Labour Market Outcomes:

A Cross-National Study

McMaster University

DEPARTMENT OF ECONOMICS

THE MACRO ECONOMY AND 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 (US) . 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 1992, Saunders 1994).[1] The evidence seems to suggest that the change in inequality is less than in the US and the United Kingdom (UK).[2]

Since the 1990 Social Justice Strategy Statement (Hawke and Howe 1990) there has also been an increase in research on locational disadvantage. These studies, which usually concentrate on a small number of geographical areas, document how socio-economic disadvantages are exacerbated by where people live. They focus on the level of access to affordable housing, employment, training and education opportunities and physical and social infrastructure.

The best known locational studies include Local Area Research Studies, which considered the experience of ten disadvantaged localities, and The Australian Living Standards Study, which examined the living standards of families in a more diverse group of Local Government Areas. Other publications include the report of The National Housing Strategy (1991-92) and a series of studies on Locational Disadvantage.[3]

The locational studies suffer from two disadvantages. First, they are limited in geographical scope. Second, they do not document changes over time. Thus it is not known how general are the findings nor how much circumstances have changed.[4]

This paper overcomes these problems. It utilises Census data to emphasise *changes* in income and employment inequality within Australian cities over a fifteen year period 1976 to 1991. It covers over a third of the Australian population. But it too suffers from disadvantages. The Census data cannot be used to explore all issues in depth. There is no information on the provision of government services or the complexity of relations between different levels of government. The data on population mobility is also inadequate.

The emphasis in this study is on exploring the advantages of Census data, namely its ability to document income and employment changes through time and across as much of Australia as is desired. We provide the background against which the Census data, which has not been used in this way before, might be used to document in subsequent analysis the growth and extent of distressed areas.

The paper is structured as follows. Part I briefly describes the macro environment within which urban poverty has increased. Part II documents changes in neighbourhood income inequality between the Census dates 1976 and 1991. Part III demonstrates the increased employment inequality across neighbourhoods. Part IV conjectures as to the causes of increased inequality.

Policy comments are presented in Part V. Part VI offers concluding remarks.

I The Macro Environment and Increased Neighbourhood Inequality

Some parts of the Australian labour 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 fifteen years of insignificant growth, average real wages have begun to increase again. Although there have been other good changes in the Australian labour market poor outcomes dominate and four adverse features stand out in the period 1976 to 1995.

●   First, employment opportunities for men and women seeking full-time work have not kept pace with population growth rates. Some fall 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 per cent which is far above what might have been expected (Figure 1). Unemployment among full-time male workers at April 1996 is 9.7 per cent.

Figure 1. Full-time Employment-Population Indexes
Male and Female
1966-1995
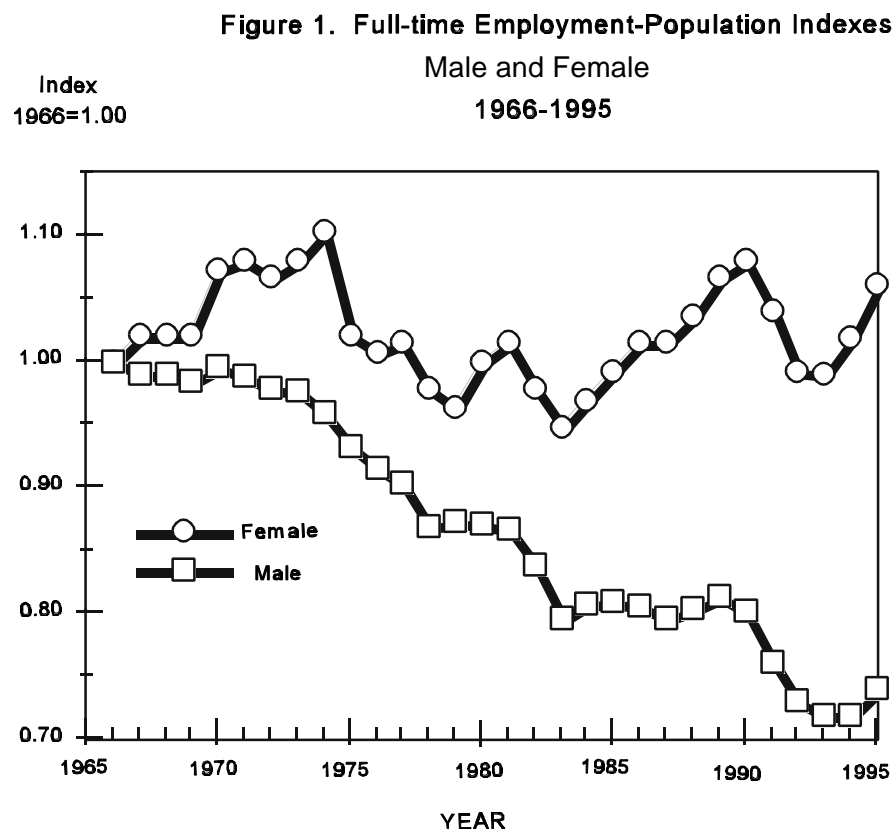
Young women have also extended their involvement in education but with the reduction in the birth rate, more divorces, postponement of marriage and more women seeking careers in paid employment it might be expected that full-time employment would increase. But at August 1995 the proportion of women employed full-time is only 5.0 per cent more than at August 1976. Unemployment among female full-time workers has increased from 4.3 per cent in 1976 to 8.9 per cent at April 1996.

- The second adverse feature supports the belief that much of the full-time employment reduction was involuntary. 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.

- Third, 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 1995 the spell length had increased to 54 weeks.

- Fourth, 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 analyse 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.

II The Growth of Income Inequality Within Cities

The data

Australia has always had neighbourhoods that are clearly demarcated by income and socio-economic status. Nevertheless, the undesirability and adverse effects of low income neighbourhoods are not stamped on our national consciousness to the same extent that they are often stamped on the consciousness of citizens of other countries. US 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). In Australia the notion of distressed areas is not generally associated with the physical decay and decline of areas but more with the growth of joblessness.

We believe that income and employment gaps between our best and worst neighbourhoods are not as great as the gaps in many major OECD cities.[5] We also believe that Australia is not in danger of creating urban problems to the same degree as the US[6] but, after the data were assembled, we were surprised at the extent of the changes for the worse that have occurred since the mid 1970s.

The Census is the only consistent data base available to trace changes in neighbourhood inequality over a significant period of time. There are four Census collections which include income data that could be used to measure changes in neighbourhood income distributions. Each Census—1976, 1981, 1986 and 1991—coincided with an economic recession. By some measures, the depth of the recessions at each Census are not too dissimilar, but it is noticeable that the rate of unemployment is subject to an upward trend: 4.4, 5.6, 8.0 and 9.5 per cent respectively.[7] Since unemployment is higher at each successive date we cannot use Census data directly to analyse income distribution effects of economic cycles and therefore we emphasise the trend from a comparison of 1976 with 1991.

To conduct the neighbourhood 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 which 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.[8] The panel consists of 9483 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 4500 (see Gregory and Hunter 1995a).

Although the Census provides by far the best data they are not ideal. 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.[9] Finally, the last Census maps economic circumstances at 1991. More recent data would probably show that the trends we are describing have continued but we will

not know until the data from the 1996 Census are released sometime in 1997 or 1998.

The geographical analysis is based on CDs ranked by socio-economic status (SES). We use the measure of SES calculated by the Australian Bureau of Statistics for 1986 (1990).[10] Each CD preserves its SES ranking over the fifteen years. None of the results are affected by the choice of the Census year on which the SES ranking is based.

Neighbourhoods and Household Income

We begin by discussing the marked change in the dispersion of annual household[11] income[12] across neighbourhoods. In 1976, the ratio of the mean household income of CDs from the lowest to the highest 5 per cent of SES areas was 60.4 per cent. Within the space of 15 years the ratio had fallen to 37.9 per cent. 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 polarisation of household income across Australia. The poor are increasingly living together in one set of neighbourhoods and the rich in other set. The economic gap is widening.[13]

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 ranking. The first two bars on the left measure the change in mean income over the 1976 to 1991 period for the one and 5 per cent of CDs with the lowest SES. The last two bars on the right measure the change in mean income from the top five and one per cent of CDs. All other bars refer to the change in annual household income averaged within each CD decile. Average income is in 1995 prices. Each decile includes approximately 500 000 adults.

Figure 2 : Change in Average Household Income
1976-1991
(1995 Prices)
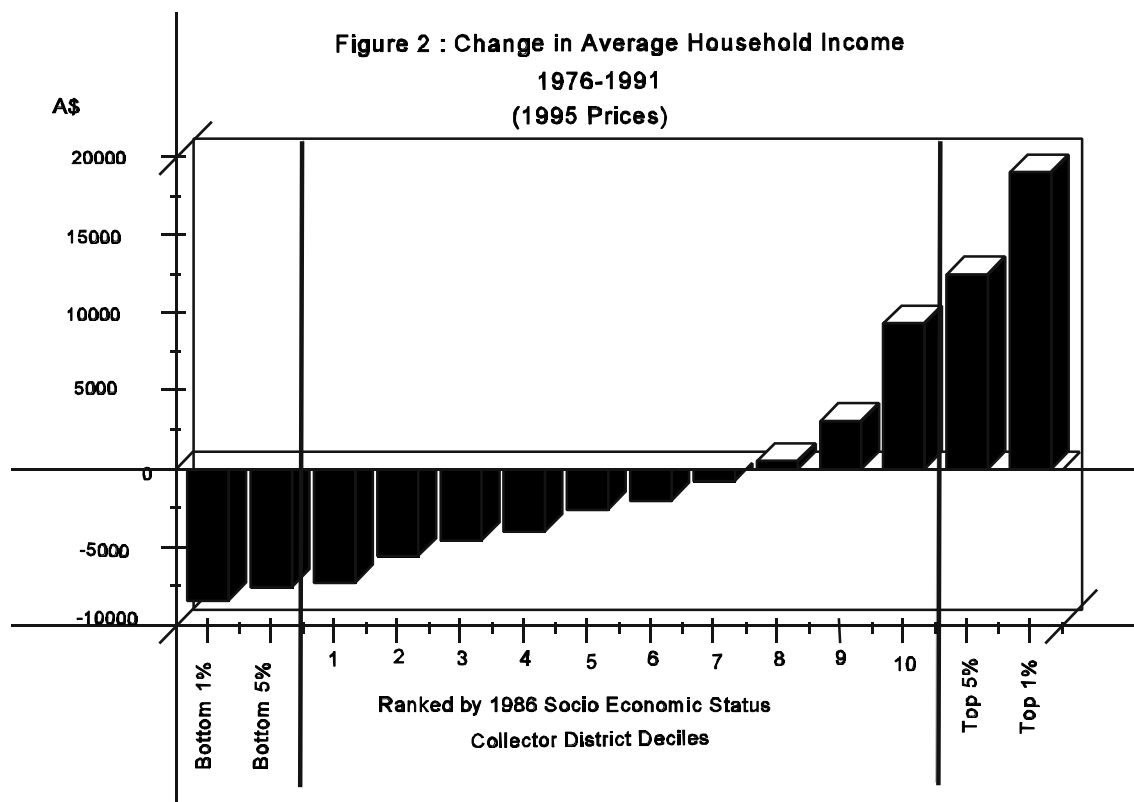
As we move across the CDs from low to high SES areas, the pattern of income changes is quite smooth. For the bottom 70 per cent of CDs average household income has fallen in absolute terms and is lower in 1991 than in 1976. In areas of the highest SES household income has increased markedly. In the top five per cent of SES areas household income has increased by $12 555 (23 per cent). In the lowest five per cent of areas household income has fallen by $7589 (23 per cent). The income gap between the top and bottom 5 per cent of CDs has almost doubled and has widened by $20 144 (92 per cent).

This very significant pattern indicates that the forces making for increased income inequality across households exert a strong and systematic neighbourhood effect. These forces have either impacted upon individuals, according to the neighbourhood 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 neighbourhoods and households which gain income are moving to high income neighbourhoods.[14]

The narrow dispersion of neighbourhood household income in 1976, and the increased inequality since then, are so notable that it is perhaps worth re-emphasising both facts by comparing household income from the top and bottom one per cent of CDs ranked by SES. In 1976, the weekly income gap between average household income from the bottom one per cent of CDs and the average household in the median CD was not large (Table 1, Column 1). An additional part-time job for 9 hours per week at $12 per hour would close the gap.

Facts such as these 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 neighbourhoods are drifting apart and the gap

has increased from $116 per week to $230 (1995 prices).

Table 1. The neighbourhood household income gap

| | 1995 $A . . . . | | | Per Cent 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	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 neighbourhood in the top one per cent 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 neighbourhoods continued throughout the 15 years (Table 1, Col. 3) but the principal source of change differed. Between 1976 and 1981 increased inequality was generated by income falls in low SES neighbourhoods. After 1981, the fall in income continued in low SES neighbourhoods but most of the increase in inequality was generated by income increases in high SES neighbourhoods. The source of the increased inequality appears to have been shifting from large income falls in the low SES neighbourhoods, relative to the median, to large increases in the high SES areas, relative to the median.

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 $4102 (1995 $A) in the five per cent of CDs with the lowest SES. In the top five per cent 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 $5018.

Figure 3 : Change in Average Male and Female Income
1976-1991
(1995 Prices)
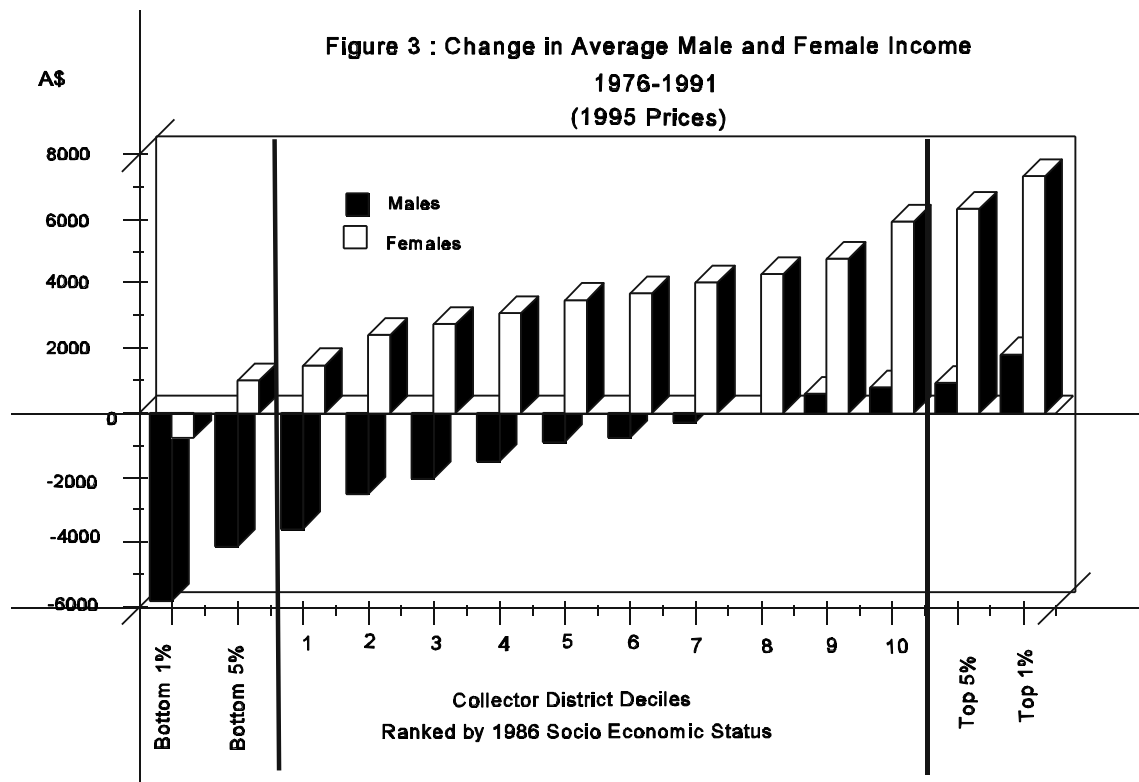
It is noticeable that only 20 per cent of CDs from the highest SES areas experienced male income growth over the 15 years. In 80 per cent of neighbourhoods there were real income falls.

The income changes for women also exhibit a smooth pattern across CDs (Figure 3) but, in this instance, the mean annual income substantially increased in all but the lowest one per cent of CDs ranging from a fall of $726 for the one per cent of CDs from the lowest SES areas to an increase of $6321 for the five per cent 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 one per cent of CDs.

Income distribution across neighbourhoods has widened for both men and women. In 1976 the average male income in CDs from the lowest five per cent of SES areas was 54.9 per cent of the mean income in the highest five per cent of SES areas. By 1991 this income ratio had fallen to 42.5 per cent; a change not too dissimilar from the change in the household income ratio. The income level of women in the lowest to the highest five per cent of CDs, ranked by SES, has fallen from 78.8 per cent to 57.8 per cent. Once again a change similar to that of the household income ratio.

III Employment Changes and the Increase in Income Inequality Across Neighbourhoods

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 neighbourhoods in 1976 was generated by similar employment-population ratios across neighbourhoods. 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 per cent of neighbourhoods was small (Figure 5).

Figure 4 : Male Average Employment-Population Ratio 1976-1991
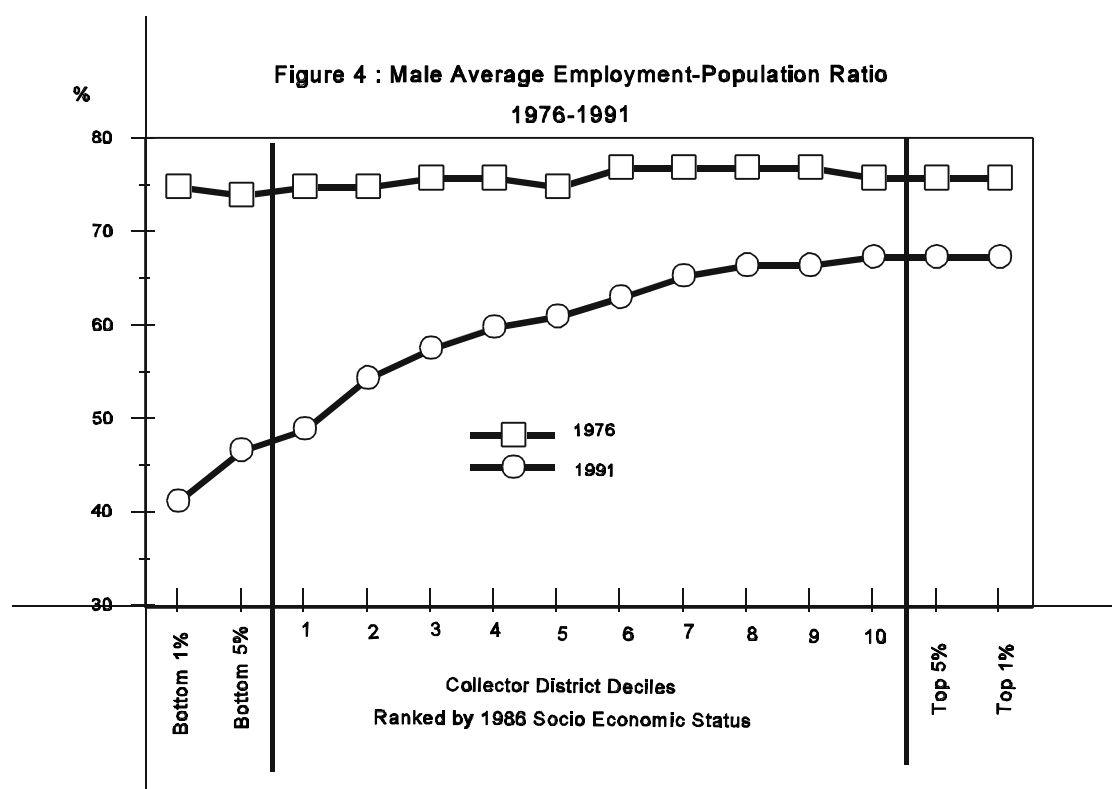
In 1976, irrespective of where they lived, Australians shared much the same commitment and access to employment. A social observer could walk across the best and worst parts of Australian urban areas and although the probability of meeting some one who was employed differed by neighbourhood there was no systematic change by socio-economic status. Income inequality across neighbourhoods 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 per cent.[15] The poor employment performance is evident in the neighbourhood data. In all neighbourhoods the employment-population ratio for men had fallen: by 9 per cent in CDs from the top 5 per cent of SES neighbourhoods and by 37 per cent in CDs from the lowest 5 per cent of SES neighbourhoods.

The pattern of employment change for women is similar but the contrast across neighbourhoods is greater. For the top half of neighbourhoods the proportion of women employed increased approximately 16.2 per cent. For the bottom half of neighbourhoods the proportion fell by 3.0 per cent. For the bottom decile the fall was 17.5 per cent. We are so used to seeing macro data which indicate a rapid growth of part-time work for women, and reading about women's increased labour force involvement, that it is a shock to see that in 1991, and for half of Australian neighbourhoods, the average proportion of women employed in the labour market is less than in 1974.

The growth in the women's employment-population ratio is concentrated in the high SES areas. By 1991 the probability that a women would be employed if she lived in the top 5 per cent of SES neighbourhoods was 78 per cent more than if she lived in the lowest 5 per cent of SES areas. The next step in the research agenda will be to explain this change. Some factors to consider would be the growth in numbers of sole parents—who tend not to be employed and who are increasingly concentrated in low SES neighbourhoods, the very marked tendency for the partners of unemployed men to also be unemployed, and the potential, if any, for non reporting of employment activities among those dependent on welfare.
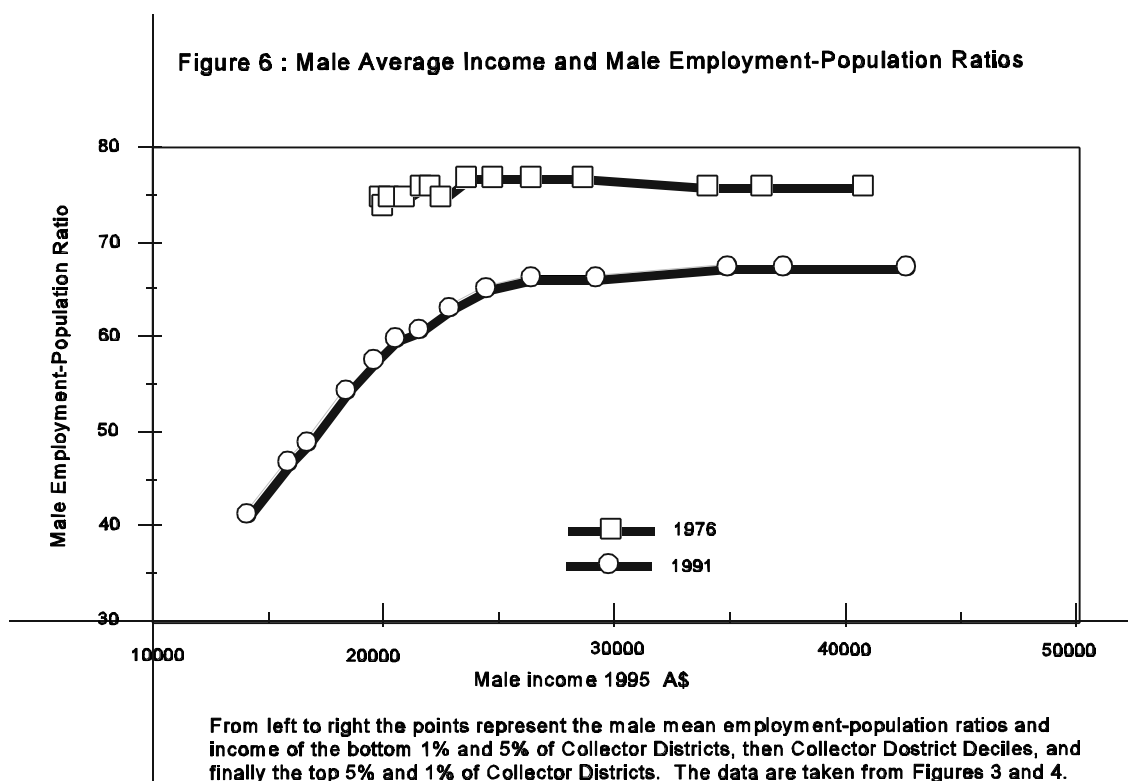
It is apparent that employment-population ratios are now a major contributor to income variations across areas. For males, Australia has returned to the neighbourhood employment patterns of the 1930s, with substantial pockets of non-employment. For women however, the pattern is quite different (Gregory et al 1987). In the 1930s there was little variation of female employment-population ratio across neighbourhoods 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.
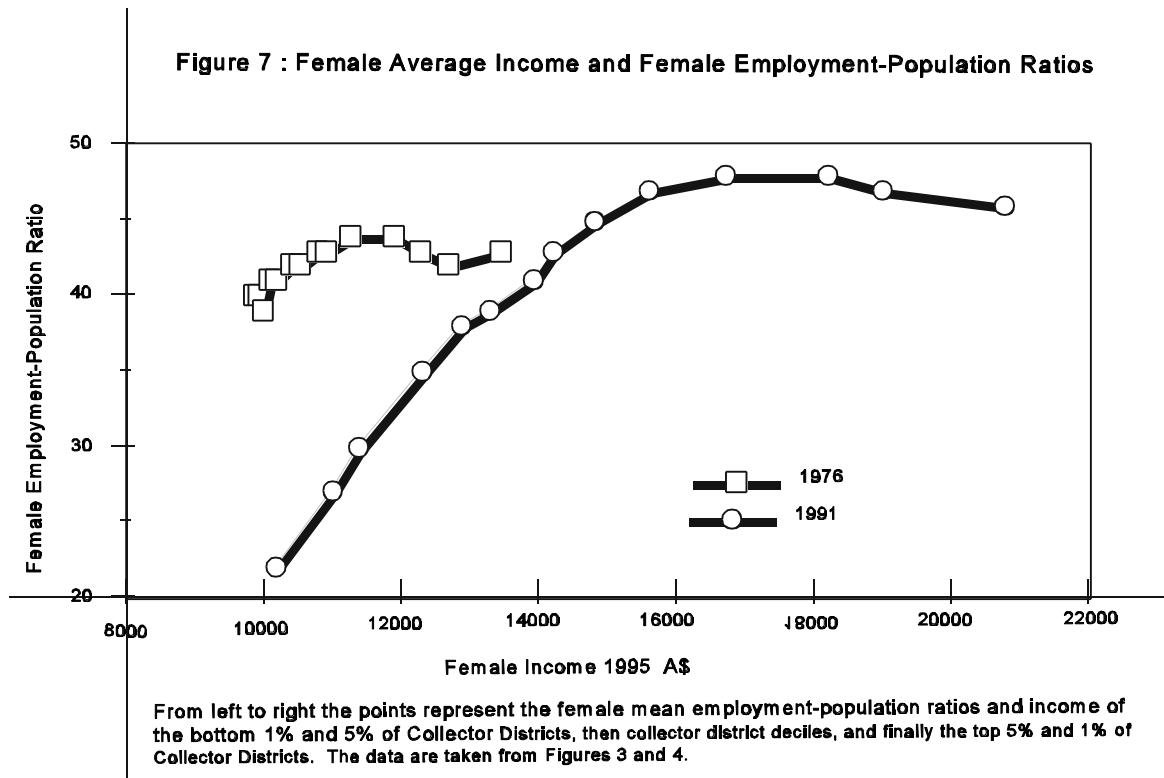

Figure 5 : Female Average Employment-Population Ratio 1976-1991
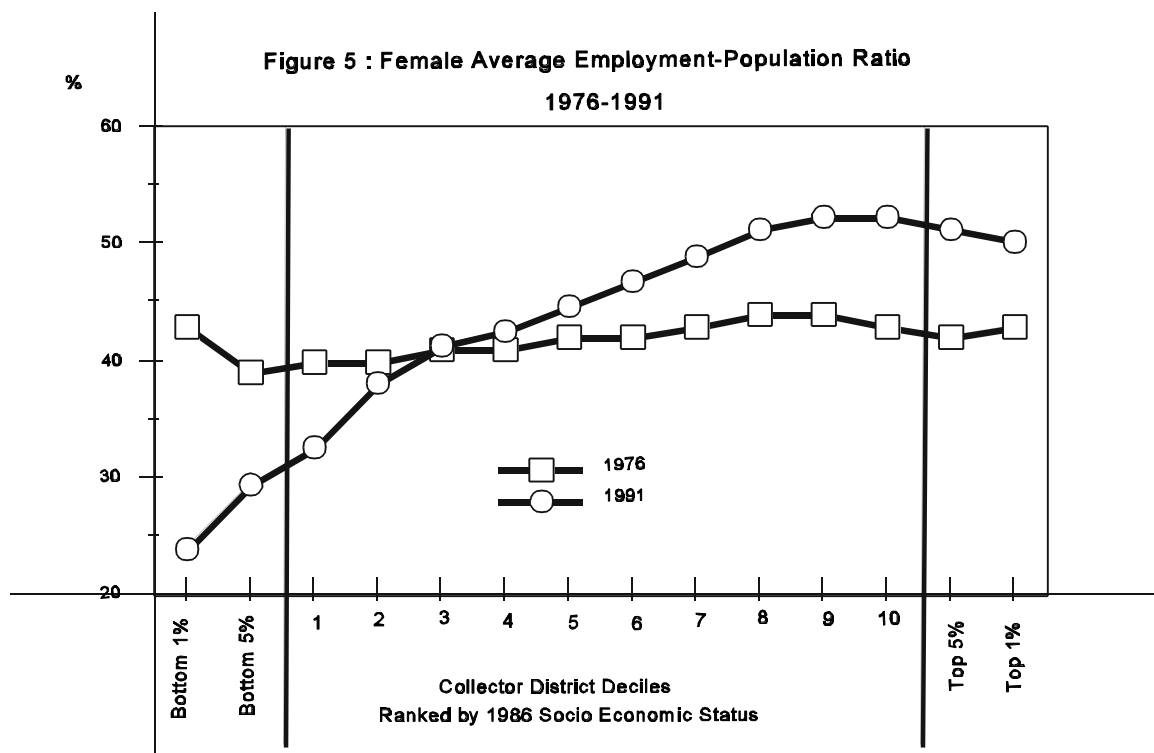
The new face of Australian cities

Neighbourhoods in 1991 can be divided into two groups. For neighbourhoods taken from the top 20 to 30 per cent of CDs, ranked by SES, the employment-population ratio of men and women does not change significantly across neighbourhoods and there is no close relationship between employment level changes and income changes (Figure 6, Figure 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 per cent of neighbourhoods 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 neighbourhoods by SES and not to be related to income changes.

For the remaining 70 to 80 per cent of neighbourhoods 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 $2300 to male income (Figure 6) and $2816 to female income of a neighbourhood (Figure 7).
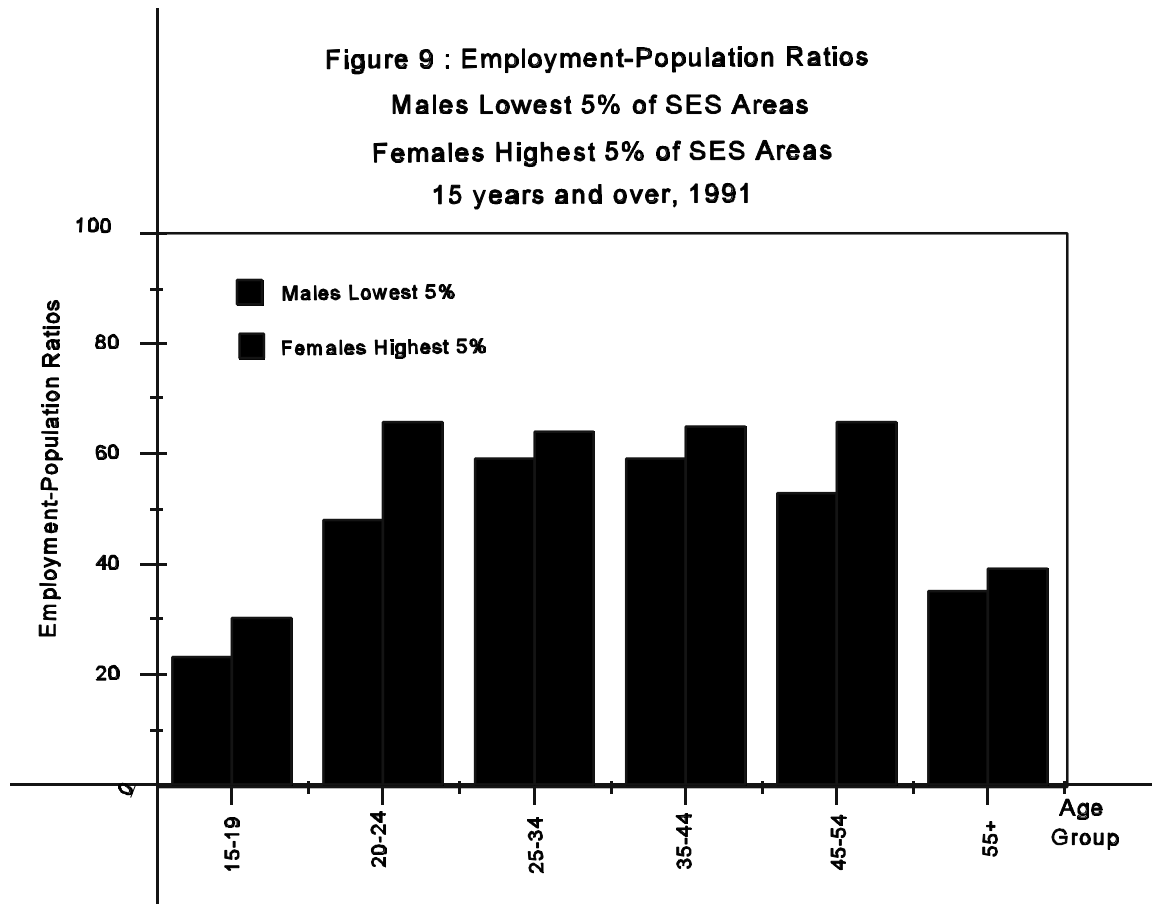

Figure 6 : Male Average Income and Male Employment-Population Ratios

From left to right the points represent the male mean employment-population ratios and income of the bottom 1% and 5% of Collector Districts, then Collector Dostrict Deciles, and finally the top 5% and 1% of Collector Districts. The data are taken from Figures 3 and 4.

Figure 7 : Female Average Income and Female Employment-Population Ratios

From left to right the points represent the female mean employment-population ratios and income of the bottom 1% and 5% of Collector Districts, then collector district deciles, and finally the top 5% and 1% of Collector Districts. The data are taken from Figures 3 and 4.

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

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

Figure 8 : Employment-Population Ratios
All Persons by Age
Lowest and Highest 5% of SES Areas, 1991
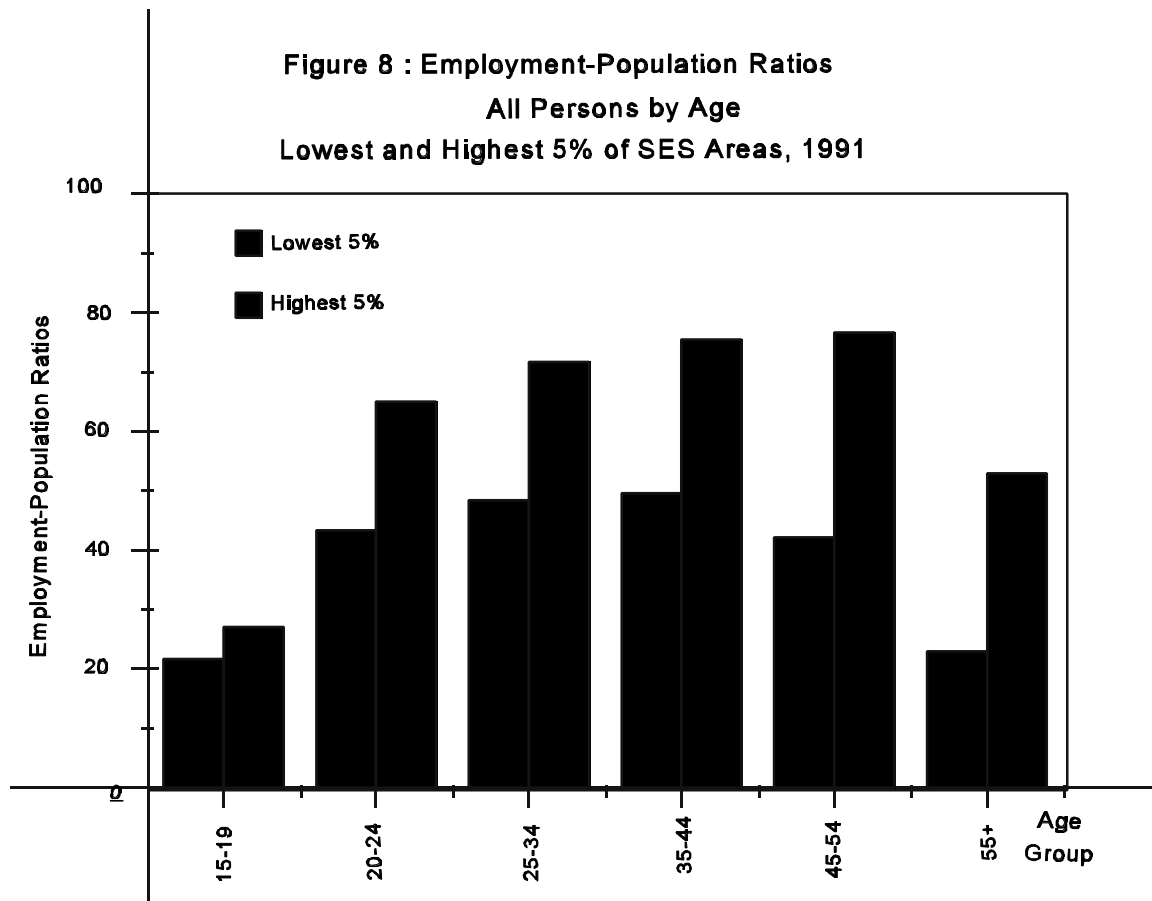
The pattern is the same for men and women. It is remarkable that in 5 per cent of CDs from the low SES areas that almost one half of the men 25 to 44 years are not engaged in employment. Indeed, the employed proportion of the male population of low SES areas in every age group is lower than the employed proportion of females from high SES areas (Figure 9).

Figure 9 : Employment-Population Ratios
Males Lowest 5% of SES Areas
Females Highest 5% of SES Areas
15 years and over, 1991

The rate of joblessness among residents of a CD can usually be explained by human capital characteristics, country of origin and usual industry of employment. It is noticeable, however, that among the bottom 10 per cent of CDs in 1986 there appears to be other factors at work which impact negatively on employment. These additional locational specific factors were not evident in 1976.

IV Conjectures as to the Causes of Increased Urban Inequality

Although we are very concerned about the rapid growth in income inequality across neighbourhoods 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 towards 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. It has been implicitly based on the premise that if inequality is reduced among individuals it will be reduced across urban areas. This premise seems incorrect. There has been no 'trickle down' of macro economic growth to the unemployed and low income earners in low SES areas between 1976 and 1991. What might be done if we are dissatisfied with a situation where, in 1991, male unemployment is as high as 35 per cent in many neighbourhoods? How might we return to something approaching the distribution of neighbourhood income in 1976?

It is not possible to answer these questions without some understanding as to the underlying causes of the growth of urban inequality. There is a range of possible causes and we are not sure of their relative importance. We focus on four.

Manufacturing decline and the interaction of real wages, welfare benefits and transport costs

A glance at the 1976 Census data is sufficient to indicate that some of the preconditions for important regional shocks existed *within* cities. To illustrate this we divide industry of employment into twelve two-digit Australian Standard Industrial Classification categories and focus on the male labour force. Similar considerations apply to the female labour force.

Figure 10 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. The data are presented as the mean of each SES decile. Individuals are classified by area of residence and not by location of employment.

There is a distinctive pattern. In CDs from the bottom SES decile 27 per cent of all males over 15 years of age were employed in manufacturing. As the SES of the area increases the manufacturing employment proportion falls reaching 13 per cent in areas of high SES. Figure 10 also includes 1976 male employment in Finance/Business and Community Services. Six per cent of men over 15 years from the bottom SES decile are employed in these industries. In areas of high SES these two industries employ 23 per cent of all men. Employment in the other nine industries, which we label the Residual category, exhibit no noticeable and systematic pattern across SES areas.

Figure 10 : Proportion of Males Employed by Industry Group 1976
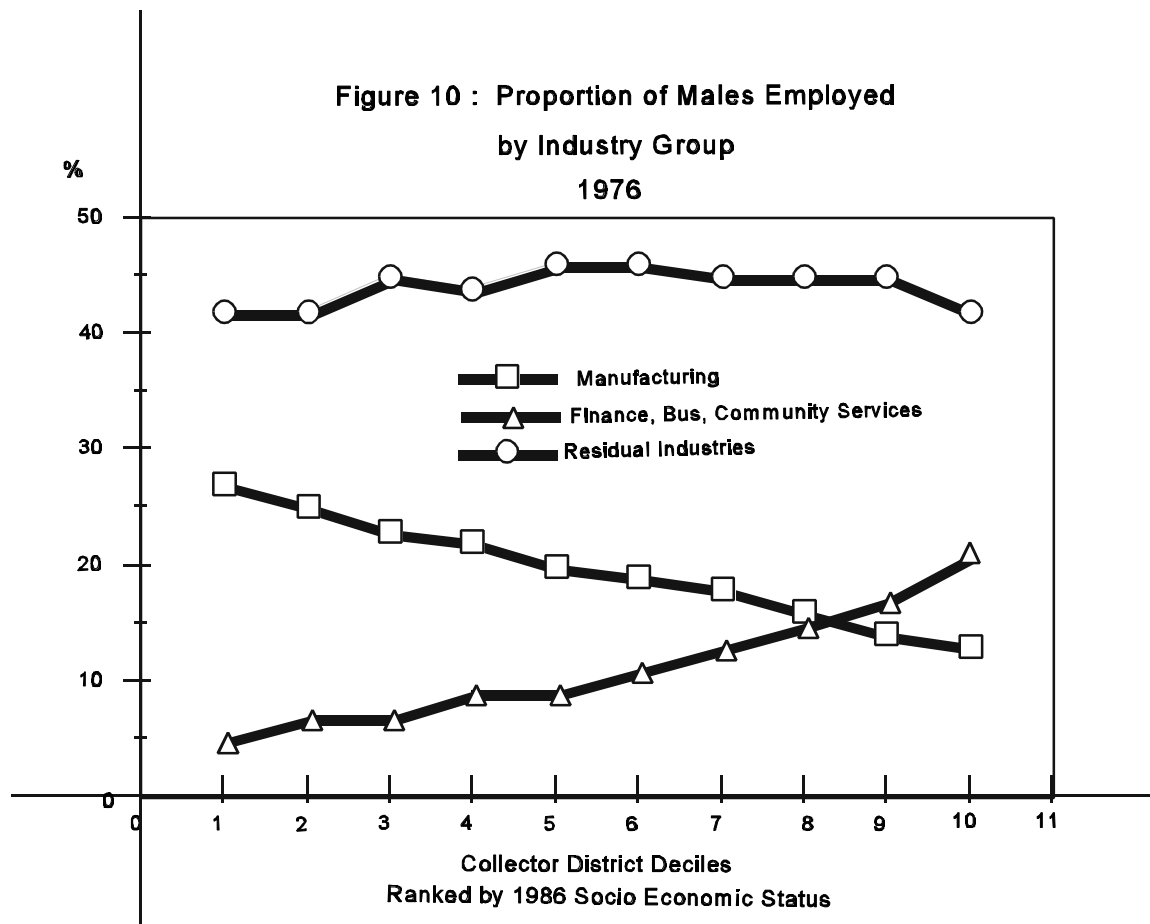
Between 1976 and 1991 there was a large negative macro shock to manufacturing and male manufacturing employment, as a proportion of the male population over 15 years of age, fell 37 per cent. Low SES areas were badly affected. Employment in manufacturing fell in the lowest decile by 15 men per hundred over the age of 15 years (Figure 11). The fall in the top decile was much less at six men per one hundred.

Labour 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 per cent and did not provide opportunities for net job growth. The pattern of decline was much the same irrespective of the SES ranking of the neighbourhood. The only significant source of male employment increase, 29 per cent, was in Finance/Business and Community Services, where employment change favoured high SES areas. The net result is that 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.

Figure 11 : Change in Proportion of Males Employed by Industry 1976-1991
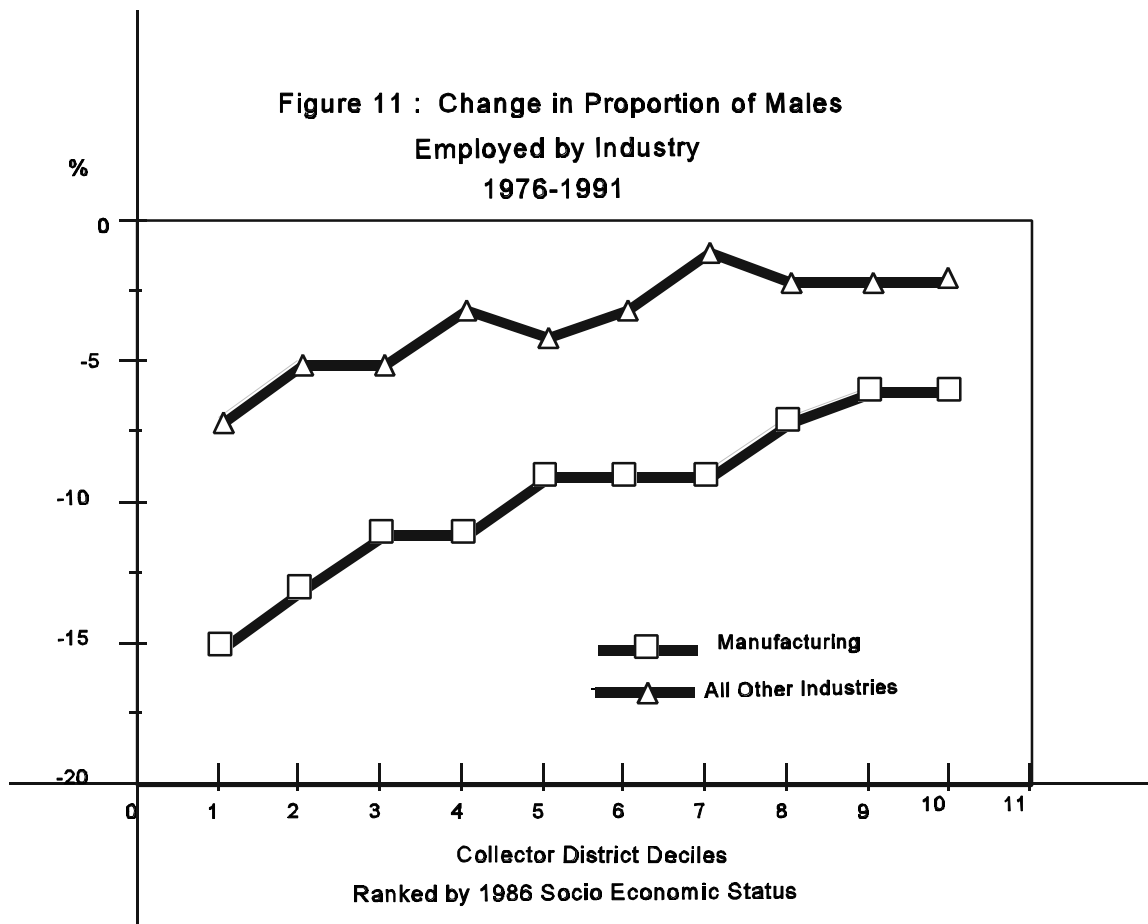
It is perhaps not surprising that job loss was spread unevenly across CDs and fell disproportionately on areas where manufacturing employees live; this is to be expected given the initial employment pattern. The interesting point is the spatial nature of the persistence of joblessness. What could be the mechanisms generating these outcomes? One possibility is the following.

Suppose that as a rough approximation Finance/Business and Community Services tend to locate in the city centre or in local shopping and business areas that are easily accessible to all potential employees. Transport routes are focussed 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 not spread evenly throughout the city but are close to low SES areas where the majority of their workers live.

If this description is broadly correct then 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 the manufacturing job losses. The persistence of the geographical dispersion of unemployment arises because of the combination of the industry pattern and geographic location of the lost jobs.

The persistence elements of the analysis can be reinforced by other changes that are occurring in the economy. Suppose, at the same time factories are closing, that welfare payments for

non-work are increasing in real terms, transport costs are increasing in response to the movements towards 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, 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 then 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 and accept a low paying job.[16]

If mechanisms similar to this are generating unemployment persistence in areas where manufacturing workers used to live then a number of important points follow. First, the unemployment problem cannot be solved by macro policies which do not create a job bias towards 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 likely to continue or at least seem unlikely to be significantly reversed. Hence, in the absence of some intervention unemployment may continue to persist on a geographical basis.

This simple analysis of persistence suggests that our future research should look closely at access to transport services, travel to work data and the location of factories. Other researchers have focussed on transport disadvantage and that would need to be integrated here. The other research task is to consider whether individuals are responding in sufficient numbers to these changes to contribute significantly to unemployment persistence.

Finally, within this type of model lower wages in low SES areas offers to the unemployed may exacerbate the situation. Lower wages may have two countervailing effects: they may create jobs but reduce the willingness of those who live in low SES areas to travel and accept these jobs. The withdrawal of labour supply in low SES areas may well dominate. Lower wages would need to be accompanied either by generation of jobs close to the depressed areas or by reductions in unemployment benefits that encourage people to stay where they are. Experience with inner city poverty and unemployment in the US suggests that low wages do not cure the problem.

The decline in demand for unskilled labour

Another important influence that could be generating the growth of joblessness in low SES areas is that the demand for labour is moving away from unskilled workers towards workers with skills and education. The unskilled live in low SES areas and the skilled in areas of high SES. Inspection of Figures 10 and 11 suggest that the greatest job losses occur where there is a concentration of manufacturing (Figure 11). Job losses in other industries also show a systematic relationship with the SES of an area but the relationship is not so marked or so large. A structural explanation which emphasises manufacturing decline seems better than an explanation which emphasises the decline in the demand for unskilled workers across all industries.[17] Of course both influences may be at work.

Public housing policy

Approximately 5 per cent of the population live in public housing which, by and large, is concentrated in areas of low SES. Access to public housing has become increasingly directed towards the poor and economically disadvantaged. As a result urban inequality has increased

The typical public housing resident has changed considerably over the 1976 to 1991 period. To demonstrate this we constructed a special sample of neighbourhoods where the proportion of individuals in public housing exceeded 50 per cent. Table 2 shows the income change in public housing areas that are located in the bottom 10 per cent of SES CDs. Over this period the average real income of a male public housing resident fell 29 per cent. The average income of a male in non-public housing neighbourhood in the bottom 10 per cent of SES neighbourhoods fell 13 per cent. Women who live in areas of high public housing concentration have also done less well.

Employment changes were also very large and negative in public housing. Employment of men and women in public housing fell 42 per cent and 30 per cent respectively. In non-public housing the employment of men fell 24 per cent and that of women fell by 5 per cent.[18]

In neighbourhoods in the bottom 10 per cent of SES areas without public housing all the general characteristics described earlier are still apparent but the extent of the falls has been moderated somewhat. Public housing policy, which has increasingly grouped low income people together, has contributed to the falling income in low SES areas but is only a part of the story.

Table 2. **Change in employment and real income in public housing neighbourhoods and other neighbourhoods in the bottom 10 per cent of SES rankings - 1976 to 1991**

		Neighbourhoods	
Public Housing*	No Public	All	
	%	Housing %	%
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

* Public Housing Neighbourhoods: 50 per cent or more of the neighbourhood population residing in public housing. There are 207 Public Housing neighbourhoods in the sample.

General macro influences

Increasing inequality may also be the result of major structural problems in the macro economy—such as emerging inflation or balance of payment difficulties—that lead to insufficient job creation. Irrespective of the initial nature of the adverse macro employment

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 up-draft draws individuals from low SES areas back into employment.

One piece of evidence that might support this view is that according to Census data approximately 40 per cent 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 need to know the SES status of the areas where individuals move to and come from but the Census does not provide this information at the detailed level at which this analysis is conducted. This is an important piece of missing data. It may be possible to look more closely at mobility at higher levels of spatial aggregation (Gregory and Hunter 1995b).

If individuals move a small distance to an area similar to the one they left then this 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 then 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 macro analysis of unemployment with regional specific shocks and persistence.

V Some Policy Comments
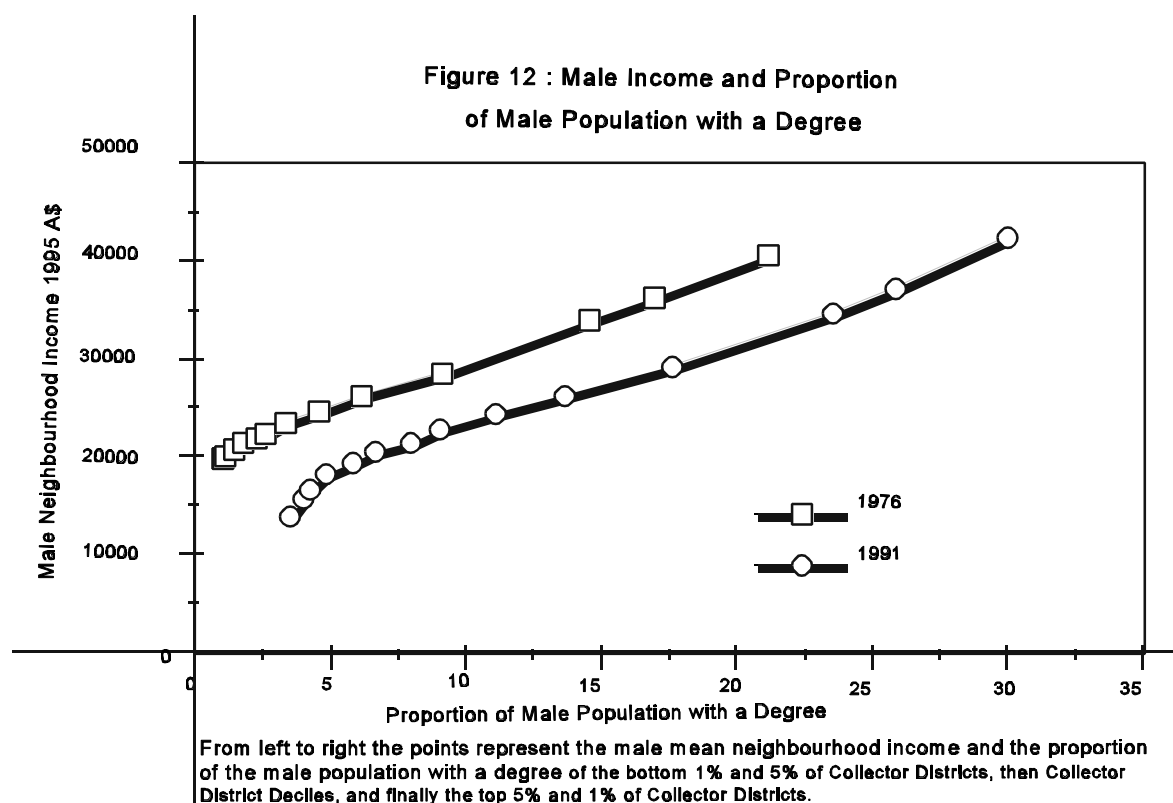
Education policy

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 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 neighbourhood from areas of median SES. Between 1976 and 1991 the proportion of the population with degrees increased from 3.7 to 14.7 per cent and the proportion of the population without qualifications fell from 66 to 45 per cent. And yet, despite this large increase in education of the potential workforce, male unemployment in median neighbourhoods has risen from 4.4 to 13.0 per cent. In addition, average income per adult has risen by less than one half a per cent 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 neighbourhood. 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 neighbourhoods. The various measures of the education level and income level of a neighbourhood's residents are highly correlated and for our analysis we use the proportion of residents 15 years and over with a degree.[19]

In 1976, there was a strong positive association between the average education level of a neighbourhood and the income of its residents. On average, a one percentage point increase in numbers of men holding degrees was associated with additional neighbourhood income of $1000 (Figure 12). For women, the relationship was $500 for each additional percentage point increase in the proportion of the female population with degrees (Figure 13). Among neighbourhoods, as among individuals, higher education brings higher income.

Figure 12 : Male Income and Proportion of Male Population with a Degree

From left to right the points represent the male mean neighbourhood income and the proportion of the male population with a degree of the bottom 1% and 5% of Collector Districts, then Collector District Deciles, and finally the top 5% and 1% of Collector Districts.

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 neighbourhoods 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 population with degrees the annual income level has fallen by about $8000. If the employment-education relationship can be thought of as a causal one then to achieve the same level of male income as in 1976 a neighbourhood needs to achieve a higher education level. Consider a neighbourhood from a low SES area. To maintain male income this neighbourhood 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.

Figure 13 : Female Income and Proportion of Female Population with a Degree

From left to right the points represent the female mean neighbourhood income and the proportion of the female population with a degree of the bottom 1% and 5% of Collector Districts, then Collector Distric Deciles, and finally the top 5% and 1% of Collector Districts
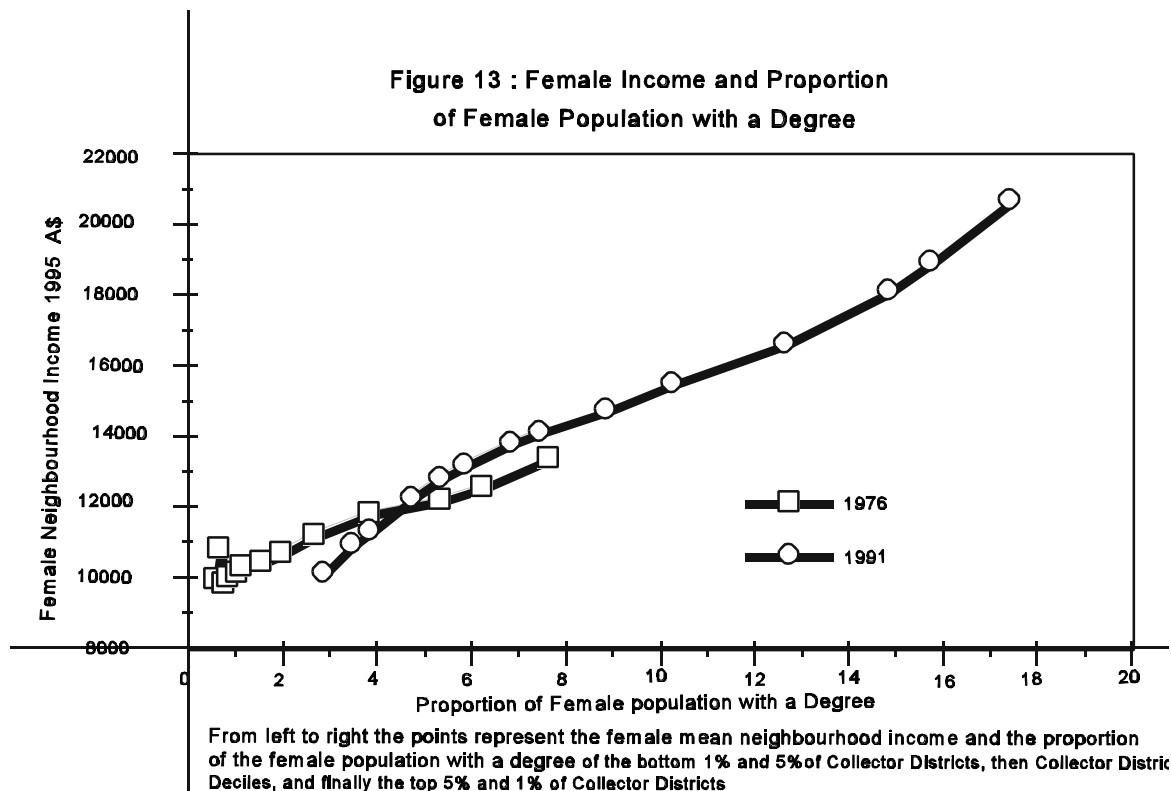
This shift in the education-income relationship is very important. On the basis of the 1976 relationship between the incidence of degrees and the income of a neighbourhood, the increased education attainment of the average neighbourhood within the bottom five per cent of CDs should have brought about an income increase of $3500. In fact, there has been a fall of $6000. The $9500 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 neighbourhoods from the bottom 70 per cent of SES areas the education-employment relationship has moved down but, *in addition,* there is now a strong neighbourhood relationship between less neighbourhood education and less neighbourhood employment: a relationship that did not exist in 1976. The lower the male education level of a neighbourhood 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 neighbourhoods are now twice disadvantaged by low education levels.

For neighbourhoods from the top 30 per cent of SES areas further education does not bring further employment. For these neighbourhoods nothing has changed with respect to *changes* in education and changes in employment. But the education-employment relationship has also shifted downward so at each neighbourhood education level there is 15 percentage points less employment.

Labour market changes for women are similar to those for men in all but one respect. That is the education-income relationship has changed little since 1976 except in areas of low SES where additional degrees among residents have not brought neighbourhood 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 labour market.

There is a clear dichotomy between neighbourhoods. For the top 30 per cent 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 per cent of neighbourhoods 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 neighbourhoods to assess the general impact of the large increases in education levels of the potential workforce. In 1976, 10 per cent of all residents 15 years and over who resided in CDs from the top 5 per cent SES possessed degrees. Now the proportion is 20 per cent. In the lowest 5 per cent of CDs in the proportion of the population with degrees has increased from 0.5 per cent to 3 per cent. 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. Neighbourhoods have not become more equal. For every ten new degree holders in the top 5 per cent of CDs there has been an additional three 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 neighbourhoods 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.[20]

Macro policy, wages and employment bias

We begin by stating the obvious. A necessary condition to reduce urban inequality to levels more closely approximating those of the mid-1970s is that macro policy must be directed towards strong employment growth. Furthermore, a rate of aggregate job creation that implies average unemployment rates above 6 per cent will not be sufficient. The change in urban inequality between 1976 and 1991 occurred in an environment where the unemployment rate averaged about 6.9 per cent.

It is clear from the pattern of neighbourhood job loss presented in Figures 4 and 5 that if urban inequality is to be reduced there must be a substantial bias in new job growth towards those who live in depressed neighbourhoods. If we make the unlikely assumption that participation rates are fixed and we wish to return to the 1976 unemployment relationship then, for each additional job taken up in the top 5 per cent of SES areas, about 12 jobs are needed for those from the lowest 5 per cent of SES areas. It seems that macro policy alone will be unable to achieve this outcome.

First, even if the economy continues to create jobs at a fast rate, and for a sufficiently long

time, the economy is unlikely to generate the neighbourhood job bias needed. Long run employment trends seem to be against the unskilled, the lowly educated and those who live in depressed neighbourhoods.

Second, it would also seem that the new pattern of unemployment across neighbourhoods will make it more difficult to pursue fast economic growth without the development of inflationary wage pressures. It might be expected that as the economy expands, inflationary wage pressures will be exerted by those in good neighbourhoods and the growth cycle will come to an end before new jobs extend to depressed neighbourhoods.

This problem can be analysed with the help of a simple diagram. Figure 14 presents the unemployment pattern across neighbourhoods in 1976. Unemployment is higher in areas of low SES but the 5 percentage point unemployment gap between neighbourhoods from the highest and lowest 5 per cent of neighbourhoods ranked by SES is small. Suppose now that the economy grows sufficiently fast to create enough employment in aggregate that the number of jobs offered to those who live in a neighbourhood from the median SES group just equals the number of unemployed there. Furthermore, assume that there is no bias in initial job offers so that they are spread equally across all neighbourhoods (Line A).

Figure 14 : Neighbourhood Unemployment Rate
Males
1976
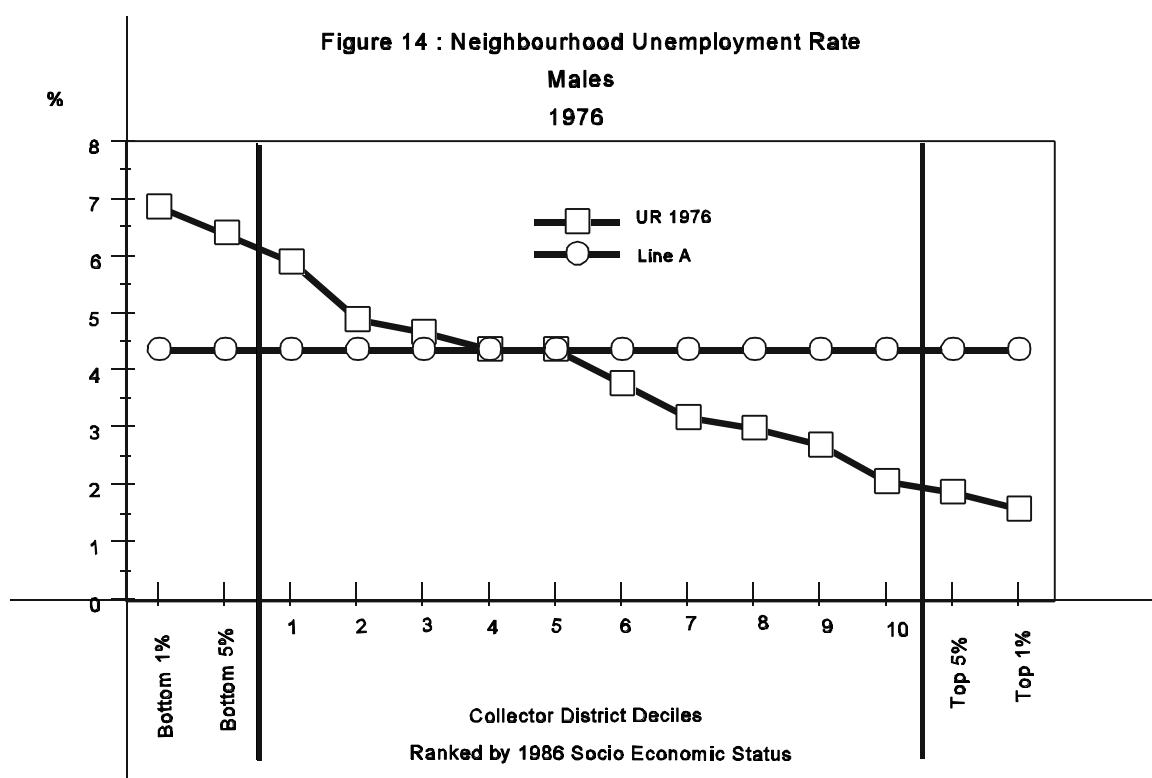
Under these circumstances those who live in neighbourhoods with income above the median will receive more job offers than there are unemployed people—the vertical distance between the two lines. This will generate two responses. One is that as job offers are unfilled they will move down the neighbourhood rankings and offers will spill over to those who live in poorer neighbourhoods. This is the 'trickle down' effect of economic growth which seemed to operate throughout the 1950s and 1960s. The other response is that there will be pressure for wage increases among those who live in good neighbourhoods and find that job offers are

plentiful. These two effects are obviously inter-connected. The greater the spillover effect to those in low SES areas the less the wage pressures created by any given level of job offers.

The wage pressure emanating from those who live in good neighbourhoods depends on the position and slope of the unemployment curve and Line A, the job offer curve. The slope of the unemployment curve provides a measure of the degree of substitutability of labour across areas. A flat unemployment curve suggests there has been substantial 'trickle down' of job offers. The higher the substitutability of labour the more similar should be the rate of unemployment across areas. If the unemployment curve rotates and becomes steeper so that unemployment increases in low SES areas and decreases in high SES areas, this will suggest that the substitutability of labour from different SES areas has decreased. Since 1976 the unemployment curve has moved in ways which suggest that job offer spillovers have become weaker and, as a result, it has become more difficult for macro-economic policy alone to achieve full employment without generating inflationary pressures (Figure 15). The difference in male unemployment rates from the bottom to the top 5 per cent of SES areas has increased from 5 percentage points in 1976 to 17.5 percentage points in 1991.

Figure 15 : Neighbourhood Unemployment Rates
Male
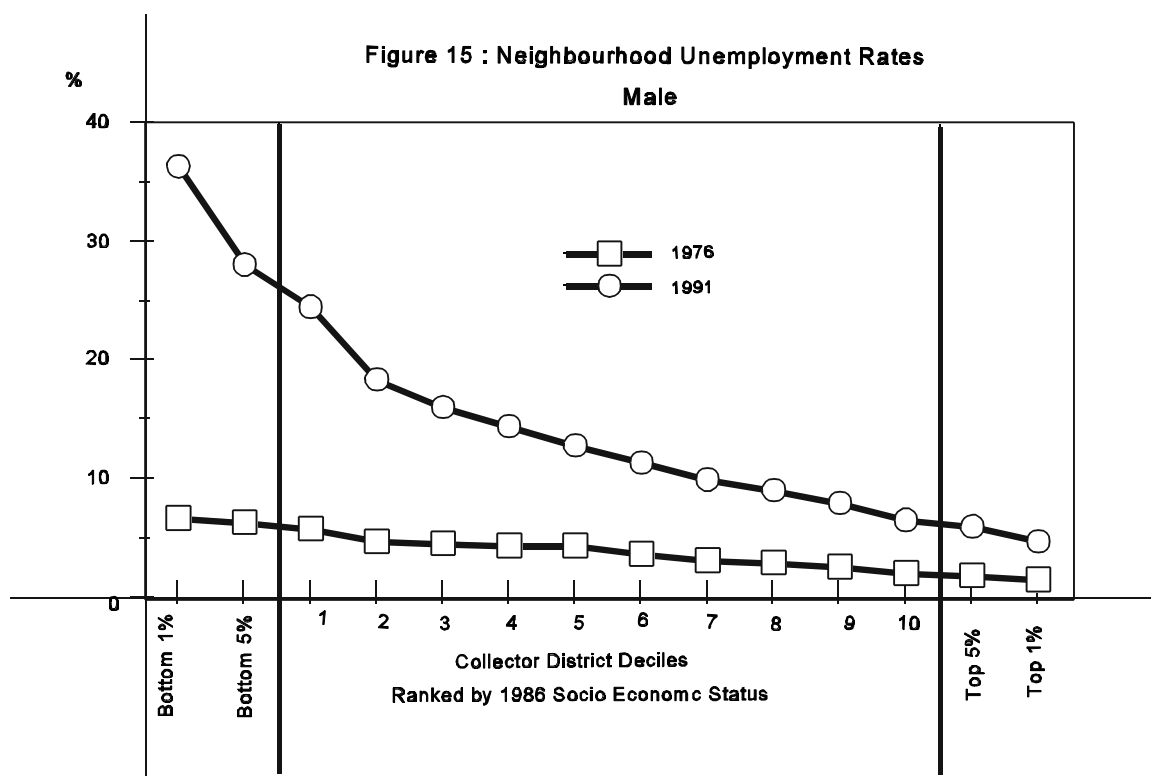
The slope of Line A measures the bias in the job offers across areas. If Line A is horizontal there is no neighbourhood bias. Over the last two decades it is probable that the slope of Line A has been positive and jobs have been disproportionately offered to inhabitants of high SES areas. These individuals are the better qualified and more skilled. As a result of this bias the wage pressure has been greater than if the job offer line was horizontal or negatively sloping. There are reasons to believe that over time the unemployment rate curve will become steeper and job offer spillovers may become weaker. Should this occur then macro policy would become less effective in its attempt to increase more jobs without inflation.

Macro policy needs to be accompanied by successful labour market interventionist policies to bring residents of depressed areas back into the labour market. If there is a widening of income inequality and job opportunities across urban areas then the internal dynamics of depressed areas may be increasingly creating islands which are largely outside the main trade routes of economic growth. Unemployed people in depressed neighbourhoods may be associating primarily with other unemployed people and as a result may not hear of available job opportunities. Most individuals find new jobs by being told of opportunities by friends or relatives.[21] It may also be that individuals living in depressed neighbourhoods develop behaviour patterns that make it difficult for them to be successful in job search.

Relative wages policy

There are two obvious wage policy reactions that might be made to the above analysis. The first could be thought of as a macro response. If we could control wage increases for those who live in high SES neighbourhoods, so that their response to excess demand does not lead to an outbreak of wage inflation, the economic cycle may continue longer and there will be more job offer spillovers to those who live in low SES areas. This is essentially the policy that was followed by the Accord process throughout most of the 1980s and early 1990s.

The second reaction, which might be thought of as a micro response, is to attempt to flatten the unemployment rate curve and change the job offer curve by lowering wages of those who live in low employment neighbourhoods. This might be achieved by deregulating the labour market so that the wages and income of those who live in low SES areas will fall further but be offset to some degree by increased employment opportunities. The lower wages will either create more low paid jobs and/or divert some wage offers away from higher priced labour.

It is not known how much wages might need to fall. To increase employment of the bottom 5 per cent of SES areas back to 1976 levels, relative to high SES areas, would require at least a 44 per cent increase in male employment and a 70 per cent increase in female employment. It appears likely therefore that a substantial wage fall would 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 and yet low employment rates persisted in low SES areas it might be expected that governments would eventually react and reduce labour market related benefit levels on the grounds that the increased benefit levels, relative to low wages, were discouraging individuals from accepting jobs.

Labour 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. The main policy instruments to increase employability have been developed in the context of the *Working Nation* statement (Commonwealth of Australia 1994) and include wage subsidies for the long term unemployed and increased education and training for the low skilled. The neighbourhood analyses of this paper strengthens the support for these programs and we hope that subsequent evaluations of the Working Nation initiatives indicate

that these programs are effective.

VI Concluding Remarks

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

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

To lose employment and to 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 neighbourhoods who are increasingly not at work, that part-time jobs are going to young people and women who live in high SES neighbourhoods and that income is rising in the best SES neighbourhoods but falling in poor neighbourhoods. Our intuition suggests that neighbourhoods do matter. It seems likely that the greater the economic polarisation within our cities the less equal are the opportunities for young people and the more likely that bad neighbourhood 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 neighbourhoods and it is not always easy to move from thought patterns that revolve around individuals or the macro economy 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 neighbourhoods. An attempt should also be made to take into account the delivery of non-cash services to areas of low SES. The next stage is to identify distressed areas and locations which have lost the greatest amount of income, describe more thoroughly their characteristics and assess whether there are efficient tools of government policy to address the locational aspects of joblessness.

NOTES

1   There is no consensus, however, as to the source of these large changes. They seem to be related to shifts in labour demand away from men and towards women workers and away from unskilled workers 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 labour. 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 are less clear. Government intervention in Australia has a strong equalising component. Harding (1995) has estimated that the ratio of market incomes between the top and bottom 20 per cent 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   These studies are reviewed in Maher (1995).

4   In this regard Maher, in summarising the body of work concluded

> The outer suburbs in general, are no more or less disadvantaged than are a number of other settlement regions ... For the majority in the outer suburbs the lower level of proximity are compensated for by higher levels of mobility, as well as other sought after attributes such as space, newness, privacy and social compatibility. (Maher 1995)

The studies also tend to show that concentrations of disadvantage were distributed throughout the urban area, and not confined to any specific region.

5   We have not found any cross-country comparisons of urban neighbourhood inequality. Studies in other countries are not directly comparable with our work.

6   The poverty of the US ghettos is compounded by the concentration of disadvantaged Americans of African descent (see Wilson 1987). Another contributing factor is the US Federal system that places emphasis on local taxes as a revenue source. The Australian Federal system, in contrast, is a force for equalising income and government services across neighbourhoods.

7   Unemployment at August each Census year taken from the *Labour Force Survey*.

8   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 neighbourhood. In each successive 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 then the first was taken to be representative of the 1986 CD.

9   The data are released by ABS as group averages within each neighbourhood to protect the confidentiality of individual census returns. As an example of the difficulties of data that are released as group averages consider the following: data are available for mean income and mean employment within each CD but not mean income per employed person and there is no way that we can accurately calculate this figure.

10   We use the Urban and Rural Indexes of Relative Advantage. 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.

11   A household consists of a person living alone, or two or more related or unrelated persons who live and eat together in private residential accommodation.

12   The Census income is income reported from all sources. It does not include services in kind. It is also not adjusted for taxes paid. Professor Harding and associates at the National Centre for Social and Economic Modelling has begun to measure the impact of taxation and government expenditure such as education, health and public housing on different income groups. This preliminary research indicates that government services in kind are very important to equalising the individual and household distribution of income. Expenditure on non-cash benefits is estimated to be of a similar magnitude to Federal Government expenditure on social security and welfare. These expenditures have not yet been analysed on an area basis and it is not clear that they can be. There has been no study of changes on non-cash benefits through time.

13   The data collection method for the Census is for household members to complete a questionnaire. Many other ABS data sources are collected by household interviews. There are systematic differences in data according to the collection method. The Census tends to understate income and employment of those whose involvement in the workforce is peripheral.

14   An investigation of the coefficient of variation of income within neighbourhoods suggests that within neighbourhoods income allocation across households and individuals is not becoming more homogeneous. This suggests that we are observing household income changes within neighbourhoods, ranked by SES, rather than a sorting phenomenon which is reallocating households across neighbourhoods.

15   These data are taken from the *Labour Force Survey* August 1976 and August 1991.

16   Consider a hypothetical and perhaps exaggerated example. If low skilled jobs are lost in Footscray, Victoria, and created in Dandenong (40 kilometres away) it seems very unlikely that a unemployed 50 year old man, who usually earns a low wage when employed, will begin to travel each day from one part of the city outskirts to another. The real income gaps between government income support and low rents, on the one hand, and low wages less travel expenses to the other part of the city, on the other, may result in the unemployed remaining without work where they are. Furthermore, if the person is a home owner and his house price falls in response to the regional shock, he is unlikely to sell and move.

17   The change in male employment between 1976 and 1991 can be explained in approximately equal proportions in terms of the 1976 socio-economic status of the area and the 1976 proportion of males employed in manufacturing.

18   There is an important policy issue here that relates to the rental rebate policy in public housing. These and the impact of withdrawal rates of social security payments mean that a person living in public housing may see little benefit of any income from employment, especially if they incur transport and child care expenses.

19   Other possible variables include the proportion with a qualification and the average number of years of schooling. A degree is defined as Bachelor Degree, Post Graduate Diploma, Masters Degree and Doctoral Degree in 1976 and as Bachelor Degree, Graduate Diploma or any other Higher Degree in 1991.

20   The very large expansion of education must have affected the quality of education. This may well have locational aspects. There is evidence indicating high failure rates in areas of low SES.

21   In a recent UK study Gregg and Wadsworth (1994) show that the most successful method utilised by unemployed males to find a job is through friends and contacts. The utilisation 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 of jobs are found from this method. Montgomery (1991) estimates that 50 per cent of all workers currently employed in the US found their jobs through friends and relatives.

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