 (1.188)	3.724 (1.486)			6.409 (2.168)**	2.296 (0.714)
Migrants	0.946 (1.159)	0.533 (2.675)**	0.708 (0.808)	1.495 (2.792)***	1.201 (1.451)	0.688 (0.087)
Lack of Skills	2.012 (3.190)***	1.486 (3.683)***	2.588 (3.884)***	1.821 (5.490)***	0.526 (0.795)	1.173 (2.085)**
Immobility	-2.256 (4.146)***	-2.664 (6.918)***	-2.397 (4.362)***	-2.654 (7.880)***	-4.372 (3.187)***	-5.386 (4.227)***
Occupation Industry	0.450 (0.656)	0.293 (0.451)	0.641 (0.853)	0.445 (0.711)	0.520 (0.734)	0.170 (0.191)
R <sup>(2)</sup>	0.68	0.85	0.66	0.87	0.59	0.64
Degrees of Freedom	38	37	39	38	38	37

NOTES: Immobility was measured by Variable 11 in equations for total male unemployment and adult male unemployment, and was measured by Variable 4 in teenage male unemployment equations.

't' values in parentheses.

\* Significant at 0.10.  
\*\* Significant at 0.05.  
\*\*\* Significant at 0.01.

SOURCE: Vipond 1984

Figure 1

Estimated Unemployment, March 1985

LGAs of the Sydney Statistical Division

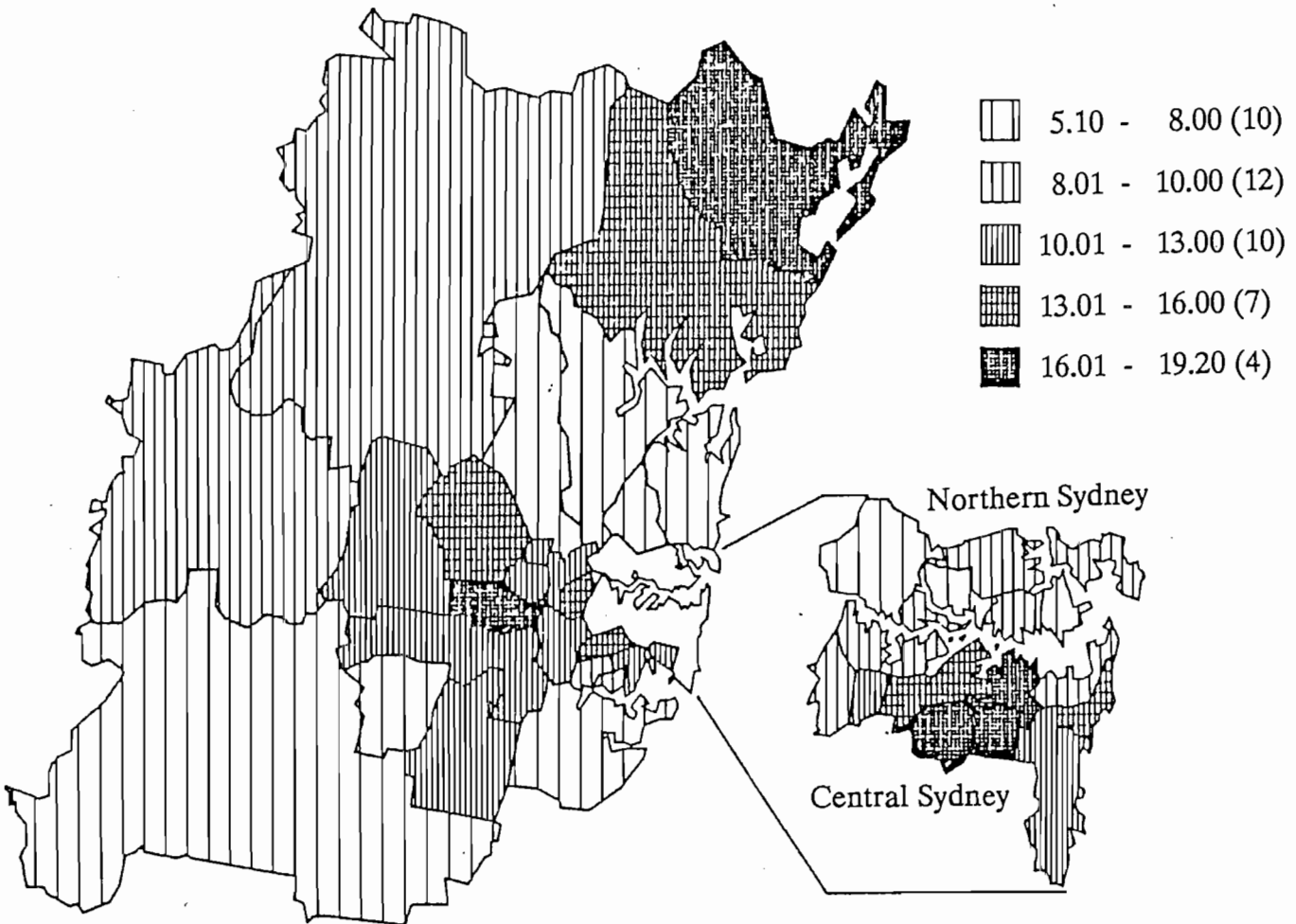


Table 3

Employment Structure:  
Sydney Region and Australia, 1971 and 1981

<u>Industry Group</u>	<u>Percentage of Total Employment</u>			
	<u>Sydney</u>		<u>Australia</u>	
	<u>1971</u>	<u>1981</u>	<u>1971</u>	<u>1981</u>
Agriculture	0.8	0.7	7.7	6.5
Mining	0.4	0.6	1.5	1.5
Manufacturing	30.6	23.1	24.2	19.2
Utilities	1.9	2.1	1.8	2.2
Construction	5.9	5.2	8.2	6.9
Retail & Wholesale Trade	21.0	20.4	19.7	18.8
Transport	5.1	5.7	5.4	5.7
Communication	2.3	2.4	2.1	2.2
Finance & Business Services	10.1	13.0	7.2	9.1
Public Administration				
& Defense	5.5	5.5	5.6	6.1
Community Services	11.0	15.6	11.2	16.2
Personal Services,				
Recreation, & Tourism	5.4	5.7	5.3	5.7
	100.0	100.0	100.0	100.0

SOURCES: Based on ABS, 1971 Census of Population and Housing,  
and 1981 Census of Population and Housing.

Table 4  
Employment Change by Industry Group and Subregion,  
1971 to 1981

Industry Group	Subregion								
	Central Sydney	South Sydney/ Botany	Inner West	Eastern	Southern	Middle W & SW	Outer W & SW	Northern	Periphery
Agriculture	195	-115	29	17	-49	-157	8	-151	-41
Mining	-461	-29	37	3	-56	41	17	-35	2,433
Manufacturing	-12,153	-22,230	-18,840	-4,049	-3,338	-8,678	8,301	-908	2,898
Utilities	526	96	-246	-242	242	594	1,043	679	1,550
Construction	-3,206	-1,687	-1,228	-684	-283	-1,342	2,381	786	2,732
Retail & Wholesale Trade	-14,513	-3,049	-2,935	-363	713	4,791	11,004	13,488	5,067
Transport	-2,697	4,392	1,370	335	1,942	3,042	1,816	1,233	1,127
Communication	1,663	-841	565	198	9	395	985	593	427
Finance & Business Services	11,292	1,669	2,669	1,592	2,635	5,633	4,819	11,523	2,801
Public Administration & Defense	-3,328	563	893	512	1,167	2,253	564	1,679	1,333
Community Services	5,094	2,295	5,022	3,528	4,148	12,690	12,480	16,715	6,468
Personal Services, Recreation, & Tourism	1,194	-255	-21	-168	577	855	2,117	3,385	1,898
<b>TOTAL</b>	<b>-16,294</b>	<b>-19,191</b>	<b>-12,685</b>	<b>673</b>	<b>7,707</b>	<b>20,107</b>	<b>45,535</b>	<b>48,987</b>	<b>28,693</b>

**SOURCES:** Based on ABS, 1971 Census of Population and Housing, and 1981 Census of Population and Housing. Excludes employment where place of employment not stated.

Subregion definitions are as follows:

Central Sydney: Sydney, North Sydney.

South Sydney/Botany: South Sydney, Botany.

Inner West: Leichhardt, Marrickville.

Eastern: Randwick, Waverly, Woollahra.

Southern: Hurstville, Kogarah, Rockdale, Sutherland.

Middle West and South West: Ashfield, Auburn, Bankstown, Burwood, Canterbury, Concord, Drummoyne, Parramatta, Strathfield.

Outer West and South West: Blacktown, Camden, Campbelltown, Fairfield, Holroyd, Liverpool, Penrith.

Northern: Baulkham Hills, Hornsby, Hunters Hill, Ku-ring-gai, Lane Cove, Manly, Mosman, Ryde, Warringah, Willoughby.

Periphery: Blue Mountains, Gosford, Hawkesbury, Wollondilly, Wyong.

Table 5  
Occupational Structure of Workforce by Sydney Subregion, 1981  
(percent)

<u>Industry Group</u>	<u>Subregion</u>								
	<u>Central Sydney</u>	<u>South Sydney/ Botany</u>	<u>Inner West</u>	<u>Eastern</u>	<u>Southern</u>	<u>Middle W &amp; SW</u>	<u>Outer W &amp; SW</u>	<u>Northern</u>	<u>Periphery</u>
Professional & Technical Administration, Executive, & Managerial	23.3	8.4	15.4	18.2	14.1	10.3	8.2	21.3	13.5
Clerical	7.2	2.2	3.6	7.0	6.1	3.4	2.7	10.2	4.3
Sales	22.7	16.7	19.1	23.2	24.0	20.9	18.2	23.5	16.1
	7.3	5.6	7.1	9.7	9.2	8.0	7.8	10.0	8.9
<b>TOTAL WHITE COLLAR</b>	<b>60.5</b>	<b>32.8</b>	<b>45.2</b>	<b>58.1</b>	<b>53.4</b>	<b>42.6</b>	<b>37.0</b>	<b>65.0</b>	<b>42.9</b>
Transport & Communication Workers	3.5	6.0	5.1	4.4	5.0	5.9	6.1	3.2	5.3
Craftsmen, Process Workers, & Laborers	13.9	40.1	31.8	18.2	28.4	37.1	40.0	18.5	29.2
Service, Sport, & Recreation Workers	10.8	10.8	9.7	10.6	7.3	7.8	7.3	7.0	8.6
Other Blue Collar Workers	1.7	1.1	0.7	1.7	0.9	1.1	3.8	2.0	7.6
<b>TOTAL BLUE COLLAR</b>	<b>29.8</b>	<b>57.9</b>	<b>47.3</b>	<b>34.8</b>	<b>41.7</b>	<b>51.9</b>	<b>57.0</b>	<b>30.7</b>	<b>50.7</b>
Other	9.6	9.2	7.5	7.1	4.9	5.5	6.0	4.3	6.4
<b>TOTAL ALL GROUPS</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

SOURCE: ABS, 1981 Census of Population and Housing.

Table 6

Western Sydney Manufacturing Employment Change  
1976-77 to 1982-83  
by Local Government Areas

<u>LGA</u>	<u>Change</u>	
	<u>Number</u>	<u>Percent</u>
Auburn	-4,715	-38.5
Parramatta	-3,050	-13.6
Holroyd	-593	-5.5
Liverpool	-334	-4.0
Penrith	172	2.0
Fairfield	920	11.4
Blacktown	1,931	17.8
Baulkham Hills	860	28.7

SOURCE: JAM Study (directory of firms); Census of Manufacturing Establishments, Australian Bureau of Statistics (annual).

Table 7

Capital Cities: Activity Shares of 1984/85  
Non-Dwelling Approvals (Percent)

	<u>Sydney</u>	<u>Melbourne</u>	<u>Brisbane</u>	<u>Adelaide</u>	<u>Perth</u>	<u>Hobart</u>
Offices	40.0	35.1	36.3	29.4	27.4	26.7
Shops	13.3	14.5	20.4	13.8	3.3	8.9
Factories	12.4	11.6	9.0	5.5	3.7	1.7
Business Premises	10.2	7.6	8.7	8.0	5.1	3.1
Hotels	1.3	4.7	6.7	13.7	21.9	34.6
Other	22.8	26.5	18.9	29.6	38.6	25.0
TOTAL	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

Source: Australian Institute of Urban Studies.

Table 8

Office Employment in Selected Local Government Areas,  
Sydney, 1981

<u>LGA</u>	<u>Office Workers 1981</u>	
	<u>Number</u>	<u>Percent</u>
Sydney	195,277	30.64
North Sydney	37,127	5.83
Parramatta	30,349	4.76
Bankstown	22,288	3.50
Willoughby	21,328	3.35
Warringah	18,975	2.98
Ryde	17,820	2.80
Blacktown	14,719	2.31
Hornsby	12,694	1.99
Ku-ring-gai	11,299	1.77
Gosford	9,703	1.52
Baulkham Hills	8,397	1.32
Lane Cove	6,085	0.96
 SYDNEY STATISTICAL DIVISION TOTAL	 637,355	 100.00

SOURCE: Australian Bureau of Statistics, 1981 Census of Population and Housing, Journey to Work data.



Table 9

Share of Office Space Completions, Sydney, 1961-1984,  
by Local Government Area Zones<sup>a</sup>

<u>Zone</u>	<u>1961-65</u>	<u>1966-70</u>	<u>1971-75</u>	<u>1980-84</u>
Center	90.8	82.6	74.7	62.9
Inner	4.5	7.0	10.4	20.4
Middle	5.3	8.1	11.8	6.9
Fringe/Outer	1.6	2.3	3.2	9.8
TOTAL	100.0	100.0	100.0	100.0

SOURCES: Australian Bureau of Statistics, Building Activity Surveys (various); Australian Institute of Urban Studies, 1984.

<sup>a</sup> Prior to July 1983, the A.B.S. classified buildings according to their major use. Consequently, the building data shown here do not include office space in buildings other than those classified as office buildings. Because of the predominance of mixed-use buildings in suburban locations, this omission is likely to have a greater impact on figures for suburban locations than those for CBD locations.

Table 12

Australia's 100 Largest Business Organizations -- 1984<sup>a</sup>  
 (Total number of firms; foreign-controlled in parentheses)

<u>Sector</u>	<u>Sydney</u>	<u>Melbourne</u>	<u>Brisbane</u>	<u>Adelaide</u>	<u>Perth</u>	<u>Other</u>	<u>Total</u>
Minerals/Energy	8 (4)	11 (5)	2 (2)	1 (-)	-	1 (-)	23 (11)
Manufacturing	18 (10)	20 (11)	3 (-)	1 (1)	1 (-)	1 (-)	44 (23)
"Conglomerates" <sup>b</sup>	6 (-)	1 (-)	-	1 (-)	2 (-)	-	10 (-)
Finance & Insurance	2 (-)	4 (-)	-	-	-	-	6 (-)
Retailing	1 (-)	3 (1)	-	-	-	-	4 (1)
Media	2 (-)	1 (-)	-	1 (-)	-	-	4 (-)
Construction &							
Property Development	2 (-)	1 (-)	-	-	-	-	3 (-)
Transport	2 (-)	1 (-)	-	-	-	-	3 (-)
Trading Companies	3 (-)	-	-	-	-	-	3 (1)
<b>TOTALS</b>	<b>45 (15)</b>	<b>41 (17)</b>	<b>5 (2)</b>	<b>4 (1)</b>	<b>3 (-)</b>	<b>2 (1)</b>	<b>100 (36)</b>

SOURCE: Fagan 1986.

<sup>a</sup> Twin criteria were used to compile the largest 100 firms:  
 (1) total shareholders' funds (an indication of capital structure and size); (2) total employment in Australian-controlled company or Australian subsidiaries of transnational corporation (an indication of major job-providing organization). Firms were ranked according to total shareholders' funds to a lower limit of \$A200 million. Around this limit, firms were included if they employed 1,000 persons or more. On this ranking, BHP Ltd. was the largest industrial organization in total funds, but with dramatic job losses after 1981, slipped to third-largest employer behind the retailers Coles and Woolworths.

<sup>b</sup> Subsidiaries operating substantially across the sectoral classifications.

Table 11  
Head Office Location of  
Major Financial Institutions  
in Australia

<u>Type of Institution</u>	<u>Sydney</u>	<u>Sydney/ Melbourne</u>	<u>Melbourne</u>	<u>Other</u>
Reserve bank	1	-	-	-
Trading banks	3	2	1	2
Prescribed banks	2	-	-	1
Development banks	2	1	-	-
Representative offices of overseas banks	73	6	15	-
Merchant banks	41	14	-	1
Major finance companies	16	4	-	4
Authorized money market dealers	5	4	-	-
Ten largest life insurance companies	7	2	-	1
Twenty largest general insurance companies	13	7	-	-
Number of building societies	33	36	-	40
Number of credit unions	285	186	-	149
Australian companies:				
Top 200 by sales performance	99	68	-	33
Top 200 by profitability	100	70	-	30

SOURCE: Department of Industrial Development and Decentralisation (1984)  
Sydney: Financial Growth Centre for the Pacific, DIDD, Sydney.

Table 10

Imbalance Between Workforce Residence and Place of Employment,  
by Occupation Group and Subregion, 1981

Industry Group	Subregion								
	Central Sydney	South Sydney/ Botany	Inner West	Eastern	Southern	Middle W & SW	Outer W & SW	Northern	Periphery
Professional & Technical Administration, Executive, & Managerial	-46,842	-3,881	6,631	10,367	12,386	-599	2,260	34,763	5,972
Clerical	-18,675	-3,854	-1,263	5,399	5,602	-3,421	999	21,301	1,736
Sales	-103,590	-10,974	8,334	18,450	25,993	12,025	24,863	41,117	7,692
	-15,899	-2,895	-117	5,504	6,291	-569	5,789	11,356	2,941
<b>TOTAL WHITE COLLAR</b>	<b>-185,006</b>	<b>-21,604</b>	<b>13,585</b>	<b>39,720</b>	<b>50,272</b>	<b>7,436</b>	<b>33,911</b>	<b>108,537</b>	<b>18,341</b>
Transport & Communica- tion Workers	-8,857	-5,674	736	3,209	5,224	4,114	9,617	4,580	2,501
Craftsmen, Process Workers, & Laborers	-31,898	-24,181	849	12,506	21,129	487	52,168	15,769	11,723
Service, Sport, & Recreation Workers	-15,971	-2,298	4,129	4,871	4,885	4,388	8,138	5,797	2,570
Other Blue Collar Workers	-1,534	-36	293	864	817	1,115	3,017	2,166	235
<b>TOTAL BLUE COLLAR</b>	<b>-58,260</b>	<b>-32,189</b>	<b>6,007</b>	<b>21,450</b>	<b>32,055</b>	<b>10,104</b>	<b>72,940</b>	<b>28,312</b>	<b>17,029</b>
<b>TOTAL ALL GROUPS<sup>a</sup></b>	<b>-243,266</b>	<b>-53,793</b>	<b>19,592</b>	<b>61,170</b>	<b>82,327</b>	<b>17,540</b>	<b>106,851</b>	<b>136,849</b>	<b>35,370</b>

SOURCE: ABS, 1981 Census of Population and Housing.

<sup>a</sup> Excludes workforce where residence or place of employment was unstated.