THE AUSTRALIAN NATIONAL UNIVERSITY
Centre for Economic Policy Research

DISCUSSION PAPERS

THE AUSTRALIAN AND US LABOUR MARKETS DURING THE THIRTIES
R.G. Gregory, V. Ho, L. McDermott and J. Hagan

DISCUSSION PAPER NO. 176
August 1987

G.P.O. Box 4, Canberra 2601, Australia
THE AUSTRALIAN AND US LABOUR MARKETS
DURING THE THIRTIES*

R.G. Gregory, V. Ho, L. McDermott
and J. Hagan**

DISCUSSION PAPER NO. 176
August 1987

ISBN: 0 940293 91 1
ISSN: 0725 430X

* This paper will form Chapter 11 of B.J. Eichengreen and T.J. Hatton (eds) Interwar Unemployment in International Perspective, Martinus Nijhoff, forthcoming 1988.

** R.G. Gregory, and J. Hagan, Department of Economics, Research School of Social Sciences, Australian National University. Miss Ho is a graduate student at Stanford University. Most of the early work on unemployment duration was undertaken by L. McDermott in her honours thesis at Harvard University. The authors are grateful to Tim Hatton for constructive comments. Invaluable research assistance was provided by Eva Klug and Roslyn Austin.
# TABLE OF CONTENTS

1. INTRODUCTION ................................. 1

2. THE AUSTRALIAN-US COMPARISONS .......... 4
   2.1 Real and Nominal Wages ................. 4
   2.2 Employment .......................... 10
   2.3 Unemployment Duration ................. 24

3. FURTHER OBSERVATIONS ON UNEMPLOYMENT IN AUSTRALIA .......................... 30
   3.1 Geographic Dispersion of Unemployment within Cities .................. 30
   3.2 Income Maintenance .................... 34

4. CONCLUSION .................................. 37

FOOTNOTES .................................. 40
APPENDIX 1 .................................. 42
REFERENCES .................................. 46
LIST OF DISCUSSION PAPERS ................. 48

---

## FIGURES

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>DESCRIPTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1</td>
<td>Real Gross Domestic Product Australia-USA 1921-1940</td>
<td>6</td>
</tr>
<tr>
<td>11.2</td>
<td>Nominal Wage Rates Australia-USA 1920-1940</td>
<td>7</td>
</tr>
<tr>
<td>11.3</td>
<td>Real Wage Rates Australia-USA 1920-1940</td>
<td>9</td>
</tr>
<tr>
<td>11.4</td>
<td>Unemployment Rates Australia-USA 1920-1940</td>
<td>11</td>
</tr>
<tr>
<td>11.5</td>
<td>Non-Farm Employment Australia-USA 1920-1940</td>
<td>13</td>
</tr>
<tr>
<td>11.6</td>
<td>Labour Productivity Australia-USA 1921-1940</td>
<td>14</td>
</tr>
<tr>
<td>11.7</td>
<td>Productivity Measures for USA 1920-1940</td>
<td>19</td>
</tr>
<tr>
<td>11.8</td>
<td>Weekly Hours Worked Australia-USA 1920-1940</td>
<td>21</td>
</tr>
<tr>
<td>11.9</td>
<td>Manufacturing Productivity Australia-USA 1921-1940</td>
<td>44</td>
</tr>
<tr>
<td>11.10</td>
<td>Average Wages for Australia 1922-1940</td>
<td>45</td>
</tr>
</tbody>
</table>

## FIGURES AND TABLES

### TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>DESCRIPTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1</td>
<td>Labour Hauling: Australia-US</td>
<td>16</td>
</tr>
<tr>
<td>11.2</td>
<td>Unemployment Duration, 1933, 1935, 1939</td>
<td>26</td>
</tr>
<tr>
<td>11.3</td>
<td>Duration of Unemployment, Unemployment and the Change in Employment and the Labour Force, All Persons</td>
<td>27</td>
</tr>
<tr>
<td>11.4</td>
<td>Labour Force Characteristics of Local Government Areas Grouped into Deciles</td>
<td>31</td>
</tr>
<tr>
<td>11.5</td>
<td>Income of Individuals - 1933</td>
<td>35</td>
</tr>
</tbody>
</table>
THE AUSTRALIAN AND U.S. LABOUR MARKET DURING THE THIRTIES

R.G. Gregory, V. Ho, L. Mc Dermott and J. Hagan*

1. INTRODUCTION.

Over most of this century the Australian labour market has possessed two key institutional features: a high degree of craft trade unionism and a system of federal and state tribunals, which provide a centralized system of wage setting and dispute resolution. It is widely believed that these institutions exercise a considerable impact on the Australian labour market and impart a large degree of regulation and perhaps inflexibility.

The tribunals, for example, set minimum wages for each occupation so that the pay of university professors is fixed along with that of bus drivers, labourers, fitters and turners and so on. These rates of pay are called awards and are legally enforced minimums. Where the awards are set by the federal tribunal they are set on a nationwide basis. For example, all electricians, irrespective of the state or industry in which they work, will be covered by the same award rate of pay. The opportunity exists for overaward payments but most workers receive the award rate of pay for the job.¹

The tribunals also arbitrate on conditions of work. These conditions include the standard hours to be worked each week, the number of paid holidays and sick pay, manning requirements and a whole host of other factors including the description of the job to be done by each worker and an allocation of that job to a particular union. The usual situation is to have a number of unions represented within the one enterprise and many industrial disputes take place between unions fighting over which jobs belong to which unions. Thus, on a large building site, carpenters are not allowed to operate lifts, drive trucks, pick up tools which have been dropped from one floor to another, or do other jobs that belong to other unions. These conditions are written into awards and are also legally enforceable. This structure of tribunals, and an award
system which tightly describes conditions of work, are encouraged and supported by the trade union movement although it is not necessary to be a trade union member to be covered by an award.

These labour market institutions were also important in the 1930s when, excluding the self employed, trade union membership covered about 50 per cent of the labour force and the federal tribunal successfully pursued an incomes policy which fully adjusted wages each quarter for past price changes. This indexation policy had been in place since 1922. Australia therefore has a long history of centralized wage fixing, income policies and a heavily regulated labour market.

In this paper, we discuss the impact of the depression on the regulated Australian labour market to provide a basis for speculation as to the effects of these institutional features. To facilitate the analysis we compare some of the Australian outcomes with those of the US labour market. In the US there was no centralized wage setting system and trade unions were not as extensive or as powerful. During the early years of the depression, trade union membership in the US covered only 9.5 per cent of the non farm labour force. This essay can be seen as a part of the recent literature which compares the relative performance, in the face of a large shock, of unregulated labour markets, in this instance the US, with those, such as Australia, which are dominated by consensus, incomes policies and centralized wage fixing. (See Bruno and Sachs (1984), McCallum (1986)).

In Part 2 we compare the performance of the labour markets in the US and Australia. There are three major conclusions. First, the macro wage outcomes for each country were much the same during the 1930’s, despite the different institutional frameworks. Both countries exhibited considerable flexibility in nominal wages but virtually no flexibility in real wages. Between 1929 and 1932 nominal wages fell about 20 to 25 per cent in each country but, despite unemployment rates of 19 per cent or higher, real wages were either constant or marginally increased. Since the depression was more severe in the US it might be said that the Australian labour market was more efficient. A high degree of trade unionism, combined with an
incomes policy based largely on real wage maintenance, produced marginally greater flexibility in nominal wages than in the US and much the same real wage outcome.

Second, job sharing within firms was very different in each country. In Australia, almost all of the labour market adjustment to the reduced level of labour demand seems to have fallen on the unemployed. For each one percentage point reduction in output one percentage point of the workforce was laid off. For the employed workforce average hours of work per week did not appear to be significantly affected by the depression and as far as we can tell labour productivity per hour did not fall. Job sharing within Australian firms appears to have been negligible. In the US, however, there was a strong degree of labour hoarding and job sharing. A one percentage point reduction in output was associated with less than half a percentage point reduction in employment.

In the second part of the analysis we discuss the pattern of unemployment. Once again there are two major conclusions. Third, in both countries unemployment duration during the depression was typically quite long, and once unemployed, workers found it very difficult to obtain a new regular job. In Australia, fifty per cent of the unemployed in 1930 had not found a regular job by 1933 and 65 per cent of those unemployed at 1933 had been without work for at least a year. Duration data are more difficult to find for the US, but that which are available present a similar picture. In the cities of Buffalo (New York), Lincoln (Nebraska), and Philadelphia (Pennsylvania) at least 60 per cent of the unemployed at 1933 had also been without work for a year.

In part 3 we provide more detail as to the effects of unemployment in Australia. We focus on the geographic dispersion of unemployment in cities and the extent of income loss experienced by the unemployed. It is quite clear that in Australia unemployment was primarily visited upon the lower socio economic groups who clustered together in particular parts of the cities. In some areas of Australian cities at June 1933, over forty per cent of the male labour force was unemployed. In other areas the male unemployment rate was less than 8 per cent. We have not been able to
match these data with unemployment in US cities but it is likely that there was a similar outcome there.

Putting all these points together a picture emerges of a regulated labour market in Australia which produced real and nominal wage flexibility to a degree similar to, or marginally better than, the less regulated US labour market. In addition, the duration of unemployment seems similar in both countries. Consequently, on the basis of these most commonly accepted criteria, the regulated Australian labour market performed as well as, or better than, the relatively free labour market of the US. The major difference between the two labour markets appears to lie in the inability of the Australian system to adjust hours of work and labor productivity per hour to the same degree that occurred in the US. The Australian system therefore appears to have been less equitable. Despite the emphasis of public discussion in Australia which focused on equality of sacrifice and sharing the burden very little sharing of jobs appears to have been done, especially within firms. The Australian system seemed to divide the labour force into two fairly distinct groups: the employed who maintained real wages, hours per week and tended to keep their jobs, and the unemployed who tended to remain without work for long periods of time.

2. THE AUSTRALIAN-US COMPARISONS

2.1 Real and Nominal Wages

The depression was largely imported into Australia by a considerable decrease in foreign currency earnings brought about by reduced export prices for agricultural commodities and a drying up of foreign capital inflows. Between 1929 and 1931 the Australian terms of trade fell 40 per cent and foreign capital inflows, which had been very important during the 1920s had fallen away to virtually nothing by 1931. Although there were some adverse domestic factors at work the depression was primarily a response to the balance of payment crisis, which led to tariff increases, an exchange rate devaluation and a large fall in national income. In the US the prevailing view is that the depression was initiated by domestic factors.
Indices for the GDP of each country, measured in real terms, are presented in Fig. 11.1 where it is clear that the depression was more severe in the US. Between 1929 and the trough of 1932, real GDP in Australia fell 9 per cent and by 1934 the recovery was well under-way as GDP had begun to exceed pre-depression levels. In the US, real GDP fell 28.5 per cent between 1929 and the trough of 1933 and did not reach its previous peak until 1937. Between the trough of the depression and the previous peak, real GDP fell an extra 20 per cent in the US. In these terms the depression can be thought of as being about three times worse than in Australia. In terms of income loss the depression was much the same in both countries, perhaps marginally worse in the US. In Australia, there was a large shift of expenditure from imports to domestic goods, and as international trade was relatively more important, the fall in the terms of trade was more serious and exerted a larger impact to reduce national income relative to output. In Australia during the 1920s exports averaged about 22 per cent of GDP. In the US the ratio was much lower, around 6 per cent.

Aggregate prices and nominal wages in Australia appear to have been very flexible (Fig 11.2). During the downsizing prices and wages fell together by about 20 per cent. During the recovery phase prices and nominal wages increased together. At this time most occupations were already subject to award rates of pay laid down by Commonwealth or State Arbitration tribunals. Wage tribunals set nominal wages but they were primarily concerned with the maintenance of real wages, and, during the crucial years before and after 1931 the Commonwealth basic wage was indexed quarterly for price changes. On February 1, 1931 and in response to a public hearing, the Commonwealth Court of Conciliation and Arbitration agreed, on application of employers, to reduce the basic wage component of all awards covered by its jurisdiction by 10 per cent. This was to be a real wage reduction to be followed by quarterly indexation for price changes. It is evident from Fig 11.3 that on average real wages were not reduced and the Commonwealth Court, although successful in its attempts to achieve full wage indexation for past price changes, failed in its attempt to cut real wages (See Gregory, Ho and McDermott (1986)). Apart from random year
Fig. 11.1: Real Gross Domestic Product Australia-USA 1921-1940


Fig. 11.2: Nominal Wage Rates Australia-USA 1920-1940

DEFINITIONS:

Australia: All industry wage-weighted average nominal weekly wage rate payable to adult male workers for a full week's work - divided by male standard hours worked per week at 31 December each year.

USA: Average earnings per hour for all employees (full time equivalent). Calendar year.

SOURCES:


USA: M.N. Baily, "The Labour Market in the 1930s", in J. Tobin (Ed) Macroeconomics, Prices and Quantities: Essays in Memory of Arthur M. Okun.
to year variations, Australian real wages measured in terms of consumer prices essentially remained constant between 1924 and 1934, after which there appears to be a slow drift downwards.

In Fig. 11.2 and Fig. 11.3 we also plot indices of the nominal and real wage for the US. The similarity of nominal wage outcomes of the “free market” in the US and the Australian centralized wage system operating a full wage indexation policy is very close. Only in one year 1934, is there a large difference between the two countries and during this year nominal wage increases are much less in Australia. After 1934, nominal wage increases are much the same in both countries, and if account is taken of the depressed output levels, which are much greater in the US, then the Australian economy seems to have produced greater flexibility of nominal wages. In Australia, a nominal wage reduction of 20 per cent was associated not only with one third of the output fall that occurred in the US but also in the face of an exchange rate devaluation of 20 per cent. The centralized system based on full wage indexation for past price changes appears to have been very effective at reducing nominal wages and ensuring that the nominal exchange rate devaluation translated into an even larger real exchange rate fall. This point is worth noting because so often in simple models it is demonstrated that a real exchange rate devaluation requires a real wage reduction. In Australia the real exchange rate devaluation was achieved without a real wage reduction.

In both countries, between 1929 and 1935, there are also minor differences in the path of real wages, relative to trend, but there is no evidence of a real wage increase in advance of the recession or a real wage fall in advance of the recovery. Real wages in both countries at the macro level appear to have an independent and fairly stable life of their own and seem to have played no part as an initiating force in the origins of the depression or in the economic recovery.

During the 1930s, the Australian institutional framework for centralized wage setting was regarded as a distinct advantage and the Arbitration Court was widely regarded as an institution which could facilitate wage flexibility. (Copland 1934),
Fig. 11.3: Real Wage Rates Australia-USA 1920-1940

DEFINITIONS:

- **Australia**: Nominal wage as in Fig 11.2 divided by private consumption deflator.
- **USA**: Nominal wage as in Fig 11.2 divided by consumer price index.

SOURCES:

- **Australia**: N.G. Butlin (1984) *op. cit.* Table Aa3, Col.(a), and Fig 11.2 source.
- **USA**: N.G. Butlin (1984) *op. cit.* Table U23 and Fig 11.2 source.
Reddaway (1938)). Reddaway comments on the Australian system as follows:

"Is there any advantage in having machinery for fixing the general level of wages, instead of leaving it to emerge from a large number of sectional decisions? The experience of this period surely shows that such a system is very valuable. The employment market in a country such as Australia does not, and never will, bear much resemblance to the text book version with its perfect competition, equality of opportunity, automatic adjustments and so on. Without some general system of regulation it is doubtful whether money wages could ever have been reduced sufficiently to preserve the exporter and encourage new manufactures; it is quite certain that the cuts would have fallen most unequally on different sections of the community. To secure the general fall in costs that was vitally necessary, a general system of regulation was almost indispensable." p.335

Reddaway probably had in mind a comparison with the UK labour market, where trade union membership was also high but there was no centralized wage setting. It is quite clear, from a macro perspective, that the wage outcomes in Australia were far better than in the UK where nominal wages did not fall significantly and there was a large increase in real wages. But it is important to note that the Australian institutions probably gave a greater degree of macro nominal wage flexibility than the "free labour market" of the US. With regard to real wages the outcomes seem much the same. It appears that in Australia the combination of trade unions and centralized wage fixing can do as well, if not better, than a free market and certainly better than a market with a high degree of unionism but no incomes policy. This experience supports to some extent the recent work on wage setting and unemployment which discusses the merits of neo corporatism (See Bruno and Sachs, (1984), McCallum (1987)).

2.2 Employment

Fig. 11.4 presents the unemployment rates for each country. Once again it is evident that the depression is more severe in the US. If we compare unemployment in 1929 with the peak unemployment of 1933, there is an increase of 22 percentage points in the US and 9 percentage points in Australia. This difference of 13 percentage points is approximately two thirds of the 20 percentage point difference in the output loss between the two countries. The Australian unemployment record therefore seems relatively worse than might be expected for the output loss experience. This behaviour
Fig. 11.4: Unemployment Rates Australia-USA 1920-1940

Definitions:

Australia: Average number of persons unemployed per year as a proportion of the labour force (all persons employed, including defence forces serving overseas, all persons unemployed, absences and some part-timers). Year ending 30 June (i.e. 1920-1919/20).

USA: Unemployed as per cent of civilian labour force. Average for calendar year.

Sources:


USA: N.G. Butlin (1984) op. cit., Table Aa33, Col. (f).
originates from the employment-output relationship and not from different participation rate relationships. The employment paths of each country are presented in Fig. 11.5.

During the period since World War II the usual response to an output fall in most developed countries is to undertake a high degree of job sharing within the firm. Hall (1980) suggests that in the US about two thirds of the adjustment to an output fall during the sixties and seventies takes the form of reduced employment and one third of the adjustment is in the form of job sharing through reduced hours of work and lower labour productivity. Similar relationships are evident in Australian post war data and it is the conventional view in Australia that job sharing was important, especially during the early years of the depression. This view is based largely on anecdotal evidence, media reports at the time and studies of individual firms. However, the macro significance of job sharing has never been assessed. There are no data available on actual hours worked in Australia nor is there an annual series on the number engaged in part time work. There are hours of work data for a full weeks work that are written into awards and these "official" hours per week increased marginally during the depression. The tribunals, therefore, did not attempt to facilitate job sharing within firms by altering the length of the work week that is written into awards.

We will draw inferences on the extent of job sharing primarily from the behaviour of labour productivity, measured on a per capita basis and not adjusted for hours worked or for short time working. If labour hoarding and job sharing through reduced hours worked per week are important, then labour productivity on a per capita basis should fall significantly as output falls and increase significantly as output increases. For example, if output were to fall by 10 per cent and all the labour input adjustment took the form of reduced hours per week then employment would remain unchanged and per capita labour productivity would fall by 10 per cent.

An overview of Australian labour productivity fluctuations during the interwar period is presented in Fig. 11.6. It is apparent that labour productivity tended to increase marginally during the depression period and that there is no pro-cyclical variation that might be expected on the basis of post World War II data. With the
Fig. 11.5: Non-farm Employment Australia-USA 1920-1940

SOURCES:  
Australia:  N.G. Butlin (1980) *op. cit.*, Table Aa34, Col.(n)-Col.(j)-Col.(a).  
USA:  N.G. Butlin (1984), *op. cit.*, Table U22, Col.(g).
Fig. 11.6: Labour Productivity Australia-USA 1921-1940

DEFINITIONS: Australia: Real gross domestic product divided by civilian employment.
USA: Real gross domestic product divided by persons engaged.

USA: J. Kendrick (1961) op. cit. Table A-XIX, p.328, Col.2, and Fig. 11.1 source.
1930s data, and at this level of aggregation, all the adjustment to the recession and recovery appears to have taken place by varying the degree of idle labour resources outside the firm. On average firms did not significantly hoard labour or share reduced work hours among employees. Because employment varied proportionately with output, most of the adjustment was forced upon the unemployed.9

The Australian experience is very different from that of the US where labour productivity measured on a per capita basis, and not adjusted for hours worked, drops by 15 per cent between 1929 and 1933 and then increases rapidly as output increases after 1934 (Fig 11.6). Indeed, between 1929 and 1933, about one half of the output fall in the US is translated into a labour productivity adjustment and one half into a reduction of employment. Labour hoarding seems more important than Hall suggested for the post war period.

This difference in labour productivity behaviour between the two countries is very important. Any judgment as to the relative depth of the depression will depend on whether output or labour market outcomes such as employment or unemployment are used as the measuring rod. On the basis of the output experience the depression is far more serious in the US but with respect to measured unemployment the depression appears to be only marginally worse.

The difference between the product and labour market outcomes can be illustrated from the following calculations derived from data in Table 11.1. If, for the given output paths, labour productivity in Australia had behaved in the same way as in the US, then, ceteris paribus, the increase in measured unemployment in Australia could have been significantly less, perhaps increasing to around 12 percent of the labour force rather than 19 per cent in 1932. Or, putting the point the other way, if per capita labour productivity in the US had behaved in the same way as the Australian series, then, ceteris paribus, unemployment in the US would have been 39 per cent at 1933 instead of 25 per cent. Of course, since these calculations assume a given output path, they are very rough, but they do provide some indication of the quantitative importance of the different labour productivity behaviour.
<table>
<thead>
<tr>
<th>Changes in:</th>
<th>Australia 1929-31</th>
<th>Australia 1931-35</th>
<th>USA 1929-31</th>
<th>USA 1929-33</th>
<th>USA 1933-37</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. GDP</td>
<td>-8.1</td>
<td>14.3</td>
<td>-14.3</td>
<td>-28.9</td>
<td>47.4</td>
</tr>
<tr>
<td>2. Expected Employment</td>
<td>-8.1</td>
<td>14.3</td>
<td>-15.7</td>
<td>-31.1</td>
<td>42.9</td>
</tr>
<tr>
<td>3. Actual Employment</td>
<td>-8.9</td>
<td>13.4</td>
<td>-10.6</td>
<td>-16.9</td>
<td>21.7</td>
</tr>
<tr>
<td>4. Employment Absorption</td>
<td>-0.8</td>
<td>-0.9</td>
<td>5.1</td>
<td>14.2</td>
<td>-21.2</td>
</tr>
<tr>
<td>Accounted for by changes in:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Hours Worked</td>
<td>n.a</td>
<td>n.a</td>
<td>3.1</td>
<td>5.6</td>
<td>1.1</td>
</tr>
<tr>
<td>6. Productivity per hour</td>
<td>n.a</td>
<td>n.a</td>
<td>2.0</td>
<td>8.6</td>
<td>-22.3</td>
</tr>
<tr>
<td>7. Total Employment Absorption</td>
<td>-0.8</td>
<td>-0.9</td>
<td>5.1</td>
<td>14.2</td>
<td>-21.2</td>
</tr>
</tbody>
</table>

**Sources:**
- Australia: Tables Aa 2, Aa 34, Butlin (1984)
  Man hours. Table A-X, Kendrick (1961), p312.

**Calculations:**
- Trend Labour Productivity, 1.8 percentage points p.a.
  Calculated as the averaged from 1919-1928.
- Hours Worked. Calculated using 1929 as a base.
- Source: Kendrick (1961), Tables A-VI, and A-X,
  Productivity per hour calculated as a residual.
We don't really know why the extent of job sharing in Australia appears to be so different from that of the US. However, it is worth spending a little time considering a number of conjectures. To begin, we divide the Australian depression years into two segments: (a) 1929 to 1931, which is the period between the previous peak and the output trough (b) 1931 to 1935, which are the first four years of the recovery period. A similar division is undertaken for the US: (a) 1929 to 1931, to coincide with the Australian downswing, (b) 1929 to 1933, which is the period between the previous peak and the output trough, and (c) 1933 to 1937, which are the first four years of the recovery. The basic data for these subperiods are presented in Table 11.1 where the data for each row are defined as follows:

Row 1: The percentage output change for each period. In subsequent rows we partition the relationship between output and employment variations into the following components:

Row 2: Expected Employment Change. This is the employment change that would have occurred, given the change in output, and calculated on the assumption that labour productivity per capita remained on trend.

Row 3: Actual Employment Change.

Row 4: Total Employment Absorption. This is calculated by subtracting the actual employment change from the expected employment change. Employment absorption represents the adjustment in employment that did not occur because labour productivity per hour (Row 6) and average hours worked per week (Row 5) adjusted to the large change in output.

Row 5: Hours Worked. This is the change in employment that did not occur because average hours worked per week responded to the output variations.

Row 6: Productivity per hour. This is the change in employment that did not occur because hourly labour productivity deviated from trend in response to the output variation.
This classification system can help us to analyse the different experiences of the two countries. Consider first the 1929 - 1931 period. It is obvious that in Australia most of the labour market adjustment falls upon employment. The combined effect of adjusting hours worked per week and productivity per hour is not only quite small but in the wrong direction, reducing employment by 0.8 per cent.\textsuperscript{10} This is in stark contrast with the US experience where, in response to the output fall, these two factors cushion almost a third of the employment adjustment. Without these factors employment would have fallen another 5.1 percentage points in the US and, in the absence of a labour supply response, unemployment in 1931 would have been 21.3 percent of the civilian employment instead of 16.3 per cent.

These differences between the two economies is even more noticeable if we compare the full downswing in both countries. Over the 1929-1933 period the adjustments to labour hoarding and weekly hours worked in the US now account for 45 per cent of the labour market response. Without these adjustments, ceteris paribus, employment in the US would have fallen a further 14.2 percent and, in the absence of a labour supply response, unemployment in 1933 would have been 39.4 percent of the civilian labour force instead of 25.2 per cent. This is a massive change in unemployment.

Finally, we look at the recovery phase where most of the employment absorption responses of the downswing are reversed. In the US, the employment increases of the recovery phase are moderated, as hourly labour productivity rapidly converges back to its trend level. Average weekly hours worked, however, does not return to the 1933 level and consequently, for given output levels, the lower level of average weekly hours worked still continues to add to employment demand.(Fig 11.7) Over the whole period, however, it seems to be variations in hourly productivity which is the more important. In Australia, as expected from the experience of the downswing, the output increase translates fully into employment increases.

Most of the current discussion of labour market flexibility in Australia focuses upon wage outcomes of different labour markets with different institutional
Fig. 11.7: Productivity Measures for USA 1920-1940

DEFINITIONS:  
Output per person - gross domestic product (constant prices) divided by civilian persons engaged (National economy).  
Output per manhour - gross domestic product (constant prices) divided by civilian manhours (National economy)

SOURCES:  
structures. During the 1930s, and at least with regard to the comparison between Australia and the US, there does not appear to be a great deal of difference in wage flexibility of each country, or, if anything, the Australian system seems to produce greater flexibility. It is the responsiveness of work conditions over the cycle, as measured by variability in hours worked per week and variations in hourly labour productivity, that seem to be far more important, and it is here where the differences between the labour markets seem to lie.

Perhaps one reason for the different labour productivity responses may be found in the institutional structure of each labour market. In Australia, the average number of standard hours worked per week is written into awards and the combination of strong craft unions and a centralized arbitration system ensures not only a high degree of uniformity of working hours but also quite clearly places conflict over the length of the work week near the top of the bargaining agenda. At 1929 most Australian workers had already fought for and gained a 44-hour standard work week and both unions and the Arbitration tribunals were traditionally opposed to part time work and shorter hours to ration labour demand. In Fig.11.8 we plot an estimate of the average hours worked in the US and the standard work week written into Australian awards. It is evident that there is a very slow downward trend in standard hours worked in Australia as the 44-hour week spreads throughout the award structure. There are no sudden changes in response to the depression. In Australia, anything more than a very temporary reduction in hours would require a fundamental change in award agreements, and, as a reduction in hours worked, without a significant increase in hourly pay, would involve a reduction in the average real income of the employed labour force the same forces that lead unions to oppose real wage reductions also ensured that they opposed the systematic introduction of work sharing.

During this period the Tribunals did not seriously discuss job sharing and the emphasis of discussions within the ambit of the Federal Tribunal was to reduce real wages if possible. On Feb. 1, 1931, the Federal Tribunal attempted to reduce the Australian real wage by 10 percent. This was to be achieved first by inviting
Fig. 11.8: Weekly Hours Worked Australia - USA 1920-1940

DEFINITIONS:
- Australia: Male standard hours worked per week, all industries
- USA: (Man) Average hours worked per week for production workers, manufacturing.
- USA: (Total) Average hours worked per week, total economy.

SOURCES:
- Australia: M.W. Butlin (1977), op. cit. Table IV.4, p.87.
- USA: (Man) M.N. Bailey (1983) op. cit. Table 1.
- USA: (Total) J. Kendrick (1961) op. cit...
participating employers within the Federal system to apply for a 10 per cent real wage reduction and then, as more employers availed themselves of the wage reduction, it was anticipated that the real wage reduction would flow into the decisions of the State Tribunals. In the event, the initiative failed, presumably because trade unions were unwilling to have their real wage for a full time work week eroded and, on average, employers were prepared to accept that outcome and not avail themselves of the opportunity offered by the Commission.

This unwillingness to accept real wage reductions was naturally associated with opposition to reductions in the number of hours worked. This attitude is clearly seen in a Report to the Legislative Assembly of the State of New South Wales(1933) where it was stated that hours reductions,

"are to be regarded as a normal feature of economic progress, but as being of little value as a method of bringing general recovery ..." p.3

Furthermore, with regard to reducing unemployment it seemed pointless to ask employees

"to accept lower weekly earnings to make possible the employment of "outsiders". The chances therefore, of organizing a shorter week or fuller rationing on a scale sufficient to contribute to a rapid absorption of our own unemployed appear to be slight." p.3

It is noticeable in the US that the reduction of hours worked was not just a short run response to the depression. Average hours worked per week fell as output fell, but then did not recover back to its original level as employment increased. The hours reduction seems to have a long term, almost a permanent component. Between 1932 and 1937, for example, employment had increased by 22.7 percent but average hours worked per week remained at about 16 per cent less than the norm of the late 20's. On the basis of these data the trend appears to be part of a move towards a 44 hour week and not only a response to the effects of the National Industry Recovery Act during the 1932-1934 period (Darby (1976)). The depression perhaps accelerated the introduction of a shorter work week but this longer run influence was not the only
factor. Average hours worked fell far below that which might be expected from a movement to a 44 hour work week.

To help support judgments as to the importance of different labour market institutions it may be worthwhile to look at the UK economy where the degree of unionisation is similar to that of Australia, but where there is no centralized arbitration system. In the UK the extent of job sharing also appears to be relatively unimportant. Feinstein (1972) provides direct but partial estimates of the number of man years lost each year in short time and part time working. He suggests that 2.6 per cent of the total number of man years of employment takes the form of short time working, but, more importantly, this fraction does not seem to vary over the depression. The UK experience, therefore, seems to be similar to that of Australia. It appears as though trade unions oppose job sharing, although it must be said that the evidence offered here as to the cause of the different behaviour patterns across countries needs to be augmented quite considerably. There is some evidence, for the post World War II labour market in the US, that is consistent with our story it appears that the unionized sectors hoard labour to a greater degree during downswings than the non unionized sectors (Medoff (1979)).

There are other conjectures that should be mentioned as possible explanations for the different degrees of job sharing. The depression was more severe and a longer drawn out process in the US and it seems possible that the allocation of labour demand between hours and employment may depend in part upon the depth of the depression. The greater the output reduction the more likely it is that the firm will be faced with making inroads into skilled staff, perhaps with firm specific training, and, as a result, the greater the pressure for job sharing. For smaller output reductions perhaps most of the adjustment can be placed on unskilled workers and the skilled labour force can be hoarded for the time when output begins to increase. Although this may be part of the answer it does not explain the fact that the recovery process in the US led to significant employment growth but not to significant growth in average hours worked per week. Furthermore, in the initial years of the depression,
when the output fall was much the same in both countries, and expectations as to the future were probably similar, a different response was already detectable. 13

Finally, perhaps the macro data are wrong for one or both of these countries. However, to assess the quality of the estimated output, employment and hours data for the economy as a whole is a massive task (see Butlin (1962) and Keating (1973) for Australia and Kendrick (1961) and Lebergott (1964) for the US). We do, however, look at some of the relevant data questions in Appendix 1

2.3 Unemployment duration

Some indication of the ease of finding another regular job, once unemployed in Australia, can be found in the 1933 Census which included the following question:

"If out of work at the time of the Census state the number of days or weeks or months since last regularly employed."

From Row 1 of Table 11.2 we can see that the average length of time since unemployed males had a regular job in Australia was 109 weeks or just over two years. 14 For females, the average length of time since last regularly employed was 72 weeks or just over one year. These are very long spells indeed. Furthermore, these are interrupted unemployed spells, and most of those unemployed at June 1933 will remain without a regular job for a longer period. 15

The turnover of the unemployment pool was so low during the early 1930s that the history of the depression is evident in the distribution of unemployment duration. For example, at June 1933 more males were unemployed 3-4 years than 2-3 years and more males were unemployed 2-3 years than 1-2 years. None of the post World War II recessions has been severe enough to produce this pattern. In the post World War II data there are always fewer males unemployed 3-4 years than 2-3 years and fewer males unemployed 2-3 years than 1-2 years and so on.

Another indication of the low turnover of the unemployment pool is given in Table 11.3 where the unemployment duration data from the Census has been combined with Butlin's (1977) estimates of employment and unemployment for the years 1929
or 1933. These data will enable us to calculate an estimate of the probability of getting a job once unemployed during the 1930s. Col. (1) of Table 11.3 lists the change of employment in each year. It provides an indication of the course of the depression. The worst year for employment loss was 1930/31, when 7 percent of jobs were lost. By June 1933 the employment recovery is well under way. Col. (2) lists the change in the labour force and it is apparent that there was a strong discouraged worker effect operating. During the years of the greatest job loss the labour force contracted and during the upswing of 1932/33 all the employment growth was matched by an increase in the labour force. Consequently, measured unemployment and its duration only tell part of the story of unutilised labour resources outside the firm.

Col. (3) lists the unemployed of June 1933 by the year in which they were last regularly employed and Col. (4) is the estimated number of unemployed each year. These two columns are combined in Col. (5) to provide an estimate of the percent of the stock of unemployed each year that is still jobless at June 1933 and has not had a regular job in the interim. Thus, in 1929/33 there were 250,000 unemployed of which 125,000 (43,000 + 82,000), or fifty per cent had not found a regular job by June 1933, three years later. Similarly, fifty-one percent (214/419) of the unemployment stock of 1930/31 had not found a regular job by June 1933 and so on. These ratios indicate a very low turnover of unemployment.

Although nation wide data are unavailable it appears as though the US experience is not that different. Woytinsky (1942) provides data for three cities, Buffalo (New York), Lincoln (Nebraska) and Philadelphia (Pennsylvania). For each of these cities there are data for 1933 and for Philadelphia we also list data for 1935 (Table 11.2). It is striking that the distribution of unemployment duration seems so similar across the countries. In each instance, the proportion of unemployed males who have been without a job for more than a year is between 60 and 68 per cent and for females the proportion is between 43 and 51 per cent. The profiles of unemployment for males in Lincoln, 1933, and Philadelphia, 1935, are almost identical with the Australian data. To the extent that these cities are typical of the US
### Table 11.2

**Unemployment Duration, 1933, 1935, 1939**

Percentage Whose Uncompleted Spells were of Duration

| Year | MALES | | | | | | | | | | |
|------|-------|---|---|---|---|---|---|---|---|---|
|      | Average Duration of Uncompleted Spell weeks | 4 weeks less than 4 weeks | 13 weeks less than 26 weeks | 26 weeks less than 52 weeks | 52 weeks less than 104 weeks | 104 weeks less than 156 weeks and over | longer than 1 year |
| 1933 | Australia | 109 | .04 | .08 | .09 | .14 | .14 | .19 | .33 | .65 |
|      | Buffalo | n.a. | .08 | .12 | .07 | .06 | - | - | - | .68 |
|      | Lincoln | 100 | .07 | .06 | .09 | .14 | .19 | .24 | .22 | .64 |
|      | Philadelphia | 80 | .50 | .07 | .06 | .22 | .34 | .18 | .08 | .60 |
| 1935 | Philadelphia | 114 | .03 | .06 | .06 | .15 | .18 | .16 | .35 | .69 |
| 1939 | Australia | 42 | .10 | .20 | .18 | .17 | .10 | .03 | .09 | .22 |
|      | United States | 65 | .03 | .14 | .35 | .18 | .31 | .06 | .09 | .46 |
|      | FEMALES | | | | | | | | | |
| 1933 | Australia | 72 | .11 | .15 | .14 | .17 | .16 | .14 | .13 | .43 |
|      | Lincoln | 80 | .08 | .05 | .11 | .25 | .19 | .16 | .16 | .51 |
|      | Philadelphia | 57 | .09 | .13 | .08 | .28 | .26 | .11 | .05 | .42 |
| 1935 | Philadelphia | 85 | .04 | .09 | .10 | .20 | .22 | .15 | .20 | .57 |
| 1939 | Australia | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| 1940 | U.S.A. | 47 | .03 | .15 | .20 | .16 | .13 | .06 | .06 | .25 |

**Sources:**
- Australia: 1933 Census
- USA: 1940 Census
- Woytinsky (1942).
### TABLE 11.3
Duration of Unemployment, Unemployment and the Change in Employment and the Labour Force, All Persons

<table>
<thead>
<tr>
<th>Year</th>
<th>Change in Employment(^1) (000) (1)</th>
<th>Change in Labour Force(^1) (000) (2)</th>
<th>Unemployed at June, 1933, Classified by year of last regular job(^2) (000) (3)</th>
<th>Number of Unemployed (000) (4)</th>
<th>Unemployed each year with No regular job by June, 1933. Per Cent (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre 1929/30</td>
<td>-88</td>
<td>-11</td>
<td>43</td>
<td>250</td>
<td>50</td>
</tr>
<tr>
<td>1929/30</td>
<td>-11</td>
<td>-1</td>
<td>82</td>
<td>89</td>
<td>51</td>
</tr>
<tr>
<td>1930/31</td>
<td>-170</td>
<td>-1</td>
<td>89</td>
<td>419</td>
<td>53</td>
</tr>
<tr>
<td>1931/32</td>
<td>-47</td>
<td>49</td>
<td>60</td>
<td>514</td>
<td>53</td>
</tr>
<tr>
<td>1932/33</td>
<td>+122</td>
<td>124</td>
<td>168</td>
<td>516</td>
<td></td>
</tr>
</tbody>
</table>

**Sources:**
2. 1933 Census.
3. Excludes those who did not state duration of unemployment. Census total unemployment is 481,000.
they suggest that the pattern of unemployment was not that different between the two countries. Unemployment was particularly concentrated on the long term unemployed and once a job was lost it was not easy to get back into regular employment.\textsuperscript{16}

By the end of the decade unemployment had fallen but the experience of the two countries was not the same. By 1939 unemployment in Australia had returned to the 1930 level of around 9 per cent but in the US the improvement was much slower and the unemployment rate was nearer 15 per cent (Fig.11.4). This different rate of recovery is also evident in the duration data. In 1939 the Australian government instituted a national register of males in anticipation of the manpower planning requirements of the World War II effort. This register included a measure of unemployment duration which can be compared with the duration measure as collected by the US census of 1940, and analysed by Margo in Chapter 9 (Table 11.2). In Australia, the average duration of an uncompleted spell of unemployment had fallen to about 40 per cent of the 1933 level. The reduction in the duration, however, was not evenly spread. There is still evidence of many long term unemployed who lost their jobs at the beginning of the decade. For the US, and on the assumption that the three cities are typical, the reduction in the average duration was much less, falling to about 60 to 80 per cent of the 1933 levels. Once again there is evidence of a considerable group of long term unemployed. In both countries, therefore, the unemployment pool seems to behave in much the same manner. Once long term unemployment is created it takes a long time for it to be reduced. In modern terminology hysteresis is evident in the data (Blanchard and Summers (1986)).

This evidence of an unemployment pool with low turnover is not consistent with a number of labour supply theories of unemployment during the depression. It is not easy to reconcile the long unemployment duration that is evident in Australia and the US with the following view of Lucas and Rapping (1969) who argue with respect to the US:
"Much of the unemployment during the 1930s is voluntary in the sense that measured unemployment ...(consists) of persons who regard the wage rate at which they could currently be employed as temporarily low and who therefore choose to wait or search for improved conditions rather than to invest in moving or occupational change " p.748.

As indicated in Section 2.1 the real wage did not fall in either country and the unemployment duration was far too long for this sort of explanation to be appropriate (See Darby (1976) and Kesselman and Savin (1978) for further comments.)

In Chapter 3, Thomas analyses unemployment duration data from the UK register of unemployment benefit recipients. On the surface these data present a very different picture. There seems to be many more short spells of unemployment. These short spells led Benjamin and Kochin (1979) to write,

"the late twenties and thirties were characterised by high and rising real income, and the high unemployment of those times was the consequence almost solely of the dole. The army of the unemployed standing watch in Britain at the publication of the General Theory was largely a volunteer army " p.74.

In the absence of the dole,

"unemployment would have been at normal levels through much of the period" p.44.

Benjamin and Kochin supply side analysis would seem to have little applicability to Australia and the US. The dole was very low in Australia and not generally available in the early years of the depression. It certainly did not pay enough to lead workers to prefer it to a job. And, as indicated earlier, there was little part time work that could be combined with the dole. The long duration of unemployment suggests that there was considerable hardship. There was no dole in the US and it appears as though unemployment was typically of long duration there. A demand side theory of unemployment seems more appropriate for both countries.

The question that is naturally posed, however, is whether it is possible to reconcile the data from the UK, on the one hand, with that from Australia and the US, on the other. This would be a major task but one possible reconciliation is that unemployment is of much longer duration in the UK than is indicated. This would come about by the unemployed in the UK experiencing multiple spells of
unemployment broken by jobs of short duration. The dole recording system would ensure that these breaks were measured but perhaps in Australia and the US the unemployed did not regard these short jobs as breaks in their unemployment duration and did not report them 17.

3. **Further Observations on Unemployment in Australia**

3.1 Geographic Dispersion of Unemployment within Cities

The Australian Census has always published unemployment data classified by local government areas (LGA's). In this section we look at the dispersion of unemployment across the LGA's of Sydney and Melbourne, the two largest cities. At 1933 the Sydney metropolitan area accounted for 24.4 per cent of the Australian labour force, while experiencing an unemployment rate of 24.7 per cent and the Melbourne metropolitan area accounted for 19.5 per cent of the labour force, while experiencing an unemployment rate of 18.2 per cent. In 1933 a LGA within these cities varied between a population size of 2,364 and 92,112 people.

Some of our analysis will involve the matching of LGA's between 1921 and 1933 so that we can discuss the impact of the depression on the spatial distribution of unemployment and incomes. Over this period there were some changes in boundaries so it was necessary to reduce the number of 1933 LGA's in our sample from 75 to 70. To facilitate the analysis the LGA's are grouped in deciles after ranking them by the rate of male unemployment, measured as a percent of the labour force. (Table 11.4)

It has always been believed in Australia, because job opportunities and wages are more evenly dispersed here, that the labour market produces more egalitarian outcomes than that of the US. Even so there is quite a wide dispersion in unemployment across LGA's. This can be seen from the 1921 data, a year of 5.8 per cent unemployment which was just above average for the 1920s. In the LGA decile with the lowest unemployment rate, male unemployment was 5.4 per cent of the labour force. In the highest unemployment areas the unemployment rate was 13.3 per cent. The same pattern of unemployment is observed in the female labour market, where
<table>
<thead>
<tr>
<th></th>
<th>MALES</th>
<th>FEMALES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1. Unemployment Rate</td>
<td>5.4</td>
<td>6.1</td>
</tr>
<tr>
<td>2. Unemployment Rate</td>
<td>13.1</td>
<td>16.5</td>
</tr>
<tr>
<td>3. Employment Rate</td>
<td>81.9</td>
<td>83.9</td>
</tr>
<tr>
<td>4. Employment Rate</td>
<td>73.5</td>
<td>71.1</td>
</tr>
<tr>
<td>5. Employment Loss</td>
<td>8.4</td>
<td>12.8</td>
</tr>
<tr>
<td>6. Proportion of the Employment loss that translates into an unemployment increase</td>
<td>77.4</td>
<td>77.9</td>
</tr>
<tr>
<td>7. Part Time Employment</td>
<td>3.3</td>
<td>4.2</td>
</tr>
<tr>
<td>8. Employed on own account</td>
<td>8.4</td>
<td>8.5</td>
</tr>
<tr>
<td>9. Employer</td>
<td>7.7</td>
<td>6.6</td>
</tr>
</tbody>
</table>

Source: 1921 and 1933 Census.
unemployment, after grouping by the male unemployment rate, ranges from 4.0 to 6.6 per cent. This dispersion of unemployment is not a random effect, nor is it primarily the result of job shortages in particular geographic areas. The geographic spread of Sydney and Melbourne is not that large and the transport system was quite good so that workers could generally move within the cities if jobs were available. The dispersion is primarily a reflection of the fact that socio economic groups tend to cluster together and live in particular LGA's.

The onset of the depression has little effect on the relative dispersion of unemployment. Those areas of relatively high unemployment in 1921 also experienced relatively high unemployment in 1933. A regression of the log of the 1933 unemployment rate of a LGA against the log of the 1921 unemployment rate produces an $R^2$ of 0.73 for the male equation and 0.67 for the female equation. Unemployment increases in all LGAs during the depression, increasing about two and a half times in the low unemployment areas and tripling in the high unemployment areas. By 1933 unemployment had reached 42.6 per cent of the male labour force living in high unemployment areas and 13.1 per cent for low unemployment areas. One way of looking at the depression is to say that the areas of the lowest unemployment in 1933 now experienced unemployment rates similar to the areas of highest unemployment during normal years.

Of course, increases in unemployment are not the only way labour markets adjust to depressed economic conditions. Where unemployment is highest we might expect reductions in the male participation rates, a greater degree of part time working and so on. To facilitate the calculation of a rough guide to these phenomena each of the remaining variables in Table 11.4 is expressed as a percentage of the population 15 years and over. Row 3 is the employment rate in 1921, Row 4 is the employment rate in 1933, and Row 5 gives the job loss between the two census dates which ranges from 8.4 percentage points in areas of lowest unemployment to 28.5 percentage points in areas of highest unemployment. It is evident from Row 6, which compares this job loss to the unemployment increase, that between 77.4 and 84.9 percent of the male job
loss was translated into unemployment increases and that hidden unemployment was not significantly higher, in proportionate terms, in those areas where the employment reduction was greatest. On the basis of this crude calculation hidden unemployment seems to have been around 20 to 25 per cent of the job loss and fairly evenly spread across geographic regions within the cities.

Part time employment by LGA was not collected in the 1921 Census. It is evident from the 1933 census, however, that although the overall extent of part time employment is not large it is correlated with the level of unemployment; the areas of highest unemployment experiencing the greatest rate of part time working. If hidden unemployment and part time workers are added to unemployment as a measure of the true underutilization of labour then the unemployment rate in the worst affected areas may well have been over 50 per cent.

Similar calculations for the female labour force are also shown in Table 11.4 and once again areas are ranked by the male unemployment rate. It is noticeable that female unemployment levels are positively correlated with male unemployment, especially in 1933 when female unemployment ranges from 8.2 per cent to 24.0 per cent. With regard to to the extent of job loss the story is different and complicated by the fact that the overall participation and employment rates increased in the interim between 1921 and 1933. Still, on the basis of a 1921 and 1933 comparison, it appears that during the depression the job loss among the female labour force was heavily concentrated in areas of high male unemployment. For example, in the two deciles of highest male unemployment females lost between 15 and 20 per cent of their jobs. This, however, is a much lower rate of job loss than that experienced by the male labour force. In the areas of low male unemployment the employment rate of females increased between the census dates by between 2 and 7 per cent. To a small extent therefore the behaviour of the female participation rate between the census dates widened the dispersion of the income losses of the depression by offsetting some of the job loss of males in low unemployment areas.
3.2 Income Maintenance

With such high rates and long duration of unemployment the extent of poverty must have been considerable. How did people survive?

In Australia, there was an extensive system of government income maintenance but the level of individual and family support was low. When the depression began sustenance or food rations was particularly important. To qualify it was necessary to have been unemployed for a significant period and not to possess any property which could be realised (except a house). The rations usually extended to milk, meat, bread and groceries and the family was taken as the basis of relief (See Bland (1934)). As the depression continued the ration system tended to be phased out and relief work, which was allocated according to family circumstances, became more important. Job sharing in the public sector - either a fixed number of days per week or a fixed number of weeks on and off - also increased as the number of full time workers employed on public works were partially replaced by part time workers (Snooks (1986))18.

Some quantitative estimate of the reduced income flows experienced by people can be found in the 1933 census, a year in which the male minimum wage for those under Commonwealth awards was 15.8 pounds. Table 11.5 presents the data for different income and population categories. For males in the labour force, 65.8 per cent replied that their income was less than the Basic wage, 37.2 per cent received less than a third of the Basic wage, and 12.5 per cent replied that they received no income at all for that year. For women, 88.8 per cent of the work force received less than the male Basic wage, 42.3 per cent earned less than a third, and 7.8 per cent reported receiving no income.

These income figures are very low, and there is no doubt that there was widespread poverty, but it is widely believed that there was considerable understatement of income in the census. The income data are not really consistent with the estimates of national income (Butlin (1966)), the labor productivity data of Fig 11.6, or the unemployment duration data, all of which suggest a much lower rate of
### TABLE 11.5
Income of Individuals - 1933

<table>
<thead>
<tr>
<th>Category</th>
<th>Proportion with Income</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
<td>Less than a third of Basic Wage</td>
</tr>
<tr>
<td><strong>MALES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breadwinners</td>
<td>12.5</td>
<td>32.7</td>
</tr>
<tr>
<td>Married with Dependent Children</td>
<td>5.4</td>
<td>18.9</td>
</tr>
<tr>
<td><strong>Wage and Salary Earners</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Time</td>
<td>n.a.</td>
<td>18.1</td>
</tr>
<tr>
<td>Part Time</td>
<td>n.a.</td>
<td>42.1</td>
</tr>
<tr>
<td>Unemployed</td>
<td>44.1</td>
<td>81.1</td>
</tr>
<tr>
<td>Total</td>
<td>11.3</td>
<td>36.3</td>
</tr>
<tr>
<td><strong>FEMALES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breadwinners</td>
<td>7.8</td>
<td>42.3</td>
</tr>
<tr>
<td>Married with Dependant Children</td>
<td>5.6</td>
<td>49.7</td>
</tr>
<tr>
<td><strong>Wage and Salary Earners</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Time</td>
<td>n.a.</td>
<td>36.1</td>
</tr>
<tr>
<td>Part Time</td>
<td>n.a.</td>
<td>65.4</td>
</tr>
<tr>
<td>Unemployed</td>
<td>50.8</td>
<td>38.1</td>
</tr>
<tr>
<td>Total</td>
<td>7.5</td>
<td>45.5</td>
</tr>
</tbody>
</table>

**Source:** 1933 Census.
job turnover and, by implication, a lower proportion of people reporting low incomes. A systematic reconciliation of these data with other indicators of national income remains to be done.

Ideally, we would like income data classified by family units but this grouping is not available from the Census. It is possible, however, to provide a very rough guide as to alternative possible sources of income available for the family.

First, it is apparent from Table 11.5 that married men with dependant children tended to report higher income than other men but again there are large numbers with low income. For married men with dependant children, 48.0 per cent reported income less than the basic wage, 18.9 per cent reported income less than one third and 5.4 percent reported no income at all for the year.

Second, it was unusual for married women to be in the labour force during the thirties so married women made very little contribution to family cash income. If the income of the 10 per cent of married women who received income are allocated evenly across married men, then married women would have contributed on average £8.5 per annum which is equivalent to about three weeks work paid at the rate of the male basic wage, or about 5 per cent of the average male income reported for 1933.

Third, it is more likely that single children living at home were more important from the viewpoint of supplementary income. If we were to assume that all single men and women under 29 years of age lived at home, and that all their income was spread evenly across families, then single men would add about £38 to family income, which is about twelve weeks work paid at the basic wage rate. Single women would add about £16, or about six weeks work. It should be stressed that these calculations are hypothetical since not all single people live at home with their parents, we do not know what proportion of income would be given to the family, the incidence of work among single people is not likely to be evenly spread across families and finally not every family had children living at home who were old enough to work. However, these rough calculations do provide some guidance in that they suggest that the income of children was probably more important than that of wives, and that even
with the income of children and wives it is still difficult to imagine how families
managed to survive.

4. CONCLUSION

This paper is an initial attempt at a systematic comparison of the Australian
and US labour markets and, as such, it casts the performance of the Australian
institutional structure in a new light. It suggests a reappraisal of the Australian labour
market performance during the 1930s.

First, nominal and real wage flexibility for a full time worker appears to be
much the same in both countries, or, if account is taken of the greater output loss in the
US, then it would appear that Australian institutions produced greater flexibility. On
the basis of these criteria our institutional structure performed as well as or better than
the comparatively free labour market of the US. Nominal wages rapidly followed the
price of primary commodities downward and real wage changes in both countries
remained very much on trend, playing no apparent role in the creation of the
depression or the recovery.

Today, there is considerable discussion as to the relationship between labour
market institutions and the extent to which economies can adjust to large shocks (see
Bruno and Sachs (1986), McCallum (1987)). Similar discussions are taking place in
Australia where it has become increasingly common to suggest that trade union power
be reduced and the system of wage tribunals modified to exert less influence. The
evidence from the 1930s suggests that with respect to wage outcomes the combination
of wage tribunals and trade unions worked as well or better than the comparatively free
labour market of the US. Of course, if the tribunals had not existed but trade union
strength and membership had been much the same then the Australian institutional
structure would have been more like that of the UK where there seemed to be less
nominal and real wage flexibility. It may have been necessary, therefore, given the
strength of unions in Australia that a tribunal system should also be in place to produce
these outcomes.
Second, with respect to the distribution of unemployment, the data seem to suggest that the two labour markets produced similar outcomes. Once unemployed, workers in both countries found it very difficult to get back into employment. Both economies produced a wide gulf between those with jobs and those without.

Third, the key difference between the two countries seems to relate to job sharing within the firm. The available evidence suggests that private sector job sharing was very important in the US and relatively unimportant in Australia. As a result, for a given path of output loss, the Australian economy produced much more unemployment. Instead of the widespread working of shorter hours within the firm the Australian system tended to throw people out of work, and once unemployed, the period without a new job tended to be very long.

Australian institutions have always placed a great deal of emphasis on egalitarian outcomes. And yet in respect of the labour market during the 1930s, and when measured against this criterion, it appears as though these institutions were not especially successful, at least when compared with the US labour market. Changes in real wages per worker employed full time and changes in unemployment duration were not that different in each country, but job sharing was. In the US the force of law was used to reinforce the market tendency towards shorter hours of work. In Australia, the tribunals, reflecting the views of the union movement and the community generally, refused to go down this path and thus reinforced the tendency not to share jobs.

Finally, the question of job sharing and hours of work during the depression has not been a well researched topic in Australia. As indicated earlier there have been studies of individual firms and government agencies, but the extent and significance of job rationing at the macro level has not been examined. We have brought to bear on this topic the implications of the existing national income (Butlin) and employment (Keating) figures for Australia. It may well be, in the light of our finding, that the data may be reworked and revised but the extent of revisions required to produce outcomes similar to the US would be quite significant. For example, if all the adjustment were to be made to only one of the series then we would be looking for a downward output
revision of about 7 to 10 per cent between 1929 and 1932, or an upward employment revision of a similar magnitude. We would conjecture that a revision of such a magnitude is unlikely and that the conclusion that job sharing was not as important here as in the US should he a robust one.

To conclude, it is not clear as to the effect this difference in flexibility had on the efficiency, or on the ability of the economy to recover from the depression. Does flexibility of hours worked and flexibility of labour productivity per hour make for a more resilient economy that can recover more quickly from shocks and grow faster? We will not know until the reasons for this different job sharing behaviour are fully understood.
FOOTNOTES

* R.G. Gregory and J. Hagan, Department of Economics, Research School of Social Sciences, Australian National University. Miss Ho is a graduate student at Stanford University. Most of the early work on unemployment duration was undertaken by L. McDermott in her honours thesis at Harvard University. The authors are grateful to Tim Hatton for constructive comments. Invaluable research assistance was provided by Eva Klug and Roslyn Austin.

1. At May 1983, 83.6 per cent of the male labour force and 89.7 per cent of the female labour force were covered by awards. It is not known exactly what proportion of wage and salary earners was covered by awards during the 1930s but the proportion of the industrial work force covered by 1923 has been estimated at 96 per cent. (Macarthy (1967)).

2. There are tribunals at the State and Federal level and the indexation policy often differed from one tribunal to another. Some States indexed the awards under their control less frequently than the Federal tribunal. A detailed history of each wage setting system can be found in the Labour Reports of the Commonwealth Bureau of Census and Statistics.

3. Farm output did not fall significantly in either country so in proportionate terms the loss of non farm output was even greater than the loss of real GDP. The farm sector share of GDP is about the same in each country so the non farm output loss is also about 20 per cent greater in the US.

4. The basic wage was the minimum of all awards that could be paid for a full week's work and was an identifiable part of each award. Consequently, those who were paid awards in excess of the basic wage did not receive full wage indexation. As a result there may have been significant changes in wage relativities during periods when the price level changed significantly.

5. In the UK nominal wages fell only 5 per cent between 1929 and 1934 and real wages increased by 11.3 per cent. N.G. Butlin (1984), Table B16.

6. Participation rates fall in Australia as unemployment increases between 1929 and 1931. The US labour force estimates (Lebergott (1964)) do not respond to the depression. This is not an important difference, however, in terms of the different unemployment behaviour.

7. There is some evidence of job sharing among miners (New South Wales Official Year Book, 1934-35, p.752), and in the railways (see J. Pincus (1985)). These instances, however, do not seem to affect the aggregate economy data in a significant way. Forster (1987) recently suggested that job sharing may have reduced the unemployment rate by three percentage points for the year 1931-32. After that date he believes that it rapidly decreased in importance.

8. Of course this is a very indirect measure of job sharing and labour productivity may be affected by a range of other factors including the nature of the production function within the firm (whether there are increasing or decreasing returns to scale), the market structure in which the firm operates (whether marginal cost is increasing or decreasing in equilibrium) and the changing distribution of output over industries and firms with different levels of labour productivity. Nevertheless, as a first approximation labour productivity on a per capita basis should be a useful indicator of the variations of average hours worked per week.
9. In terms of post World War II experience it seems odd that labour productivity did not change for two decades. Between 1959 and 1979, for example, labour productivity for the non farm sector measured on the same per capita basis increased 54 percent. It is natural, therefore, to question the quality of the data in the inter-war period. The lack of productivity growth, however, is consistent with the real wage series. Real wages are calculated from wage and price series that are independent of the employment and GDP estimates.

10. See Appendix 1 and Figure 11.9 for evidence of an insignificant adjustment to average hours worked in manufacturing.

11. It is difficult to explain why the hours outcome was so different across the countries, given that the real wage outcome was so similar.

12. At this stage we have not yet reconciled this view of the UK labour market with that suggested by Benjamin and Kochin (1979). They suggest that a large fraction of the unemployed workforce were working short time and choosing to combine this with the dole in preference to working full time.

13. It is also possible that the larger size of firms in the US and more capital intensive production technologies also played a part. It would be possible to pursue this conjecture further with the available data (see Bernanke (1980), Haig (1975)). It would also be possible to look at the effects of the different industry mix in each country, although at the broad industry classification the two economies seem almost identical. In 1929 the proportions of employment in various industries are as follows. Australia: Manufacturing 21%, Construction 10%, Farm 22%. USA: Manufacturing 22%, Construction 5%, Farm 20%.

14. Note that those unemployed who have never had a regular job are excluded from the estimates of unemployment duration. Also, and perhaps more importantly, the duration of unemployment calculated from responses of the unemployed may include spells of non regular jobs.

15. Long unemployment duration was probably not the rule before the depression. In 1921, average unemployment duration, as reported by the Census, was 9 weeks for both males and females and about 70 percent of the unemployed had been jobless for less than 12 weeks. The question asked in the 1921 Census was slightly different from that asked in 1933, but that should not significantly affect this comparison. The question was, "If out of work on 2nd April, state number of working days since last employed".


17. This possible reconciliation, however, would raise doubts as to the Feinstein estimate of little short time working in the UK. If large numbers of the unemployed are to be combining the dole with part time work then there should be greater evidence of job sharing.

18. See Kesselman and Savin (1978) for a description of the US Work Relief Schemes.

19. The Haig output series are constructed from physical production measures and the construction is completely independent of the employment series and the price deflators.

20. The Butlin national income series, which we have used throughout the text, are the standard data source for Australia.
Appendix 1

JOB SHARING IN THE MANUFACTURING SECTOR

B.D. Haig (1975) has provided a production index series for Australian manufacturing, based on production indices of 100 manufacturing sub-classes, which can be compared to the Butlin estimates of the gross domestic product in manufacturing.\(^{19}\) The Butlin manufacturing series is similar to his non-farm series in that labour productivity does not change in a pro-cyclical way during the depression.\(^{20}\) Over the four years 1929 to 1933, when manufacturing output falls by 24 per cent, labour productivity in manufacturing first increases and then returns to the 1929 level. Once manufacturing output expands labour productivity begins to fall. This behaviour is the opposite to labour hoarding and job sharing. There are other puzzles too. At the end of the decade, despite manufacturing output being 16 per cent greater than the previous peak of 1929, labour productivity is still 6 percentage points less.

The Haig series, Fig. 11.9, indicates the expected job sharing story but the propensity to hoard labour, or to work short hours, is very mild and not as marked as the US. According to the Haig estimates, between 1928/29 and 1931/32, manufacturing output fell 29 percent and was accompanied by a 5 percent reduction in labour productivity per person. In the US, manufacturing output fell by 46.2 per cent over the same period and productivity per person fell 16 per cent. Consequently, even if we preferred the Haig estimates of manufacturing output to those of the Butlin estimates, it would still be the case that job sharing in this sector is relatively unimportant and certainly much less important than in the US.

There is also other macro evidence of very little job sharing among the employed labour force which does not depend upon labour productivity comparisons. If the average weekly wage bill for manufacturing, measured in real terms, is divided by the employed labour force an average weekly earnings series is produced that reflects variations in hours worked. This series varies in a similar way to the average award real wage series for a full time unchanging standard work week, and this is
despite a 40 per cent reduction in manufacturing employment (see Fig 11.10). The behaviour of these two series suggests that in the Australian manufacturing sector part-time employment per week, or reduced average hours of work per week, were not important responses to the depression. If they were then average earnings per week would fall relative to the average wage for a full week's work. However, we find the opposite result on the down-swing. Award wages fall faster than the series for factory earnings. As the factory earnings series is calculated on an annual basis and the award wage series are calculated at quarterly intervals, this suggests that the data are dominated by leads and lags associated with the indexation of award wages for past price changes and that the effect of variations in hours worked per week on average earnings is trivial. This view is supported by the results after 1935 when the relationship between the series changes and the average wage earned in manufacturing begins to increase more than the award wage for the standard work week. Before 1935 prices were falling and after 1935 prices were increasing.

This brief analysis suggests that the results for the manufacturing sector are much the same as for the economy as a whole. The different behaviour of the labour market in each country seems to be a real phenomenon and not an artifact of the data.
Fig 11.9: Manufacturing Productivity Australia-USA 1921-1940

**DEFINITIONS:**
- **Australia:** Value of production per head in manufacturing.
- **USA:** Output per person in manufacturing.

**SOURCES:**
- **USA:** J. Kendrick (1961) *op. cit.* Table D-II, Col. 3, p.465.
Fig. 11.10: Average Wages for Australia 1922-1940

DEFINITIONS:
1. Average wage for a full week's work - all industries.
2. Average weekly earnings of factory workers.

SOURCES:
1. Labour Report (various issues, e.g. for 1929 see No. 20, p.66).
2. Production Bulletin (various issues, e.g. for 1929 see No.25, p.91).
REFERENCES


D. Copland (1934) Australia in the World Crisis, 1929-1933, Cambridge University Press.


J.R. Kesselman and N.E. Savin (1978) "Three and a Half Million Workers Never were Lost", *Economic Inquiry*, Vol.16, April, pp.205-225.


Report to the Legislative Assembly of the State of New South Wales, 1933.


AUSTRALIAN NATIONAL UNIVERSITY
CENTRE FOR ECONOMIC POLICY RESEARCH
DISCUSSION PAPERS

Discussion papers are available free of charge from: The Publications Officer,
Centre for Economic Policy Research, Research School of Social Sciences,
Australian National University, PO Box 4, Canberra ACT 2601, Australia.
(Tel:(062) 492247). Papers marked with * are no longer available. A complete list of
Discussion Papers (Nos.1-176) can be obtained on request from the Publications Officer.

1986

135 Gruen F.H., A Quarter of a Century of Australian Agricultural Economics: Some
Personal Reflections

Immigration. Now published as 'Immigrants in the Australian Labour Market',
Current Affairs Bulletin 63(4), 4-11.

* 137 Krakowski, J., Centrally Directed Economies and the International Monetary Fund

138 Brosnan, P. and J. Poot, An Econometric Model of Trans-Tasman Migration After
World War II

139 Chapman, B.J., Wage Policy Perspectives on the Accord. Now published in
Economic Analysis and Policy 16(1), 1-17.

140 Forsyth, P.J., Booming Sectors and Structural Change in Australia and Britain: A
Comparison. Now published in J.P. Neary and S. van Wijnbergen (eds) Natural

141 Beggs, J.J. and B.J. Chapman, An Empirical Analysis of Australian Strike Activity:
Estimating the Industrial Relations Effects of the Prices and Incomes Accord. Now

142 Haig, B.D., The Comparative Productivity of Australian Industry

143 Harper, I.R., Trends in Pension Fund Portfolio Management in Australia

144 Withers, G.A., Migration and the Labour Market: Australian Analysis

145 Anstie, R., Proposed Tax Changes and Their Effects on Investment in Housing

146 Arndt, H.W. and G. Dorrance, The J-Curve

147 Gregory, R.G., A. Daly and V. Ho, A Tale of Two Countries: Equal Pay for
Women in Australia and Britain


Horridge, M., Brian R. Parmenter and Peter G. Warr, *Buying Australian*


Booth, A.L., *Extra-Statutory Redundancy Payments in Britain*

Booth, A.L., *Layoffs with Payoffs: Explaining Non-Statutory Redundancy Pay Negotiations*

*Suzumura, Kotaro and Masahiro Okuno-Fujiwara, *Industrial Policy in Japan: Overview and Evaluation*


# Indicates those papers now available as Discussion Papers. Nos. 161, and 167 will be available shortly. The revised papers will be published as a single volume by Macmillan in mid-1988.


# 161 Quiggin, J., Australian Economic Growth: The Role of Special Interest Groups and Political Factors

# 162 Dixon, R., The Role and Consequences of Structural Change in Recent Australian Economic Growth

# 163 Carmichael, J. and N. Dews, The Role and Consequences of Investment in Recent Australian Economic Growth

# 164 Johnston, N., D. Harrison, M. Hardham and R. Brooker, The Role and Consequences of Fiscal Policy in Recent Australian Economic Growth

# 165 Freebairn, J., Australian Economic Growth: Labour Market Issues

# 166 Elek, A., Camilleri and M. Lester, The Role of Technological Change in Australian Economic Performance

# 167 Smith, B., The Role of Resource Development in Australia's Economic Growth


170 Beggs, John J. and Bruce J. Chapman, Declining Strike Activity in Australia 1983-85: An International Phenomenon?


172 Miller, P.W., Training in the Youth Labour Market in Australia

174  Dowrick, S., Bargaining and Income Distribution in UK Manufacturing

175  Gruen, F.H., Housing Australians: Puzzles, Policies; But No "Solutions"