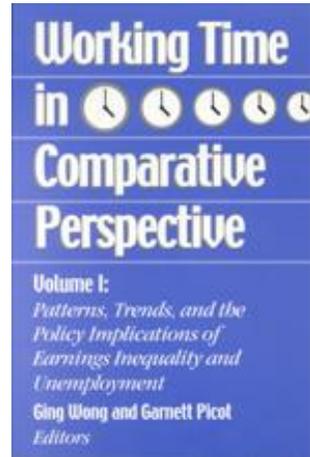

Upjohn Institute Press

The Growth of Income and Employment Inequality in Australian Cities

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Chapter 6 (pp. 171-199) in:
**Working Time in Comparative Perspective: Patterns, Trends, and the
Policy Implications of Earnings Inequality and Unemployment, Volume I**
Ging Wong, and Garnett Picot, eds.
Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 2001
DOI: 10.17848/9780880992275.vol1ch6

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The Growth of Income and Employment Inequality in Australian Cities

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Since the early 1970s, income inequality among individuals has been growing in most OECD countries. It has arisen from two sources: higher levels of unemployment, especially in Europe, and widening wage dispersions, particularly in the United States. Australia has also been subject to these trends, and the increasing inequality has led to a fast-growing research literature which documents the changes (Gregory 1993; Borland and Wilkins 1996; Saunders 1994).¹ The evidence seems to suggest that the change in inequality is less than in the United States and the United Kingdom.²

This chapter begins the process of analyzing changing income inequality on a spatial basis. It utilizes census data to emphasize changes in income and employment inequality within Australian cities over a period from 1976 to 1991. The data cover more than one-third of the Australian population. The analysis reveals a dramatic change in society. The shift in income inequality among individuals and families that has occurred over the 15 years from 1976 has been magnified on a spatial basis. Average household income has increased 23 percent in the 5 percent of neighborhoods with the highest socioeconomic status (SES), and fallen 23 percent in the 5 percent of neighborhoods from the lowest SES. These changes have been driven predominantly by employment changes. In 1976, employment activity of neighborhood residents was not related to the SES ranking of the neighborhood, but by 1991 that had changed. Employment in neighborhoods from the bottom 5 percent of neighborhoods ranked by SES status had fallen 37 percent.

The chapter is structured as follows. We begin by briefly describing the macroenvironment within which urban inequality has increased. The next section documents neighborhood changes according

to the 1976 census and the 1991 census. We then demonstrate that the increased income inequality is being generated by employment shifts across neighborhoods. The following section conjectures as to the causes of these changes and offers some policy comments, and concluding remarks are contained in the final section.

THE MACROENVIRONMENT AND INCREASED NEIGHBORHOOD INEQUALITY

Some parts of the Australian labor market have performed well over the last two decades. The more successful features include a rapid growth of part-time jobs for women and young people. Some periods also exhibited strong aggregate employment growth, especially during 1983 to 1989 and 1993 to 1995. In addition, after 15 years of insignificant growth, average real wages have begun to increase again. Although there have been other good changes in the Australian labor market, poor outcomes dominate and four adverse features stand out in the period since 1976.

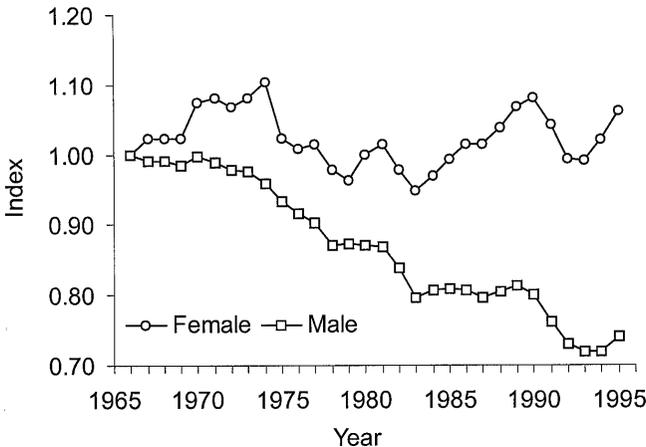
- 1) Employment opportunities for men and women seeking full-time work have not kept pace with population growth rates. A slight decrease in full-time male employment might be anticipated, as more men seek early retirement and younger men stay longer in education institutions. Since June 1976, however, the male full-time employment ratio has fallen 21 percent, which is far greater than what might have been expected (Figure 1). Unemployment among full-time male workers at May 1997 was 8.8 percent.

Young women have also extended their involvement in education, but with the reduction in the birth rate, more divorces, postponement of marriage, and more women seeking careers in paid employment, it might be expected that full-time employment would increase. But at May 1997, the proportion of women employed full time was only 5.0 percent more than at August 1976. Unemployment among female full-time workers has increased from 4.3 percent in 1976 to 9.7 percent at May 1997.

- 2) During each cycle over the last two decades, the number of welfare recipients, such as those who receive unemployment benefits, increased quickly and failed to return to previous levels during the recovery. This hysteresis effect suggests that much of the full-time employment reduction was involuntary.
- 3) The length of the unemployment spell has increased, and Australia has developed a long-term unemployment problem. In 1976, the average current spell length of unemployed persons was 17.5 weeks. By May 1997, the spell length had increased to 52.6 weeks.
- 4) There is a significant widening of the earnings distribution among those men who have been successful in obtaining full-time employment. Earnings inequality also increased among women (Gregory 1993).

These four adverse features suggest that economic and social inequality widened in Australia, and this is what most researchers find for most periods (Saunders 1994; Harding 1995). These studies analyze changes among individuals, and to a lesser extent changes among households or family units. It seemed to us that there should be spatial parallels within major cities where the rich and poor live in different locations.

Figure 1 Full-Time Employment/Population Indexes, 1966–1995 (1966=100)



NEIGHBORHOOD INCOME INEQUALITY CHANGES, 1976–1991

The Data

Australia has always had neighborhoods that are clearly demarcated by income and SES. Nevertheless, the undesirability and adverse effects of low income neighborhoods are not stamped on our national consciousness to the same extent that they are often stamped on the consciousness of citizens of other countries. United States citizens, for example, are very aware of the poverty of their inner cities and are well aware of the undesirable effects on residents (Wilson 1987; Case and Katz 1991).

The census is the only consistent database available to trace changes in neighborhood inequality over a significant period of time. There are four census collections that include income data that could be used to measure neighborhood changes. Each census—1976, 1981, 1986, and 1991—coincided with an economic recession. By some measures, the depth of the recessions are not too dissimilar, but it is noticeable that the unemployment rate is subject to an upward trend: 4.4, 5.6, 8.0, and 9.5 percent, respectively.³ Because unemployment is higher at each successive date, we cannot use census data directly to analyze income distribution effects of economic cycles; therefore, we emphasize the trend from a comparison of 1976 with 1991.

To conduct the neighborhood analysis, the data are presented as group averages from collection districts (CDs), which are the smallest geographical area for which census data are available. CDs usually contain 200–300 dwellings that are delineated by easily identifiable boundaries. CDs tend to remain unaltered through time, and in our sample we exclude those which were subject to boundary changes and not comparable across the four censuses. The analysis is confined to CDs within major urban areas with populations of more than 100,000.⁴ The panel consists of 9,483 CDs and about six million people in each of the four years. There are no other comparable data sets which allow such a rich analysis of the changing geographical distribution of economic variables. The results reported here are similar to those derived

from post-code data, which, on average, groups CDs into population groups of about 4,500 (see Gregory and Hunter 1995).

Although the census provides by far the best data, they are not ideal. For example, income data are not available by source. Consequently, it is not possible to investigate directly the role of government welfare payments or other social services. There are no data on taxes paid. Another difficulty is that detailed geographic data are released as grouped means for specific variables, and it is not possible for us to reclassify the data in many ways that would improve our understanding.

The geographical analysis is based on CDs ranked by socioeconomic status (SES). We use the measure of SES calculated by the Australian Bureau of Statistics for 1986 (1990).⁵ Each CD preserves its SES ranking over the 15 years. None of the results are affected by the choice of the census year on which the SES ranking is based.⁶

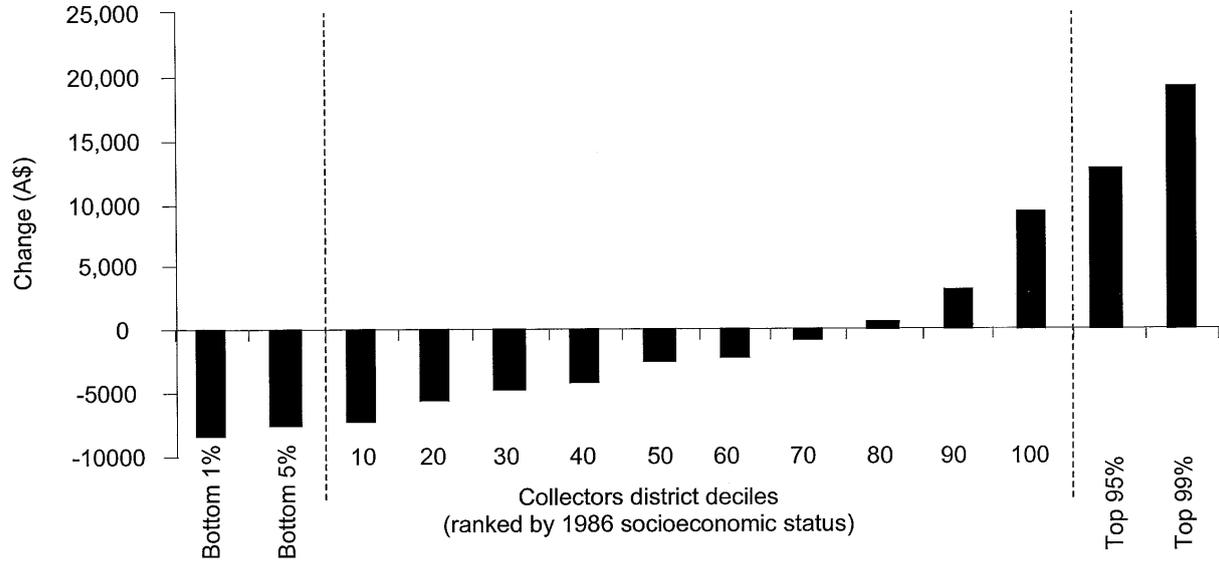
Neighborhoods and Household Income

We believe that income and employment gaps between our best and worst neighborhoods are not as great as the gaps in many major OECD cities. We also believe that Australia is not in danger of creating urban problems to the same degree as the United States.⁷ However, we were surprised at the extent of the changes for the worse that have occurred since the mid 1970s.

We begin by discussing the marked change in the dispersion of annual household income across neighborhoods. In 1976, the ratio of the mean household income of CDs from the lowest to the highest 5 percent of SES areas was 60.4 percent. Within the space of 15 years, the ratio had fallen to 37.9 percent. Income distribution has become more unequal and is well beyond that which can be ascribed simply to changes in the structure of households. There is a significant increase in the geographic polarization of household income across Australia. The poor are increasingly living together in one set of neighborhoods and the rich in another. The economic gap is widening.

Figure 2 arranges CDs from low to high SES and enables us to identify the pattern of income change across CDs. The CDs are ordered on the basis of their 1986 SES rankings. The first two bars on the left measure the change in mean income over the 1976–1991 period

Figure 2 Change in Average Household Income, 1976–1991 (1991 A\$)



for the 1 percent and 5 percent of CDs with the lowest SES. The last two bars on the right measure the change in mean income from the top 5 percent and 1 percent of CDs. All other bars refer to the change in annual household income averaged within each CD decile. Average income is in 1991 prices. Each decile includes approximately 500,000 adults.

As we move across the CDs from low to high SES areas, the pattern of income changes is quite smooth. For the bottom 70 percent of CDs, average household income has fallen in absolute terms and is lower in 1991 than in 1976. In areas of the highest SES, household income has increased markedly. In the top 5 percent of SES areas, household income has increased by \$12,555 (23 percent). In the lowest 5 percent of areas, household income has fallen by \$7,589 (23 percent). The income gap between the top and bottom 5 percent of CDs has almost doubled and has widened by \$20,144 (92 percent).

This significant pattern indicates that the forces making for increased income inequality across households exert a strong and systematic neighborhood effect. These forces have either impacted upon individuals, according to the neighborhood in which they live, and/or there is a continual geographic sorting process at work so that households which lose income are moving to poor neighborhoods, and households which gain income are moving to high-income neighborhoods.

The narrow dispersion of neighborhood household income in 1976, and the increased inequality since then, are so notable that it is perhaps worth reemphasizing both facts by comparing household income from the top and bottom 1 percent of CDs ranked by SES. In 1976, the weekly income gap between average household from the bottom 1 percent of CDs and the average household in the median CD was not large (Table 1, column 1). An additional part-time job for nine hours per week at \$12 per hour would close the gap of \$116.

Facts such as this explain why most Australians believed that they lived in a fairly equal society in terms of income and employment opportunities. By 1991, however, an additional part-time job could still close the gap but it would need to extend to 19 hours per week, an increase of 10 hours. The bottom and median neighborhoods are drifting apart, and the gap has increased from \$116 per week to \$230 (1991 prices).

Table 1 The Neighborhood Household Income Gap

Year	Weekly difference 1991 A\$			Change (%)		
	First percentile to median	Median to top percentile	Bottom to top percentile	First percentile to median	Median to top percentile	Bottom to top percentile
1976	116	442	558			
1981	175	430	625	51	-3	12
1986	227	620	844	30	44	35
1991	230	854	1084	1	38	28

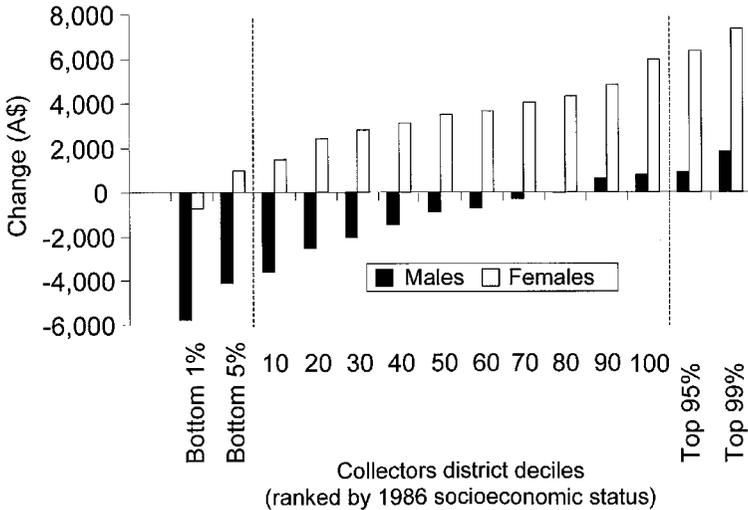
The increased income necessary to move from the average household income in the median CD to the average household income of a neighborhood in the top 1 percent of CDs is larger. The additional income cannot be obtained from the usual part-time job. In 1976, the additional weekly income needed was \$442, and by 1991 this had increased to \$854 a week. This is not a small step. In 1976, the additional income might be earned from an additional job which paid a little less than average weekly earnings. In 1991, the extra annual income required was \$44,408, an income level which far exceeds average weekly earnings.

The increase in income inequality across neighborhoods continued throughout the 15 years (Table 1, column 3) but the principal source of change differed. Between 1976 and 1981, increased inequality was generated by income falls in low SES neighborhoods. After 1981, the fall in income continued in low SES neighborhoods, but most of the increase in inequality was generated by income increases in high SES neighborhoods. The source of the increased inequality appears to have been shifting from large income falls in the low SES neighborhoods, relative to the median, to large increases in the high SES areas, relative to the median.

Neighborhoods and Male and Female Incomes

Figure 3 documents the change in the male mean annual income of CDs ranked by SES. Between 1976 and 1991, male annual income fell by \$4,102 (1991 A\$) in the 5 percent of CDs with the lowest SES. In

Figure 3 Change in Average Male and Female Income, 1976–1991 (1991 A\$)



the top 5 percent of CDs, average male income increased by \$916. As a result, the male mean income gap between CDs from the lowest and highest SES widened by \$5,019.

It is noticeable that only 20 percent of CDs from the highest SES areas experienced male income growth over the 15 years. In 80 percent of neighborhoods there were real income falls.

The income changes for women also exhibit a smooth pattern across CDs (Figure 3). The mean annual income substantially increased in all but the lowest 1 percent of CDs, ranging from a fall of \$726 for the 1 percent of CDs from the lowest SES areas to an increase of \$6,321 for the 5 percent of CDs from the highest SES. Women’s contribution to the income of a CD has offset the fall in male income, at least in part, in all but the lowest 1 percent of CDs.

Income distribution across neighborhoods has widened for both men and women. In 1976, the average male income in CDs from the lowest 5 percent of SES areas was 54.9 percent of the mean income in the highest five percent of SES areas. By 1991, this income ratio had fallen to 42.5 percent, a change not too dissimilar from the change in

the household income ratio. The income level of women in the lowest to the highest 5 percent of CDs, ranked by SES, has fallen from 78.8 percent to 57.8 percent—once again, a change similar to that of the household income ratio.

EMPLOYMENT CHANGES AND THE INCREASE IN INCOME INEQUALITY ACROSS NEIGHBORHOODS

The Change in Male and Female Employment/Population Ratios

For most households, the principal source of income is employment. The relatively narrow income dispersion across neighborhoods in 1976 was generated by similar employment/population ratios across neighborhoods. For men, there was no systematic variation in employment/population ratios across CDs ranked by SES (Figure 4). For women, the employment/population ratio in 1976 was marginally less in low SES CDs, and the employment/population gap between the lowest and highest 5 percent of neighborhoods was small (Figure 5).

In 1976, irrespective of where they lived, Australians shared much the same commitment and access to employment. A social observer could walk across the best and worst parts of Australian urban areas, and although the probability of meeting someone who was employed differed by neighborhood, there was no systematic change by SES. Income inequality across neighborhoods ranked by SES was generated by different levels of income from all activities and not from differences in the proportions of the population employed.

By 1991, circumstances had changed dramatically. Australian employment growth between 1976 and 1991 had been very poor. Unemployment increased from 4.7 to 9.5 percent. The poor employment performance is evident in the neighborhood data. In all neighborhoods, the employment/population ratio for men had fallen—by 9 percent in CDs from the top 5 percent of SES neighborhoods, and by 37 percent in CDs from the lowest 5 percent of SES neighborhoods.

The pattern of employment change for women is similar, but the contrast across neighborhoods is greater. For the top half of neighborhoods, the proportion of women employed increased approximately

Figure 4 Male Average Employment/Population Ratio, 1976 and 1991

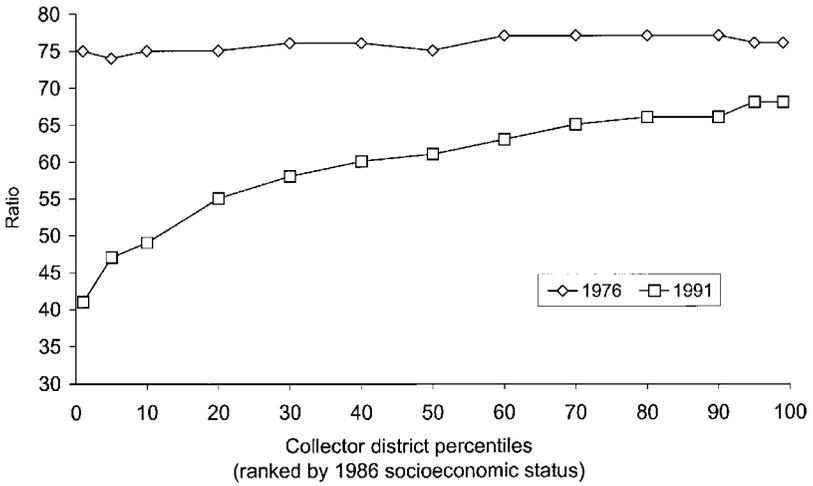
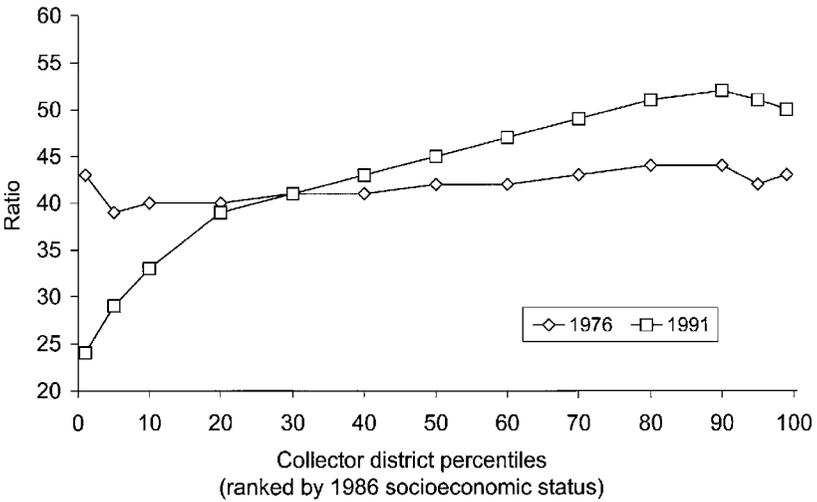


Figure 5 Female Average Employment/Population Ratio, 1976 and 1991



16.2 percent. The proportion fell 3.0 percent for the bottom half of neighborhoods, and 17.5 percent for the bottom decile. We are so used to seeing macrodata that indicate a rapid growth of part-time work for women and reading about women's increased labor force involvement, it is a shock to see that in 1991, and for half of Australian neighborhoods, the average proportion of women employed in the labor market is less than in 1976.

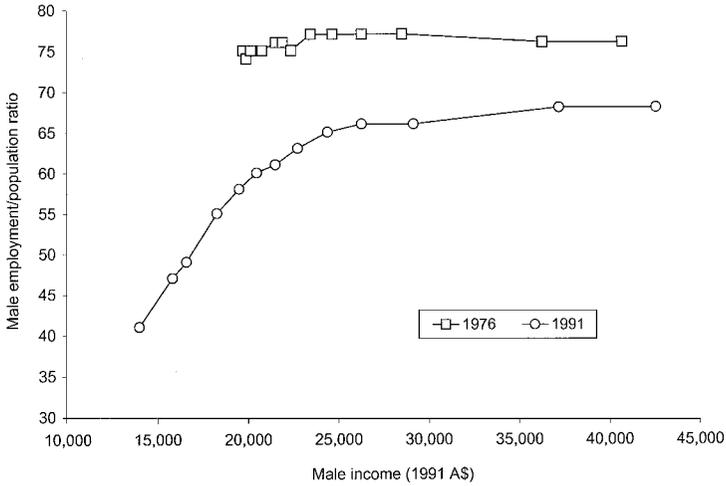
The growth in the women's employment/population ratio is concentrated in the high SES areas. By 1991 the probability that a woman would be employed if she lived in the top 5 percent of SES neighborhoods was 78 percent more than if she lived in the lowest 5 percent of SES areas.

It is apparent that employment/population ratios are now a major contributor to income variations across areas. For males, Australia has returned to the neighborhood employment patterns of the 1930s, with substantial pockets of non-employment. For women, however, the pattern is quite different (Gregory et al. 1987). In the 1930s, there was little variation of female employment/population ratio across neighborhoods ranked by SES. The pattern was much the same as in 1976. The loss of women's employment in low SES areas needs to be better understood.

The New Face of Australian Cities

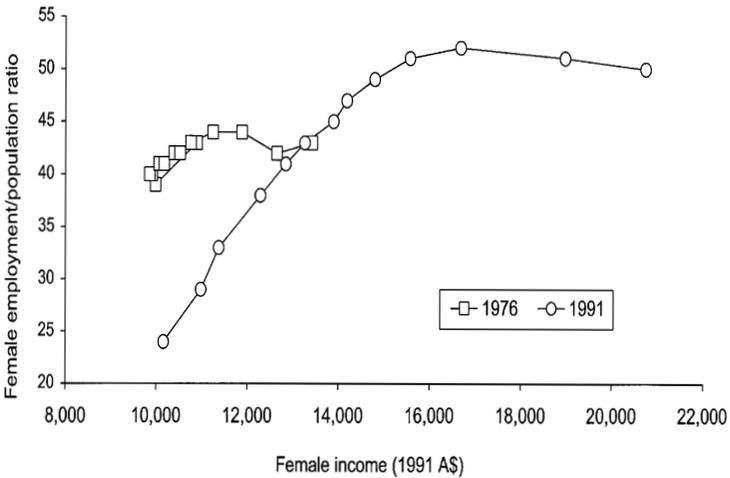
Neighborhoods in 1991 can be divided into two groups. For neighborhoods taken from the top 20 to 30 percent of CDs, ranked by SES, the employment/population ratio of men and women does not change significantly across neighborhoods, and there is no close relationship between employment level changes and income changes (Figures 6 and 7). Income dispersion within this group is related more closely to variations in wages and salaries and earnings from own business rather than variations in employment rates. For our social observer walking through the top 20 to 30 percent of neighborhoods, the level of employment has changed since 1976 but the pattern of employment across CDs has not. Employment/population ratios continue *not* to vary systematically across neighborhoods by SES and are not related to income changes.

Figure 6 Male Average Income and Male Employment/Population Ratios



NOTE: The points represent collector district percentiles, 1, 5, 95, and 99 and the average of male employment/population ratios and income, for deciles 0–10, 11–20, and 89–90. Data are taken from Figures 3 and 4.

Figure 7 Female Average Income and Female Employment/Population Ratios



NOTE: The points represent collector district percentiles, 1, 5, 95, and 99 and the average of female employment/population ratios and income, for deciles 0–10, 11–20, and 89–90. Data are taken from Figures 3 and 5.

For the remaining 70 to 80 percent of neighborhoods, employment rates now matter. The world has changed and there is now a clear association between employment changes and income changes. Within this group the translation of employment changes into income changes is similar for both men and women. On average, an increase in employment of 15 percentage points adds \$2,300 to male income (see Figure 6) and \$2,816 to female income of a neighborhood (see Figure 7).

The widening of the income distribution across neighborhoods is being driven by different influences at different ends of the income distribution. Employment is strongly associated with income in low-income neighborhoods but not in high-income neighborhoods.

Joblessness in low SES areas begins with teenagers (Figure 8). In 1991, the employment rate of teenagers in low SES areas is 80 percent of that of high SES areas, even though most teenagers in high-status areas are attending an education institution. Within the age group of 20–24 years, the employment rate of the bottom 5 percent of CDs has fallen to 63 percent of that of the top 5 percent of CDs, and it remains there until the age group of 45–54 years, where the employment rate falls further.

Figure 8 1991 Employment/Population Ratio for All Persons, by age, in Lowest and Highest 5% of SES Areas

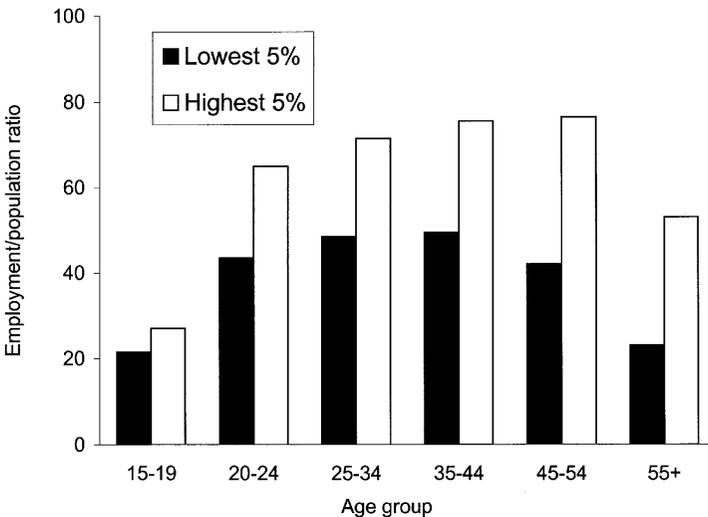


Table 2 Change in Employment and Real Income in Public Housing Neighborhoods and Other Neighborhoods in the Bottom 10% of SES Rankings, 1976–1991

	Public housing ^a (%)	Neighborhoods no public housing (%)	All (%)
Real Income			
Male	-29	-13	-18
Female	-2	17	13
Personal	-19	-1	-7
Household	-34	-12	-21
Employment			
Male	-42	-24	-29
Female	-30	-5	-11
Total	-37	-15	-22

^a Public housing neighborhoods: 50 percent or more of the neighborhood population residing in public housing. There are 207 public housing neighborhoods in the sample.

The pattern is the same for men and women. It is remarkable that in 5 percent of CDs from the low SES areas, almost one-half of the men 25–44 years are not engaged in employment.

CONJECTURES ON CAUSES OF INCREASED URBAN INEQUALITY AND POSSIBLE POLICY RESPONSES

Although we are concerned about the rapid growth in income inequality across neighborhoods, it is nevertheless true that there is no “right” degree of urban inequality. Nor is it clear that policy can efficiently and effectively achieve the urban inequality we might prefer. In the past, Australia has not placed high priority on policies specifically directed toward reducing urban inequality, and our experience of policy effectiveness in this area is limited. Policy has been more concerned with income distribution and unemployment among individuals. However, what can be done if we are dissatisfied with a situation where, in

1991, male unemployment is as high as 35 percent in many neighborhoods? How can we return to something approaching the distribution of neighborhood income in 1976? It is not possible to answer these questions without some understanding of the underlying causes of urban inequality growth.

Public Housing Policy

Increased neighborhood inequality and public housing policy have been closely intertwined. Approximately 5 percent of the Australian population live in public housing, which is usually found in areas of low SES. As unemployment has increased, access to public housing has become more focused on the poor and economically disadvantaged, and the economic circumstances of the typical public housing resident has changed considerably for the worse. Table 2 is confined to CDs located in the bottom 10 percent of SES neighborhoods. It shows over the 1976–1991 period the income change in public housing areas, which we define as CDs where the proportion of the population in public housing exceeds 50 percent. It is evident that public housing neighborhoods have done much worse than other low SES neighborhoods. Over this period, the average real income of a male in a public housing neighborhood fell 29 percent. The average real income of a male in nonpublic housing neighborhoods fell 13 percent. For women, average real income fell in public housing neighborhoods by 2 percent and increased by 17 percent in other neighborhoods.

Employment changes are also large and negative in public housing neighborhoods. Employment of men and women fell 42 percent and 30 percent, respectively. In nonpublic housing neighborhoods, employment fell 24 percent for men and 5 percent for women.

For most of the period, public housing policy increasingly grouped low-income people together and contributed to the falling income in low SES neighborhoods, but that is only a part of the story. In low-income neighborhoods without public housing, there are also substantial but lower employment and income falls.

As falls in employment and income of public housing neighborhoods have been so substantial, these neighborhoods have come to be seen as areas of social deprivation that are creating environments of poverty from which public housing tenants are finding it hard to

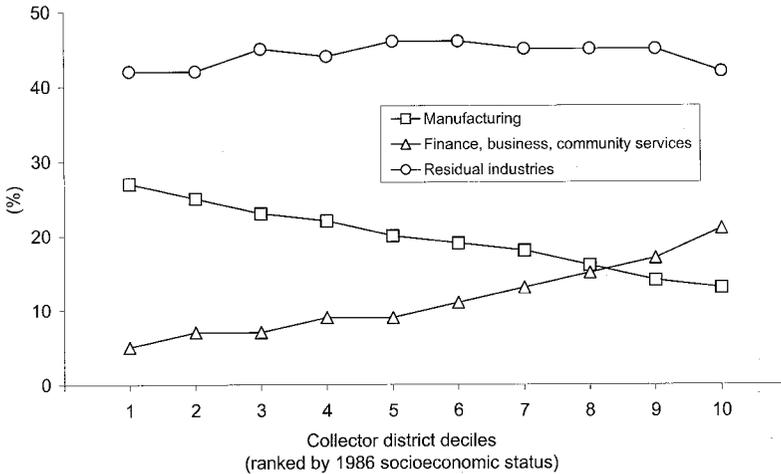
escape. Toward the end of the period, therefore, public housing policy began to change and slowly attempted to disperse tenants more widely in the community.

Manufacturing Decline

Another important influence generating increased urban inequality seems to be the rapid decline in manufacturing employment. A glance at the 1976 census data is sufficient to indicate that the rapid decline in manufacturing employment has generated important spatial shocks within cities. To illustrate this, we divide industry of employment into 12 two-digit Australian Standard Industrial Classification categories and focus on the male labor force. Similar considerations apply to the female labor force.

Figure 9 plots the proportion of men over 15 years of age who were employed in manufacturing within each CD in 1976. The horizontal axis orders CDs by their 1986 SES rankings. Individuals are classified by area of residence and not by location of employment.

Figure 9 Proportion of Males Employed by Industry Group, 1976



NOTE: The points represent the average of collector district deciles.

There is a distinctive pattern. In CDs from the bottom SES decile, 27 percent of all males over 15 years of age were employed in manufacturing. As the SES of the area increases, the manufacturing employment proportion falls declining to 13 percent in areas of high SES. Figure 9 also includes 1976 male employment in finance/business and community services. Five percent of men over 15 years of age from the bottom SES decile are employed in these industries. In areas of high SES, these two industries employ 21 percent of all men. Employment in the other nine industries, which we label the residual category, exhibit no noticeable and systematic pattern across SES areas.

Between 1976 and 1991 there was a large negative macroshock to manufacturing, as male manufacturing employment, as a proportion of the male population over 15 years of age, fell 37 percent. Labor market changes in other industries did not help the employment adjustment that was required. Employment in the residual industry category, as a proportion of men over 15 years, fell 14 percent and did not provide opportunities for net job growth. The pattern of decline was much the same irrespective of the SES ranking of the neighborhood. The only significant source of male employment increase, 29 percent, was in finance/business and community services, where employment change favored high SES areas. The net result is that the male manufacturing employment loss in low SES areas was not offset. Men who live in low SES areas were not able to make employment inroads into other industries.

It is perhaps not surprising that the job loss was spread unevenly across CDs and fell disproportionately in areas where manufacturing employees live; this is to be expected given the initial employment pattern. The interesting point is the spatial nature of the persistence of joblessness. What could be the mechanisms generating these outcomes? At this stage we do not know. One possibility is the following: suppose, as a rough approximation, that finance/business and community services tend to locate in the city center or in local shopping and business areas that are easily accessible to all potential employees. Transport routes are focused on these locations. Industries in the residual category are spread randomly throughout the community and therefore jobs are easily accessible as well. Factories, however, are clustered and spread unevenly throughout the city but are close to low SES areas where the majority of their workers live.

If this description is broadly correct, when factories close they create local areas of unemployment. There are residual industry jobs nearby but the total number is contracting. The expanding finance/business and community services sectors are located in areas which involve greater transport costs and, in addition, the job growth in this sector has not been sufficient to absorb manufacturing job losses. The persistence of the geographical dispersion of unemployment arises because of structural changes across industries, the geographic location of the lost jobs, and increased transport costs to gain access to new jobs.

The persistence elements of the analysis can be reinforced by other changes that are occurring in the economy. Suppose that at the same time factories are closing, welfare payments for those who cannot find employment are increasing in real terms, transport costs are increasing in response to the movements toward less subsidies, and real wages are falling among low-paid workers. Lower real wages offered to those at the bottom of the wage distribution may encourage some people to remain in a job-loss area and live on unemployment benefits—which in Australia have no time limit—rather than to accept employment at lower wages and incur higher transport costs. Furthermore, if house prices and rents respond to the lack of work in particular parts of the city, the effects of regional specific shocks will be increased. A wider variance of rents, reflecting a change in the ease of finding employment from each geographic base, may encourage people to stay unemployed and pay low rents rather than move to a high-rent area, give up unemployment benefits, and accept a low-paying job.

If mechanisms similar to this are generating spatial persistence of unemployment in areas where manufacturing workers used to live, a number of important points follow. First, the unemployment problem cannot be solved by macropolicies that do not create a job bias toward those areas. Second, trends in the key variables—increased transport costs, increased welfare payments relative to wages at the bottom of the wage distribution, and a falling proportion of employment in manufacturing—seem unlikely to be significantly reversed. Hence, in the absence of some intervention, unemployment may continue to persist on a geographical basis.

General Macro Influences

Increasing inequality may also be the result of major structural problems in the macroeconomy—such as emerging inflation or balance of payment difficulties—that lead to restrictive macropolicies and insufficient job creation. Irrespective of the initial nature of the adverse macroemployment shocks, those with more skills find jobs quickly and displace the least skilled, who eventually become unemployed. The unemployed gradually sort themselves geographically so that eventually more and more of the jobless live in depressed areas where the rents are lowest.

This explanation would suggest that the correlation between the decline in manufacturing employment and job loss by area is of no special significance. When the economy recovers and sufficient jobs are created, the updraft draws individuals from low SES areas back into employment and back into higher income levels.

One piece of evidence that might support this view is that, according to census data, approximately 40 percent of males living in a CD were not resident there five years earlier. This mobility raises the possibility that males who lose their jobs in manufacturing leave the CD and are replaced by others who are unemployed but not necessarily as a result of manufacturing decline. To confirm this we still need to know the SES status of the areas where individuals move to and come from, but the census does not provide that information at the detailed level at which this analysis is conducted. This is an important piece of missing data.

If individuals move a small distance to an area similar to the one they left, that might be considered as being the same as no mobility. The economic and social environment of those that moved, and their propensity for obtaining employment, may not have changed. If individuals leave to find jobs in better areas, we need to ask what it is about the low status areas where manufacturing employees used to live that leads to unemployment persistence.

It is unlikely that the unemployment increase since 1976 can be attributed to only one cause and be fully explained by a simple model. The facts, however, suggest that there are significant regional shocks within cities and these shocks may lead to unemployment persistence. If so, then a new research agenda is needed—one which combines the

textbook macroanalysis of unemployment with regional specific shocks and persistence.

Relative Wage Flexibility

Some may argue that the best policy response is to increase labor market flexibility so that wages can fall in low SES areas and thereby create jobs. It is not known how much wages might need to fall, but to increase employment of the bottom 5 percent of SES areas back to 1976 levels, relative to high SES areas, there would need to be at least a 44 percent increase in male employment and a 70 percent increase in female employment. It appears likely, therefore, that a substantial wage fall might be required. This raises a number of problems. First, it takes time to create jobs so that the short-run wage fall might be substantial—so substantial, in fact, that individuals may prefer not to work and be supported by unemployment benefits and other welfare payments, and perhaps a range of black economy activities.

If wage reductions were to occur, yet low employment rates persisted in low SES areas, it might be expected that governments would eventually react and reduce benefit levels, relative to low wages. Labor market-related benefits are the main source of income for most individuals in low SES areas, and any reduction must inevitably increase poverty and widen income distribution further. It is obvious why governments and communities are reluctant to go down the path of substantial reductions in wages and benefits, and why it is often suggested that it might be better to try and increase the employability of individuals in low SES areas rather than reduce their potential wage.

Education Policy

Many countries, including Australia, have attempted to use an expansion of education and skill training to offset growing income inequality and unemployment among the low paid. Students in Australia have been offered means-tested living allowances for high school and tertiary education and interest-free loans to pay university fees. Tertiary and high school places have increased substantially. Indeed, over the last decade and a half, Australia has embarked upon one of the most ambitious education programs in the OECD.

This education expansion has had a large impact on the average neighborhood from areas of median SES. Between 1976 and 1991, the proportion of the population with degrees increased from 3.7 to 14.7 percent and the proportion of the population without qualifications fell from 66 to 45 percent. Yet despite this large increase in education of the potential workforce, male unemployment in median neighborhoods has risen from 4.4 to 13.0 percent. In addition, average income per adult has risen by less than one-half of 1 percent per year.

Income and employment outcomes may have been worse without education increases, but it appears, nevertheless, that increased education levels have not been sufficient to offset significant employment losses or to generate significant income increases for the median neighborhood. Education and skill training may primarily determine who gets jobs and may have very little influence on the number of jobs available or average rates of pay.

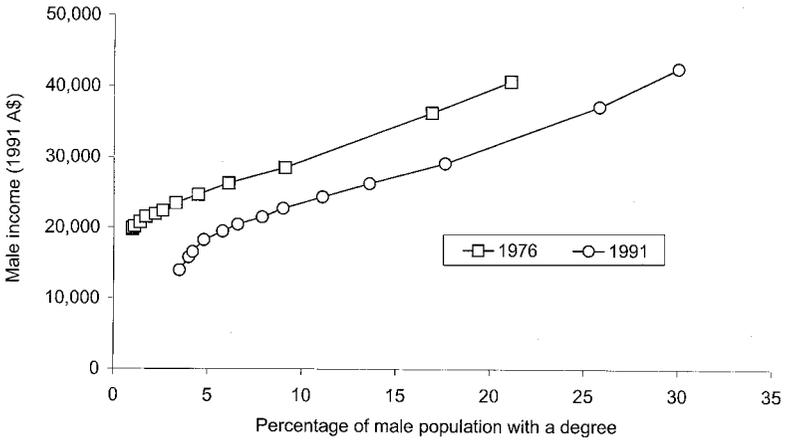
A similar sober assessment also appears inescapable from a comparison of the changing interrelationship between education levels and income inequality among neighborhoods. Various measures of the education levels of a neighborhood's residents are highly correlated, and for our analysis we use the proportion of residents 15 years and over with a degree.

In 1976, there was a strong positive association between the average education level of a neighborhood and the income of its residents. On average, a 1-percentage-point increase in numbers of men holding degrees was associated with additional neighborhood income of \$1,000 (Figure 10). For women, the relationship was \$500 for each additional percentage-point increase in the proportion of the female population with degrees (Figure 11). Among neighborhoods, as among individuals, higher education brings higher income.

It is noticeable, however, that in 1976 there is no systematic relationship between employment-population ratios and education for either men or women. More education is associated with more income but not because employment is increased. This is a restatement of the fact that in 1976, employment opportunities were distributed equally across neighborhoods ranked by SES.

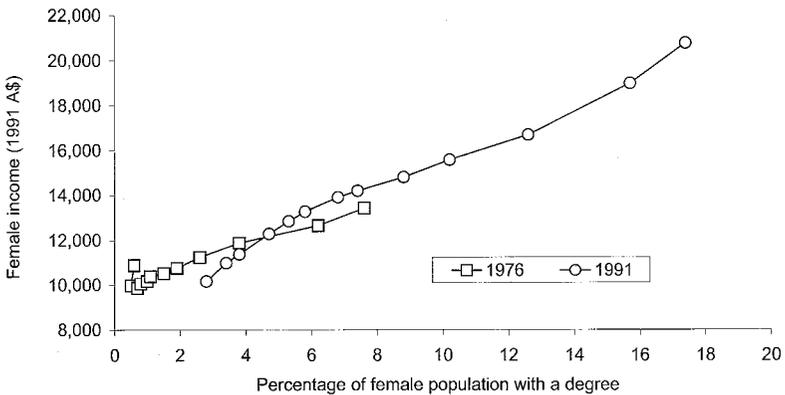
By 1991, the relationships have changed a great deal. For men, more education is still positively associated with more income, but the relationship has shifted so that for any given proportion of the popula-

Figure 10 Male Income and Proportion of Male Population with a Degree



NOTE: The points represent collector district percentiles, 1, 5, 95 and 99 and the average of male income and the proportion of the male population with a degree, for deciles 0-10, 11-20 89-90.

Figure 11 Female Income and Proportion of Female Population with a Degree



NOTE: The points represent collector district percentiles, 1, 5, 95 and 99 and the average of female income and the proportion of the female population with a degree, for deciles 0-10, 11-20 to 89-90.

tion with degrees, the annual income level has fallen by about \$8,000. If the employment–education relationship can be thought of as a causal one, then in order to achieve the same level of male income as in 1976, a neighborhood needs to achieve a higher education level. Consider a neighborhood from a low SES area: to maintain male income, this neighborhood needed to increase the proportion of its male population with degrees by 6 percentage points between 1976 and 1991. The actual increase was 2.5 percentage points, hence the fall in male income. In high SES areas, the increase needed in the proportion with degrees was around 8 percentage points. The actual increase was 9 percentage points, hence the increase in male income.

This shift in the education–income relationship is very important. On the basis of the 1976 relationship between the incidence of degrees and the income of a neighborhood, the increased education attainment of the average neighborhood within the bottom five percent of CDs should have brought about an income increase of \$3,500. In fact, there has been a fall of \$6,000. The \$9,500 gap clearly illustrates the importance of the change.

The principal source of the shift in the male education–income relationship is a shift in the employment–education relationship. For neighborhoods from the bottom 70 percent of SES areas, the education–employment relationship has moved down but, in addition, there is now a strong neighborhood relationship between less neighborhood education and less neighborhood employment—a relationship that did not exist in 1976. The lower the male education level of a neighborhood, the lower the male employment–population ratio. Education not only affects income, as it always has, but now it also affects the employment–population ratio. Poor neighborhoods are now twice disadvantaged by low education levels.

For neighborhoods from the top 30 percent of SES areas, further education does not bring further employment. Nothing has changed for these neighborhoods with respect to changes in education and changes in employment. But the education–employment relationship has also shifted downward, so at each neighborhood education level there is 15 percentage points less employment.

Labor market changes for women are similar to those for men in all but one respect—the education–income relationship has changed little since 1976 except in areas of low SES, where additional degrees

among residents have not brought neighborhood income increases. But, unlike the male relationship, the large increase in women's income across all but the low SES areas is associated with the large increase in education. There has been no systematic shift down in the employment–income curve as in the male labor market.

There is a clear dichotomy between neighborhoods. For the top 30 percent of SES areas, income has fallen for each education level for men but increased for women. The relationship between changes in income and changes in education, however, has not shifted for this group.

For the remaining 70 percent of neighborhoods, the lower the education level the greater the income fall. Employment and education are now associated and hence there is less income at each education level.

To conclude, we look at the change in the distribution of education levels across neighborhoods to assess the general impact of the large increases in education levels of the potential workforce. In 1976, 10 percent of all residents 15 years of age and over who resided in CDs from the top 5 percent SES possessed degrees; now the proportion is 20 percent. In the lowest 5 percent of CDs, the proportion of the population with degrees has increased from 0.5 percent to 3 percent. The absolute gap in the degree distribution between areas has widened, and the increased incidence of degree qualifications has been disproportionately concentrated in CDs with high SES. Neighborhoods have not become more equal. For every 10 new degree holders in the top 5 percent of CDs, there has been an additional 3 in low SES areas. A similar pattern is evident if different measures of education are used.

Areas of low employment and low income have not been untouched by the expansion of education. Education levels have increased across all neighborhoods, but two major problems have emerged. First, the increase in education in absolute terms has been greater in high SES areas so that inequality has increased. Second, the relationship between employment and education levels has shifted in low SES areas such that a given level of education now delivers much less income and the move to a more disadvantageous relationship has dominated the improvement in the education level.⁸

It is a well-known finding in education research that school outcomes are related to the education level of the parents of the students who attend the school. The widening parental education gap across

neighborhoods suggests that in order to expand the education opportunities for young Australians, special attention should be given to education policies directed toward schools in low SES areas.

CONCLUSION

Since the early 1970s, the Australian economy has had a major problem with job creation. According to the census, the proportion of men aged 15–64 employed in a median neighborhood is 19 percent less than in 1976. The proportion of women employed is 1 percent more. The shortage of jobs has not been rationed evenly throughout our society. Job loss and income falls are concentrated in low SES neighborhoods, and job growth and income rises are concentrated in neighborhoods of high SES.

Between 1976 and 1991, the lowest 1 percent of neighborhoods, based on a 1986 SES ranking, have lost 45 percent of their employment and 23 percent of their household income, and male unemployment has increased from 6.4 to 28.1 percent. The contrast with areas of high SES is marked: in the highest SES areas, employment has fallen marginally, household income has increased by 31 percent, and male unemployment has increased, but only to 4.8 percent. The proportion of women employed in high SES areas now exceeds by 20 percent the proportion of men employed in low SES areas.

To lose employment and suffer significant income losses are bad outcomes for anyone, but does it matter that these undesirable outcomes increasingly possess a spatial component? It is sometimes suggested that it does not and that nothing is gained by knowing that it is people who live in poor neighborhoods who are increasingly not at work, that part-time jobs are going to young people and women who live in high SES neighborhoods and that income is rising in the best SES neighborhoods but falling in poor neighborhoods. Our intuition suggests that neighborhoods do matter.⁹ It seems likely that the greater the economic polarization within our cities the less equal are the opportunities for young people and the more likely that bad neighborhood pathologies will emerge. But there is not widespread agreement on these matters among Australian researchers.

But what should be done? It is not easy to know. There has not been a strong Australian tradition of thinking about economic policy and neighborhoods and it is not always easy to move from thought patterns that revolve around individuals or the macroeconomy to thought patterns that stress geography. There is also not widespread agreement as yet whether the growth of inequality across areas is just the natural outcome of more inequality among individuals, the impact of concentration of those individuals within a location, or whether the nature of the geographical areas is contributing to the inequality growth.

There is always more to be done. We do not know enough about social and geographical mobility, the role of job-finding networks and changing income, and employment opportunities over the lifetimes of people who live in poor neighborhoods.

Notes

R.G. Gregory is Professor of Economics and Head of the Economics Program, Research School of Social Sciences, Australian National University; Dr. Boyd Hunter is Research Fellow, Centre for Aboriginal Economic Policy Research, Australian National University. Cathy Baird and Eva Klug provided invaluable assistance in preparing the paper. This research was funded in part by the former Department of Housing and Regional Development. All dollar values in this chapter are in Australian dollars.

1. There is no consensus, however, as to the source of these large changes. They seem to be related to shifts in labor demand away from men and toward women workers and away from the unskilled towards those with higher education levels. There are some areas of agreement among researchers as to what is *not* driving the increased inequality. It does not seem to be the case that inequality among individuals is being driven primarily by the decline in manufacturing, the growth of trade with Asia, or immigrant flows of low skilled labor. We are more agnostic.
2. While there is a general consensus in this research that market incomes have become more unequal, the situation with respect to other measures of income is less clear. Government intervention in Australia has a strong equalizing component. Harding (1995) has estimated that the ratio of market incomes between the top and bottom 20 percent of the Australian population is 12.5:1. This reduces to 4.9:1 once transfer payments are taken into account, 3.8:1 after income tax, and 2.9:1 after government expenditure on services such as education and health.
3. Unemployment at August each census year taken from the Labour Force Survey.
4. CDs were omitted from the panel if the total population was less than 50 to avoid the sampling error deliberately introduced by the Australian Bureau of Statistics (ABS) to protect the confidentiality of persons in the neighborhood. In each suc-

cessive census, new CDs are added and in some circumstances the boundaries of CDs are changed. Our sample is a fixed number of CDs with unchanging boundaries that are to be found in each census plus a small number where the CD may have been divided into two. We begin with a list of CDs from the 1986 Census, and if there was more than one CD that corresponded to the 1986 CD, the first was taken to be representative of the 1986 CD.

5. As a measure of socioeconomic status, we use the Urban and Rural Indexes of Relative Advantage, published by the Australian Bureau of Statistics (1990). The Indexes are calculated by the application of principal components. The relevant variables include data such as family income greater than \$50,000, the proportion of CD residents with degrees, the occupational distribution of the employed workforce, and the number of bedrooms per household.
6. In 1976, our sample of CDs represented 69 percent of all Australian CDs. By 1991, the sample had fallen to 52 percent. The average employment and income levels in new CDs in outer suburbs are a little higher than our sample means, so our sample understates slightly the growth in average employment and income over the 1976–1991 period, but our estimates of increased inequality are not affected (Hunter 1996).
7. The poverty of the U.S. ghettos is compounded by the concentration of disadvantaged Americans of African descent (see Wilson 1987). Another contributing factor is the U.S. Federal system that places emphasis on local taxes as a revenue source. The Australian federal system, in contrast, is a force for equalizing income and government services across neighborhoods.
8. The very large expansion of education must have affected the quality of education, and that may well have locational aspects. There is evidence indicating high failure rates in areas of low SES.
9. In a recent U.K. study, Gregg and Wadsworth (1994) show that the most successful method utilized by unemployed males to find a job is through friends and contacts. The utilization rate of this method is not the highest but it has the highest success rate. Among males, one-third of jobs are found this way; among women, one-quarter. Montgomery (1991) estimates that 50 percent of all workers currently employed in the U.S. found their jobs through friends and relatives.

References

- Australian Bureau of Statistics. 1990. *Socio-Economic Indexes for Areas*. Cat. No. 1356, Canberra.
- Borland, J., and R. Wilkins. 1996. "Earnings Inequality in Australia." *Economic Record* 72: 7–23.

- Case, A., and Larry Katz. 1991. "The Company You Keep: The Effects of Neighbourhood on Disadvantaged Youth." Working paper 3705, National Bureau of Economic Research, Washington, D.C.
- Gregg, Paul, and Jonathon Wadsworth. 1994. "How Effective Are State Employment Agencies? Job Centre Use and Job Matching in Britain." Working paper No. 476, Centre for Economic Performance, London School of Economics.
- Gregory, R.G. 1993. "Aspects of Australian Living Standards: The Disappointing Decades 1970–1990." *Economic Record* 69(204): 61–76.
- Gregory, R.G., and B. Hunter. 1995. *The Macro-economy and the Growth of Ghettos and Urban Poverty in Australia*. Discussion paper no. 325, Centre for Economic Policy Research, Australian National University.
- Gregory, R.G., V. Ho, L. McDermott, and J. Hagan. 1987. "The Australian and U.S. Labour Markets in the 1930s." In *Interwar Unemployment in International Perspective*, B. Eichengreen and T.J. Hatton, eds. London: Kluwer Academic Publishers.
- Harding, A. 1995. "Non-Cash Benefits and the Measurement of Poverty." National Centre for Social and Economic Modelling. Paper presented at the 24th Conference of Economists. The Economic Society of Australia, Adelaide, September.
- Hunter, Boyd. 1996. *Explaining Changes in the Social Structure of Employment: The Importance of Geography*. Discussion paper No. 67, Social Policy Research Centre, University of New South Wales.
- Montgomery, Holmes D. 1991. "Social Networks and Labor-Market Outcomes: Towards an Economic Analysis." *American Economic Review* 81(5): 1408–1417.
- Saunders, Peter. 1994. *Welfare and Inequality. National and International Perspectives on the Australian Welfare State*. Cambridge University Press, Melbourne.
- Wilson, William J. 1987. *The Truly Disadvantaged*. Chicago: The University of Chicago Press.

Part III

Working Time in Comparative Perspective

Volume I

Patterns, Trends, and the Policy Implications for Earnings Inequality and Unemployment

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2001

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Cover design by J.R. Underhill.
Index prepared by Nancy Humphreys.
Printed in the United States of America.