

# WORKING PAPERS IN ECONOMICS

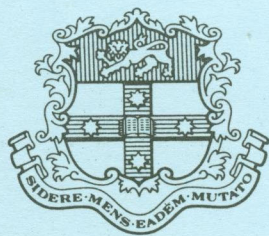
SOCIAL JUSTICE AND THE LOW-PAID WORKER

Flora Gill

No. 115

October 1988

DEPARTMENT OF ECONOMICS



The University of Sydney  
Australia 2006

# WORKING PAPERS IN ECONOMICS

SOCIAL JUSTICE AND THE LOW-PAID WORKER

Flora Gill

No. 115

October 1988

DEPARTMENT OF ECONOMICS



The University of Sydney  
Australia 2006

SOCIAL JUSTICE AND THE LOW-PAID WORKER

Flora Gill

No. 115

October 1988

National Library of Australia Card Number and ISBN 0 949269 81 6

### Acknowledgements

I wish to thank Tony Aspromorgos, Dick Bryan, Ron Callus, Dilip Dutta, Peter Groenewegen, Louis Haddad and Tony Phipps for their comments on an earlier draft of this paper. I also wish to thank the participants of the University of New South Wales' Social Welfare Research Centre seminar. I also wish to thank Nguyen van Anh for her most proficient and delightful research assistance. Finally, special thanks are due to Judy Yates for most inspiring help.

Social Justice  
and  
The Low-Paid Worker

I. Introduction

In the past many Australians have expressed considerable pride in having a system of wage fixing which was believed to pay heed to egalitarian motives. But recently demands have been mounting for wage flexibility and the introduction of a larger dispersion in wages. Unless these demands are accompanied by increases in the average level of wages, this can only mean a cut in the real value of the lower wages.

These demands are not confined to a small well defined group guided by self-interest. They appear to have gained currency even among those who in the past prided themselves on the protection that the wage-fixing system was believed to offer the lower paid. These former advocates of the system appear to have become embarrassed into feeling that we have gone too far, and that sheltering the lower paid from unfettered market forces is perhaps no longer necessary.

This raises a question. If these demands for greater flexibility and wage dispersion are granted, will we be dismantling a system which indulged in excessive egalitarian generosity towards the lowest paid members of the work force, or will we eliminate what is in fact a rather minimal level of protection?

What criterion can be used to distinguish between egalitarian elements in wage determination and the more limited wish to provide some protection against unfettered market forces. In proposing this dichotomy I am seeking to set apart two distinct notions of social justice. The first is a notion of social justice that requires as a minimum condition that all members of the community share in the fruits of economic growth. Perhaps the poor sections should even share disproportionately in the fruits of growth. In other words, the standard of living of the poor, both working and non-working, must not stagnate when the community at large is enjoying a rising standard of living; and, indeed, economic growth should be tapped to narrow the gap between the lower income groups and the remainder of the community. Egalitarianism, strictly speaking, requires equality of both income and its underlying wealth distribution. In speaking about egalitarian elements we inevitably have in mind a spectrum of which such strict equality represents the upper end. The principle defined by the first notion of social justice stated above, I believe, must be satisfied by any system which purports to be egalitarian, even just qualify for a position at the lowest end of the spectrum.

In contrast, a notion of social justice can be identified which aims only to ensure a given minimum standard of living for all. This is founded on the traditional (Victorian) notion of charity and does *not*, I believe, satisfy the minimum requirement needed to qualify as member of the class of egalitarian principles.

Which notion of social justice better characterises the Australian system of wage-fixing in the present century? The question has been much debated.<sup>1</sup> Ultimately, however, what really matters is not the intent or philosophy of

---

1. For a review of the academic literature involved in this debate see Gill 1987a pp. 210-214.

the system but how it has functioned. Because of varying economic circumstances, "snapshots" of the wage structure at specific times are inadequate, and only a broad historical review which takes into account changes in the economic environment can adequately resolve this question.

In previous work I have examined the empirical record of award-wage determination in Australia, with emphasis on the pattern of expansion and contraction in the wage structure (Gill, 1987 and Gill 1988a). In this paper I will concentrate on the broad picture which emerges from this work and its implications.

The conclusions drawn by the present paper indicate that in the community at large there exist serious misconceptions about the setting of minimum wages in Australia. These misconceptions are central to a range of socio-economic issues which arise in the context of current debates over reform, not only of wage fixing institutions, but also of social welfare policies in general.

Finally, since the magnitude of the 'Basic Wage' (set by the Federal wage tribunal from 1907 to 1967) and its successor the 'Minimum Wage' (set between 1967 and 1981), plays a crucial role in the construction of the 'poverty-line', the findings of the present paper are of relevance to this specific issue too. The observations offered by the present paper call for a re-examination of the principles underlying the presently used class of 'poverty-lines'.

## II. Some features of the historical record

The historical record reveals a pattern more consistent with the "minimum standard of living" notion of social justice than with a concept that all should share the fruits of economic growth. This runs against the conventional wisdom, which maintains that the system of wage fixation rigidly maintains pay relativities across and within industries over time. If that was so, all pay rates would move up at a uniform percentage rate, automatically guaranteeing that the fruits of growth were shared (although without contributing to any narrowing of the gap between the better off and the lowest paid). But, contrary to widely held beliefs, this has not been the case.

The main features of this picture are apparent in the aggregate statistical data which are readily available (see Figures 1 to 5).

First, ever since the mid 40s the real value of GDP per capital has sustained an average growth rate higher than either the Basic/Minimum Wage or the average award rate, a pattern which represents a marked departure from the past (as Figures 1 and 2 show).<sup>2</sup>

Secondly, the real value of the Basic Wage (1907-1967) and the Minimum Wage (1967-1981) have, in comparison, achieved an exceedingly modest rate of growth.<sup>3</sup> Under the old two-tiered wage system (which prevailed from 1907 to

---

2. Figure 2 is the logarithmic image of Figure 1 (and likewise Figure 5 is the logarithmic image of Figure 4). Whereas the indices in Figures 1 (3 and 4) compare the levels of the series in any point of time, the logarithmic presentation compares the rates of growth over any given time intervals. When the lines of series are parallel (in Figures 2 and 5) within any time interval this indicates an identical rate of growth over the respective time interval.

3. For the difference between the Basic Wage and the Minimum Wage and the corresponding 'two-tiered' wage and 'total wage' systems see Gill 1987b, pp. 8-9.

1967) the Basic Wage remained largely stagnant. Indeed, as Figure 2 shows, between 1946 and 1966 it was entirely divorced from the heightened rate of growth experienced in the real value in GDP per capital. In 1966, the real value of the Basic Wage was still a little above its original historical level in 1907 (Figure 3).

Thirdly, this deterioration in the relative position of the Basic Wage had immediate repercussions for the award rate of pay of lower-paid workers (Figures 4 and 5). Although in the post World-War II period all award rates of pay contained a component of Margin (so called 'Margin for skill') in addition to the Basic Wage component, the fate of low-wages was dominated by the Basic Wage because the Margin at the bottom of the award wage ladder was rather small. Empirical analysis involving the period 1953-1974 revealed that real value of award rates of pay for process workers and other workers classified as performing labourers jobs grew by only 4 per cent over the period 1953-1967 (Gill, 1988a, Table 1). Process workers and labourers-type job classifications, it should be pointed out, appear in virtually all the Awards which were included in the study (Gill, 1988a, Appendices I, II & III). Although the award rate of pay of the lowest-paid jobs experienced an accelerated rate of growth between 1967 (the year the total wage system replaced the two-tiered-wage system) and 1975, the rate of growth of real wages of lower-paid jobs still lagged behind the rate of growth in higher paid jobs even when the period 1953-1974 is considered as a whole (Gill, 1988a, Table 1). An examination of a smaller sample of pay rates drawn from the Metal Industry Award covering the period 1975-1986 reveals that the picture remains unaltered.<sup>4</sup>

---

4. For the period 1975-1986 our data set is confined to the Metal Industry Award. The data on award rate of pay for low-wage and high wage workers which underlie the respective graphs in Figures 4 and 5 during the period 1975-1986 represent extrapolation of the 1953-1974 series employing the sample of jobs from the Metal Industry Award.

These empirical results confirm propositions made earlier (Gill, 1987), where attention was focused on the historical profile of the Basic Wage during the 60 years of its existence. Examining the empirical literature dealing with the question of whether the Australian system has an egalitarian drift, and the historical record of Basic Wage fixing in Australia, I concluded that the system was not committed to maintenance of the relativities structure, let alone to a secular narrowing of gaps between low and higher award rates. Rather, it was argued, the (old) two-tiered wage system (1907-1967) was committed to the securing of a firm floor below which the real value of the wage in the lowest-paid jobs could not fall (Gill, 1987, pp. 214-217). This floor was virtually divorced from the fortunes of the standard of living in the community at large; a fact borne by the data presented in Figure 1.

The circumstances of the few occasions in which an increase in the real value of the basic wage eventuated represent exceptions which prove the rule. The first increase (the 'Power 3 shillings' in 1921) came in the wake of a Royal Commission (the Piddington) Inquiry which concluded that the basic wage did not meet minimum living requirements (Gill, 1987, p. 216). The Court's increase was significantly below the Commission's recommendation. The next increase in real terms occurred in 1937 in response to Keynesian-inspired arguments that a wage rise is urgently needed to boost domestic demand (Hancock, 1979, p.144). This increase, however, was not to be indexed (hence it eroded during the WWII inflation). Then came the increase which was finalized in 1949 (having been preceded by an interim increase in 1946). This 1949 decision was handed down by a split Court presided by Mr Justice Foster and vehemently opposed by Mr Justice Kerr (Gill, 1987 footnote 7), who subsequently became the next president of the Court.

Thereafter the Basic Wage was formally pegged to the 'economy's capacity to pay'. However, between 1953 and 1967 (the old two-tiered system was abandoned in 1967) the Basic Wage grew by less than two per cent in real terms. This in period of exceptionally high rate of economic growth (Gill, 1988a, pp. 11-12).

In conclusion, the continuous widening of award wage relativities over a quarter of a century (from 1953 to 1986) contravenes the myth that relativities are constant and its corollary, that the percentage increase in the average value of real wages also describes the rate of increase in the real value of the wages of the lower paid.

#### A note on over-award payments

This discussion must now briefly address the possible implications of over-award payments. As is well known the States' and Federal tribunal set only minimum rates of pay for workers whose jobs fall under their jurisdictions.<sup>5</sup> Indeed, since the 40s actual rates of pay have been above this set minimum. However, for the vast majority of workers the so called over-award payment has rarely formed more than 10 to 15 percent of the award rate (Brown et al. 1978, Gill, 1985 and Isaac 1965), an amount unlikely to explain the gap between the rate of growth in low-wages and the growth in GDP per capital during the post-World War II period.

Similarly, the gap between the rate of growth in high and low pay rates indicated by the profile of award

---

5. In the post World-war II period this included over 80 per cent of the nations work force. There is evidence that this has been declining during the recent decade.

stipulated rates of pay from the mid 40s is not likely to be eliminated by over-award payments. For the latter to be the case over-award payments should have been especially high in low-paid jobs. The available data, however, indicates that the rate of over-award payments (measured as a percentage of the award wage) had been either virtually uniform across the ladder (Isaac, 1965) or lower, rather than higher, for low paid workers (Brown et al. 1978).<sup>6</sup> The thrust of existing empirical evidence, therefore, is that over-award payments do not change the over-all historical picture of wage relativities between the low and the higher paid provided by award rates of pay.

#### On the incidence of low pay

'How many such low-paid workers have we had', readers of earlier drafts have often asked? An important question in its own right, but the central proposition made by the present paper does not really depend on the answer to this question, as shall be argued below.

A number of observations are pertinent. First, the precise or even approximate number of such workers is not known, but we do know that process-worker and labourer type jobs are to be found in a large number of industries; they exist in virtually all the awards in our study. Second, a snap shot picture of the frequency distribution of jobs is, in any event of limited value. The welfare implication of low paid jobs in a society where all occupants of such jobs are only temporarily

---

6. Survey data which was collected in 1987 shows that there is a substantial number of firms where over-award payments form a smaller percentage of award-specified rates of pay in low-paid jobs than in higher-paid jobs. It is highly probable that this differentiation in the rate of over-award payments is a relatively recent development reflecting labour market conditions of prolonged high level of national unemployment. A paper reporting these results is forthcoming.

there, in transit, en route to much higher paying jobs (e.g. resident doctors in hospitals) are very different from a society where low-paid jobs are not simply a step on a relatively fast moving career ladder, but a job which for a fraction of the work force is a long term, even lifetime, occupation.

Which of these two prototypes offers the relevant description will depend not only on the particular occupations and its stepping-stone structure, but also on the general state of the macroeconomy. Persistent stagflation is bound to lock an increasing number of people away from the higher rungs of the promotion ladder. Ultimately persistent recession modifies the conventions of promotion ladders themselves.

In any event, the fact remains that there has been a fanning-out of the wage structure whenever the average value of the real wage has sustainingly grown, rather than maintenance of constant relativities between low and high paid. Furthermore, in 1967, when the old two-tiered wage system was abandoned, there were still jobs whose specified award rate of pay was, in real terms, only marginally higher than wages awarded to base jobs in 1907.<sup>7</sup> Since then, the growth in the real value of these wages has continued to languish.

If actual average earnings of workers have grown faster, in the post-World War II period this reflects the opportunities which have been available for promotion, as well as the incidence of overtime and shift work, and to a very limited degree due to increase in the rate of pay for a given job for ordinary time in low-wage jobs. Caution is needed in inferring conclusions on the

---

7. The choice of the Basic Wage itself was guided by prevailing wage rates paid to labourers by "public bodies which do not aim at profit" (2 C.A.R. P. 6) at the time of the Harvester decision. On subsequent ENQUIRES into the basic needs of the average family see Hutson (1971, pp. 44-49).

contribution of the wage tribunals from the pattern of earnings, and from the pattern of *average* earnings in particular.

The wage fixing system has been increasingly under attack for (allegedly) granting excessive rise in the wage of the lower-paid jobs, and more generally for engendering an 'unduly compressed' structure of wages, allegedly because of its egalitarian bias. The empirical evidence does not tally with such propositions. Snapshot comparisons with other countries are limited to the point of deception and comparisons of rate of growth in wage rates and GDP over a small segment of history (e.g. 1972-1975) similarly yields a picture so partial that it totally misrepresents the secular performance of the award-wage fixing system.

#### And 'comparative wage justice'?

A comprehensive investigation of the origins of the belief that low and high award wages enjoy an equal rate of growth is beyond the scope of the present paper. It is nevertheless worth pointing out that a misunderstanding of the operational notion of the so called 'comparative wage justice' is one of the prime elements feeding into the constancy of wage relativities idea. The notion of comparative wage justice addresses horizontal comparison. It has traditionally focused solely on the notion that increase in the wage of say a tradesperson paid a given wage at one award (often associated with a given industry) forms valid grounds for seriously considering a similar rise in the pay of a job with a similar pay scale in another award (i.e. another industry). This principle if sufficiently potent<sup>8</sup> to override other considerations

---

8. Note that Isaac (1986) suggests that it has not been sufficiently potent.

then will imply an inter industry compression of wage differentials. The vertical structure of wages within each award, however, has not really been in the domain of concern of 'comparative wage justice'.

Why is it then that increases in the real value of the wage of the lower-paid jobs have been so meagre? There are two possible answers. Either we never really wanted to provide much more than a secure minimum standard of living (for the employed) or, alternatively, we unwittingly chose the wrong tool for the purpose.<sup>9</sup> The tool is indeed wrong. Although regulation of the minimum wage rate (or rates) is necessary, it is definitely not an adequate instrument if the target is to ensure that the fruits of growth are substantially shared. I shall discuss why regulation alone is an inadequate tool in more detail in Section V. The proposition that our policies are guided by an egalitarian sentiment is briefly examined in the following section.

---

9. Inappropriate use of potentially perfectly sound tools is, of course, another possibility.

### III. Egalitarian commitment?

Policies which are primarily concerned with the maintenance of a minimum standard of living are easily confused with more radical redistribution aims. For instance, when analysing the impact of fiscal measures implemented in the United Kingdom during the post-World War II era, Julian Le Grand (1982, pp. 150-151) concludes that although much egalitarian rhetoric was heard, the policies have had little redistributed impact. Le Grand argues that the prevailing ideology in the UK is one of inequality, and while it remains it will defeat any attempt to bring about genuine redistribution. Kenneth Arrow, writing in the United States, similarly argues that the rhetoric of equality which accompanies a variety of social policies is misleading. He suggests that a desire for security, an attempt to take the edge off unforeseen misfortunes, rather than a desire for redistribution *per se*, is the genuine motive underlying public support for various social welfare policies (1970, p. 185). Do these observations also apply to Australia?

This is a difficult question to answer. According to the Australian ethos, the answer should be no. But do most Australians genuinely believe that Australia is bent on egalitarianism in its social and economic policies, or is this primarily a myth propagated by the advocates of laissez-faire? Is it possible that the opposition to public regulation has succeeded in creating a myth which has been widely embraced? More fundamentally, do the majority of Australians believe that we should have egalitarianism as a goal?

The thrust of the evidence on award wage fixing has led me to a conclusion very similar to that of Kenneth Arrow, that in the popular conception of the system of wage arbitration the age old alms-giving sentiment has been unduly endowed with substantial egalitarian intent.

Julian Le Grand's observation might also apply - the ideology of inequality appears to have a stronger presence than the folklore would have it.

#### IV. The case for minimum wage regulation

Two distinct, and largely independent, arguments can be offered in support of regulating the minimum wage. The first rests on the notion of social justice which demands that no member of the society will be expected to sell his/her labour for a price which fails to reach a specified minimum level.

The second argument involves the structure of the economic system and the inequality of economic bargaining power between the individual worker and the employer in a totally "free market", or even the situation where organized labour is too weak to overcome the underlying asymmetry of bargaining power.

Both of the above arguments are vulnerable to the proposition that justice is bought at the cost of unemployment. This criticism has certainly occupied a central position in the free trade agenda. Indeed, the possibility that minimum wages are set at a level which will generate adverse employment effects cannot be denied. However, the ancillary claim at the core of the free-trade agenda, that unfettered market forces of their own accord guarantee that wages for any given employment level are at their maximum possible level, has little foundation.

Contrary to popular conception, this last claim is not automatically implied by the pure theory of microeconomics or by general-equilibrium theory. Rather these two theories are inappropriately invoked to support policy propositions whose validity depends on a whole set

of empirical assumptions which are implicitly grafted to the analytical constructs of general (neo-classical) economic theory per se.

In general there are likely to be sections of the economy where wage levels can be further increased without triggering any adverse effects on the level of employment. Among the underlying factors are the costs of adjustment (costs of geographical and occupational mobility amongst them) (Gill, 1984), asymmetry of information, and the lack of an adequate level of bidding activity.

The sceptic would hasten to say 'Yes, but how do you identify these particular pockets'? The answer is 'Yes, there is an identification problem, but this is an altogether different question'. The supporters of deregulation assert that such pockets do not exist, not that they are hard to discern. In some cases they would be hard to discern, in other others, they would be rather easily detected.

However, If the setting of the minimum wage is motivated by a notion of what is a fair economy-wide minimum price for the sale of labour, then adverse employment repercussions may well be acceptable, being met either by retraining programs or by a negative income scheme of some sort.

The implications of inequality of bargaining-power as a rationale for minimum wage regulation, however, are different. The very essence of the notion of unequal bargaining power suggests that what economists call "atomistic exchange" in the labour market (where employers and employees face each other *qua* individuals) could leave the employee with a wage far below the level potentially achievable by more equal bargaining power. A well-meaning regulatory body hampered by meagre information may indeed overshoot the true target (the

maximum attainable wage without loss of employment) and unwittingly trigger unemployment. But here again, this is a different issue altogether. The resulting unemployment is a possibility, but definitely not an inevitability!

Inequality of bargaining power is perhaps not an urgent issue when the labour market is very tight for a prolonged period. It becomes acute, however, when an economy plunges into a state of high national unemployment with no end in sight. The bargaining power of organized labour in general is greatly reduced when high levels of national employment persist. The case is much more acute for the low-paid worker. With little alternative employment prospects, the low-paid worker on her own in an over-crowded market cannot resort to a the quit-threat in an effective manner. It is a well-established empirical fact that the quit rate of the work force drops sharply as unemployment increases.

The need for protection, therefore, especially for the low-paid worker, is even more urgent if we are resigning ourselves to having a significant level of national unemployment for the foreseeable future.

#### V. The limits to wage regulation

Wage regulation, however, can achieve only very limited redistributed results. First, there is variation in the scope for wage increases between different groups of workers. Secondly, it is not practically possible to define the level of wage increase which will have only a negligible effect on the level of employment.

Underlying economic inequality sets a limit to the degree to which wage gaps can be narrowed. The wages of workers

with skills which are easily replaceable, whether because they are in sectors of the economy which are chronically over-crowded with workers or because of their poor education and work experience, cannot be pushed very far. Regulation is confined by the limits of the economic opportunities available in the economy, the distribution of wealth being one of the determinant factors. Unequal access to economic opportunities can only partially be removed by wage regulation and anti-discrimination legislation alone.

The history of wage arbitration in Australia, particularly during the 50s and the 60s, exemplifies the second set of factors which set limits to the redistributed impact of wage regulation. Without getting involved in the complex question of what notion of social justice, guided the decisions taken by the Federal tribunal, it is without doubt true that the tribunal was continuously concerned about the possibility of granting 'excessive' wage increases. In particular, it was wary of allowing generous increases in the value of the basic wage. Whatever the political and ideological factors may have been, risk aversion in decision making must be one of the factors which underlie the fact that the real value of the basic wage grew by less than 2 per cent between September 1953 and June 1967. This occurred despite the fact that this was the period when the basic wage component was formally linked to the 'economy's capacity to pay', and in which the economy experienced the highest rate of productivity growth in the present century. The real value of the award wages of lower paid experienced a larger increase because of the margins component. But this component was so small that the overall increase was only 4 per cent in real terms. In contrast, the recipients of higher award payments

received an increase of 16 per cent over the same period.<sup>10</sup>

## VI. Conclusions

In this paper attention has focused on the popular conception of wage arbitration, which plays a crucial role in the mounting agitation for so called 'labour market deregulation'. Whatever may be the hypothetical world which, it is envisaged, will emerge from such a reform, the agitation appears to have gathered a substantial momentum on the strength of the idea that an excessive egalitarian bias has dominated award wage fixing in Australia. The arguments in this paper lead to the conclusion that this conception does not tally with the historical record of the results generated by the arbitration system .

These results also bear on the long-standing debate about the degree of dispersion in the distribution of wages in Australia vis a vis the distribution observed in other Western countries. It has not been categorically established that significant statistical differences exist over time. 'Snapshot' comparisons between Australia and other countries have also yielded ambivalent results (Gill, 1987 and 1988a). However, the central conclusion of the present analysis is that the minimum award wage has achieved such poor growth in real terms over the current century that, even if it could be established persuasively that overall the wage dispersion in Australia is smaller than in other countries, the cause

---

10. These figures are calculated for the sample of all Federal awards which in 1974 determined wage and work conditions of at least 10,000 employees each. For more detail see Gill, 1987b Appendix and Tables 1 & 2.

could not be construed as excessive generosity to those at the bottom of the wage ladder.

The fact that the real value of the (male) Basic Wage in 1967 was only modestly above its value in 1907 (see Figures 1 and 3) not only undermines popular conceptions about the exceptionally egalitarian nature of wage arbitration in Australia but it also has very direct implications regarding the *poverty line*, since the latter has adopted the numerical value of the Federal Basic Wage as representative of the minimum income needed for a family of four. In addition, the rate of increase in the real value of the Basic Wage during the 60 years in which the two-tiered wage system operated (1907-1967) not only fell short of the average rate of growth of national income per capital (see Figure 2) but, particularly in the growth era of the 50s and the 60s, it also grew at a rate substantially lower than the average award-wage. In the light of this empirical picture, a reassessment of the poverty line should perhaps be considered. Any future regulation of (the now defunct) economy-wide Minimum Wage by either legislation or tribunal-determined, as in the pre July 1981 era, will have to link that wage to community standards if it is to soar above a mere alms giving act.

Workers who are locked into low-paid jobs for a significant part of their working life are at the mercy of the institutionally set minimum wage, especially in the economic climate prevailing in recent years.<sup>11</sup> If we

---

11. A survey of over-award payments conducted in 1982 (Gill, 1985) showed that for over half of the workers who receive over-award payments, the latter less than 10 percent of the award rate. Isaac (1965) found similar result for the 1960s. Preliminary analysis of empirical data collected last year shows fairly stationary average levels. This recent survey also contains data which allows correlation of award wage level with the percentage rate of over-award payments and the correlation is predominantly positive. In other words, low-paid workers receive smaller percentage increments via over-awards.

resign ourselves to a prolonged period of substantial unemployment, an increasing number will find themselves locked into low-paid jobs, the scope for occupational mobility being severely diminished. The bargaining power of such workers in a "deregulated market" is bound to be very poor indeed, and the wage rates earned by such workers are likely to drift downward.

The incidence of poverty among the unemployed has attracted attention, but as for the employed, Bradbury et al (1988) have detected a significant level of poverty only among the self-employed and in households a relatively large number of dependents. This must, at least in part, reflect the close affinity between the Minimum Wage and the poverty line. In other words, almost by definition, no poor households could be found among households with at least one full-time employed member and three or less dependents since for the poverty line is defined as being equal to the Minimum Wage level.

If our goal is to pursue the more radical concept of social justice described at the start of this paper, where even the lowest-paid share in the fruits of prosperity, it is clearly not sufficient to regulate wages. Fiscal policies involving increased public expenditure, both direct and indirect, are needed. These must go beyond social security payments, which tend to provide only a minimum standard of living. Rather, the aim must be a radical improvement in the equality of access to opportunities for gainful employment.

REFERENCES

- ABS, Catalogue No. 6312.0 *Award Rates of Pay Indexes, Australia*
- Arrow, Kenneth (1970) *Essays in the Theory of Risk Bearing*, North Holland/American Elsevir.
- Bradbury, Bruce, Diana Encel, Jenny James and Joan Vipond(1988) "Poverty and the Work force", *SWRC-Reports and Proceedings*, Social Welfare Research Centre, The University of New South Wales.
- Brown, W. and Fuller, D. (1978) "The Impact of Over-Award Pay Upon the Australian Wage Structure", *Australian Bulletin of Labour*, Vol. 5, No. 1, pp. 34-42.
- Butlin, M. W. (1977) "A Preliminary Annual Data Base 1900/01 to 1973/4" *Research Discussion Paper*, No. 7701, Reserve Bank of Australia.
- Gill, Flora (1984) "The Costs of Adjustment and the Invisible Hand; with Special Reference to the Labour Market" *Economie Applique*, Vol. XXXVII, pp. 523-544.
- Gill, Flora (1985) "Over-Award Payments; Results of a Survey Conducted in 1982", *Working Papers in Economics*, No. 85, Department of Economics, The University of Sydney.
- Gill, Flora (1987a) "Inequality and the Arbitration of Wages in Australia: an Historical Perspective", *The Australian Quarterly*, Winter 1987, Volume 59:2, pp. 210-221.
- Gill, Flora (1988a) "Some Cyclical features of Wage Fixing in Australia" (mimeo)
- Previous draft appeared as: "Determination of Wage Relativities Under the Federal Tribunal: 1953-1974", *Working Papers in Economics*, No. 97, Department of Economics, University of Sydney.
- Hancock, Keith (1979) "The First Half Century of Australian Wage Policy" *Journal of Industrial Relations*, Vol. 21, No. 1, pp. 1-19 and Part II in Vol. 21 No.2, pp. 129-160.
- Hutson, J. (1971) *Six Wage Concepts*, published by the Amalgamated Engineering Union, Sydney.
- Isaac, J. E. (1965) "Wage Drift in the Australian Metal Industries", *Economic Record*, Vol. 41, No. 94, pp. 145-172.



TABLE 1. INDICES OF REAL VALUES OF: GDP PER CAPITAL,  
AVERAGE AWARD WAGES (1907 - 1986) AND BASIC WAGE (1907-  
1966).

Year	GDP per capital (real)	Average award- wage (real)	Basic wage (real)
1907	100.0	100.0	100.0
1908	101.9	94.8	94.8
1909	105.7	97.4	94.8
1910	113.0	98.9	92.8
1911	110.8	100.1	90.0
1912	119.4	95.6	81.8
1913	117.9	97.9	97.4
1914	101.8	95.2	93.4
1915	111.2	85.4	82.4
1916	105.6	89.9	81.2
1917	101.7	88.9	76.0
1918	102.0	86.9	71.4
1919	94.4	86.1	63.0
1920	105.1	91.1	55.5
1921	110.3	110.2	89.3
1922	111.9	110.6	115.3
1923	114.1	111.5	115.2
1924	119.3	112.3	115.2
1925	113.6	114.7	115.2
1926	116.2	115.6	115.4
1927	113.1	118.6	115.2
1928	108.8	117.9	115.2
1929	108.3	116.1	115.1
1930	96.3	129.8	115.3
1931	97.5	117.2	104.6
1932	102.4	116.4	104.8
1933	105.3	118.3	105.0
1934	106.7	117.5	116.1
1935	111.1	117.6	116.0
1936	113.7	118.1	115.9
1937	119.9	121.8	124.3
1938	114.1	123.1	124.4
1939	119.3	122.1	123.7
1940	127.1	120.6	123.2
1941	144.9	122.4	122.6
1942	156.3	125.0	121.7
1943	152.9	124.4	121.3
1944	142.6	125.0	121.4
1945	135.2	125.9	121.4
1946	130.7	132.4	128.5
1947	139.5	136.4	128.0
1948	141.8	140.4	127.1
1949	148.4	137.4	126.3

1950	152.0	149.5	135.0
1951	152.8	152.4	134.5
1952	147.6	144.4	134.2
1953	154.0	141.8	134.1
1954	159.8	144.2	131.0
1955	163.9	146.9	128.4
1956	163.2	144.6	125.8
1957	163.1	143.6	127.9
1958	171.6	144.4	128.6
1959	177.0	150.0	133.5
1960	178.7	149.9	128.9
1961	176.3	150.6	131.0
1962	184.5	151.8	131.4
1963	193.4	154.8	130.7
1964	203.1	159.3	136.6
1965	202.4	157.3	131.3
1966	211.5	162.4	135.8
1967	215.2	165.1	
1968	232.9	171.9	
1969	241.3	175.7	
1970	246.9	183.7	
1971	248.3	189.8	
1972	255.1	197.4	
1973	265.6	213.2	
1974	263.6	241.8	
1975	266.4	241.2	
1976	271.8	234.6	
1977	269.9	222.8	
1978	278.6	223.0	
1979	278.9	220.4	
1980	285.5	227.1	
1981	288.3	236.7	
1982	277.7	222.3	
1983	288.5	220.3	
1984	300.6	217.5	
1985	309.9	211.7	
1986	312.1	204.6	

Source: GDP PER CAPITAL - GDP figures for the 1907 to 1949 Butlin (1977), for 1950 to 1983 RBA (1985) and RBA (December 1987) for 1984 to 1986; and POPULATION figures from Australian Yearbook 1939, 1942, 1960 (for the period 1907-1960). IMF Yearbook, 1987 (for 1961-1986).

AVERAGE AWARD RATES - 1907 to 1976 same source as for GDP. A.B.S. (November 1987) cat. No. 6312.0 for the period 1976 to 1986.

BASIC WAGE (1907-1966) the index is constructed using information given in Hutson (1971).

Table 2. INDICES OF REAL VALUE OF AWARD WAGES  
BY PAY LEVEL: 1953 - 1986

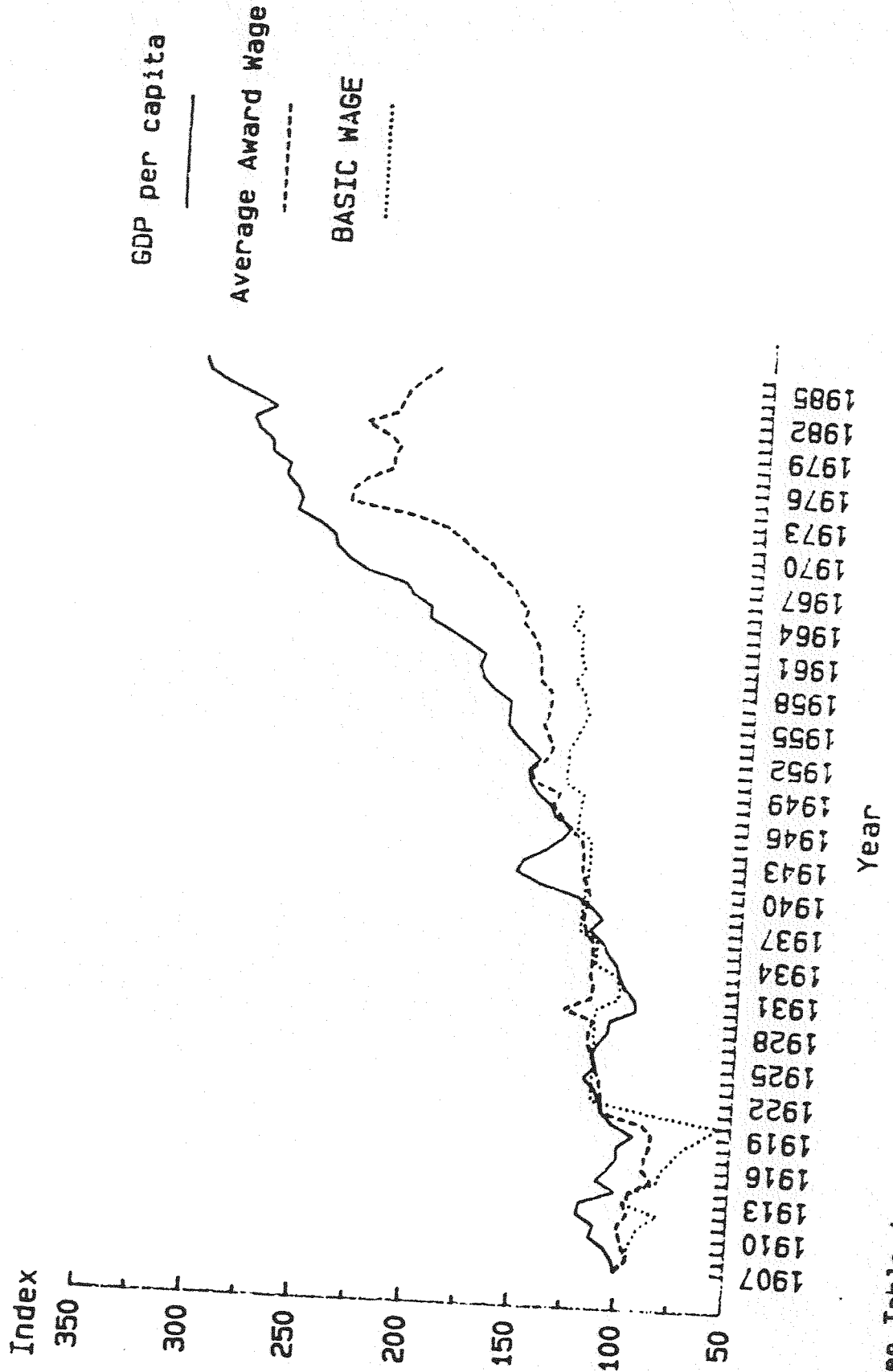
Year	Highly paid jobs	Low jobs
1953	100.0	100.0
1954	103.6	100.0
1955	103.9	99.8
1956	101.7	98.0
1957	104.5	96.8
1958	104.3	98.3
1959	111.1	98.4
1960	109.7	101.2
1961	110.8	97.9
1962	111.0	99.1
1963	113.7	99.8
1964	114.9	100.2
1965	113.3	101.4
1966	115.0	100.2
1967	116.3	103.1
1968	120.2	103.3
1969	123.9	104.3
1970	124.8	107.1
1971	127.7	104.6
1972	131.3	108.1
1973	130.6	111.6
1974	135.6	112.8
1975	125.7	119.6
1976	129.7	123.2
1977	131.7	118.0
1978	133.8	113.0
1979	135.0	110.2
1980	136.3	107.5
1981	137.3	108.4
1982	138.4	109.4
1983	139.2	110.3
1984	140.3	111.3
1985	134.8	107.1
1986	131.2	104.2

Source: (i) 1953-1974, (including 13 major awards under the jurisdiction of the Federal Tribunal), data collated from C.A.R. vols. 77-116 and (ii) 1974-1975 Metal Industry Award (courtesy AMWSU) involving exactly the same sample of jobs represented in the Metal Trade/Metal Industry Award which is included in the 1953-1974 data set. Data was collected for only 5 points of time in the 1975-1986 time interval [whereas (i) consists of a complete time series].

FIGURE 1:

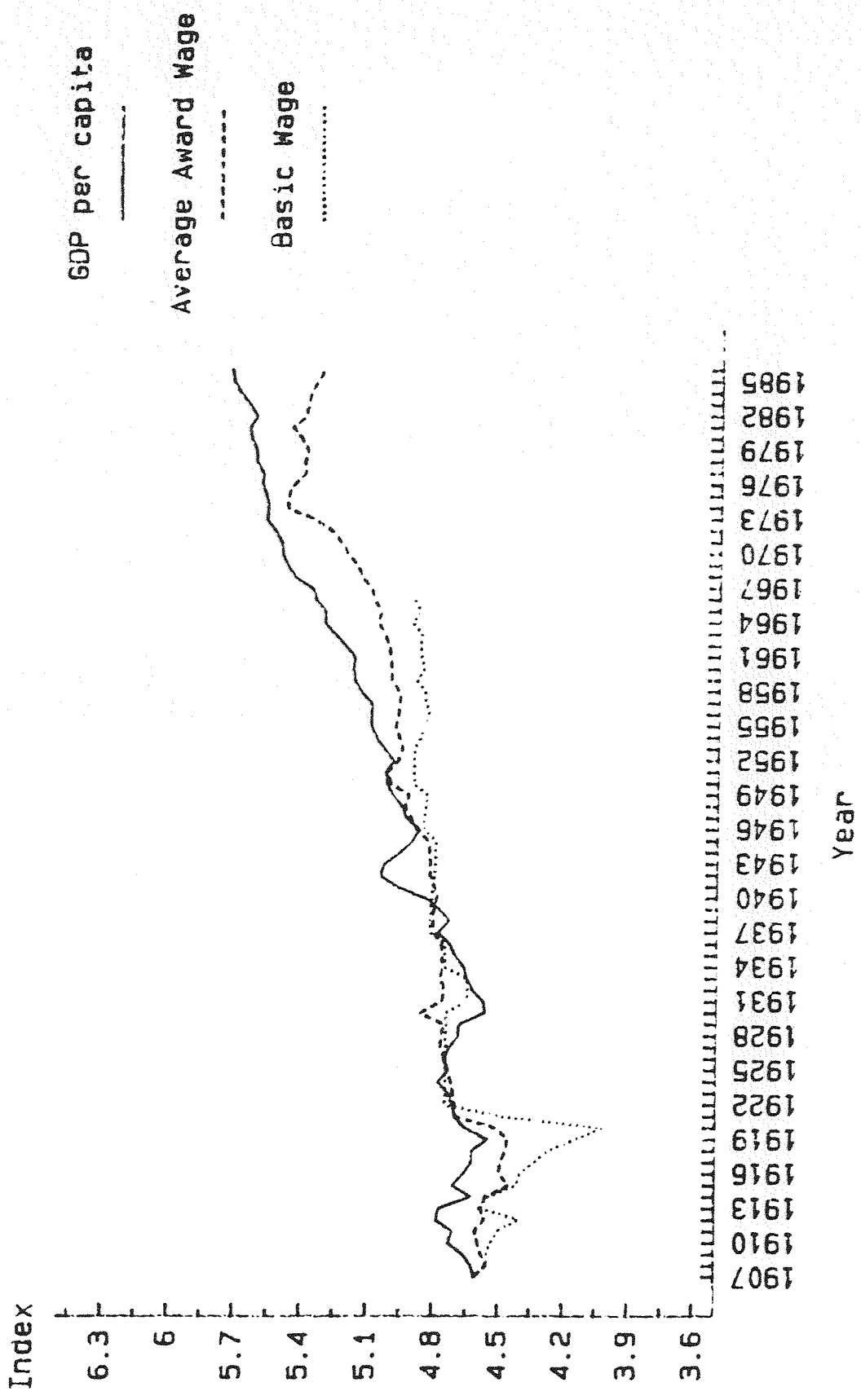
INDICES OF THE REAL VALUE OF:

- (A) GDP PER CAPITA, (B) AVERAGE ADULT MALE AWARD WAGE AND
- (C) ADULT MALE BASIC WAGE (1907 = 100): 1907-1986



Source: see Table 1

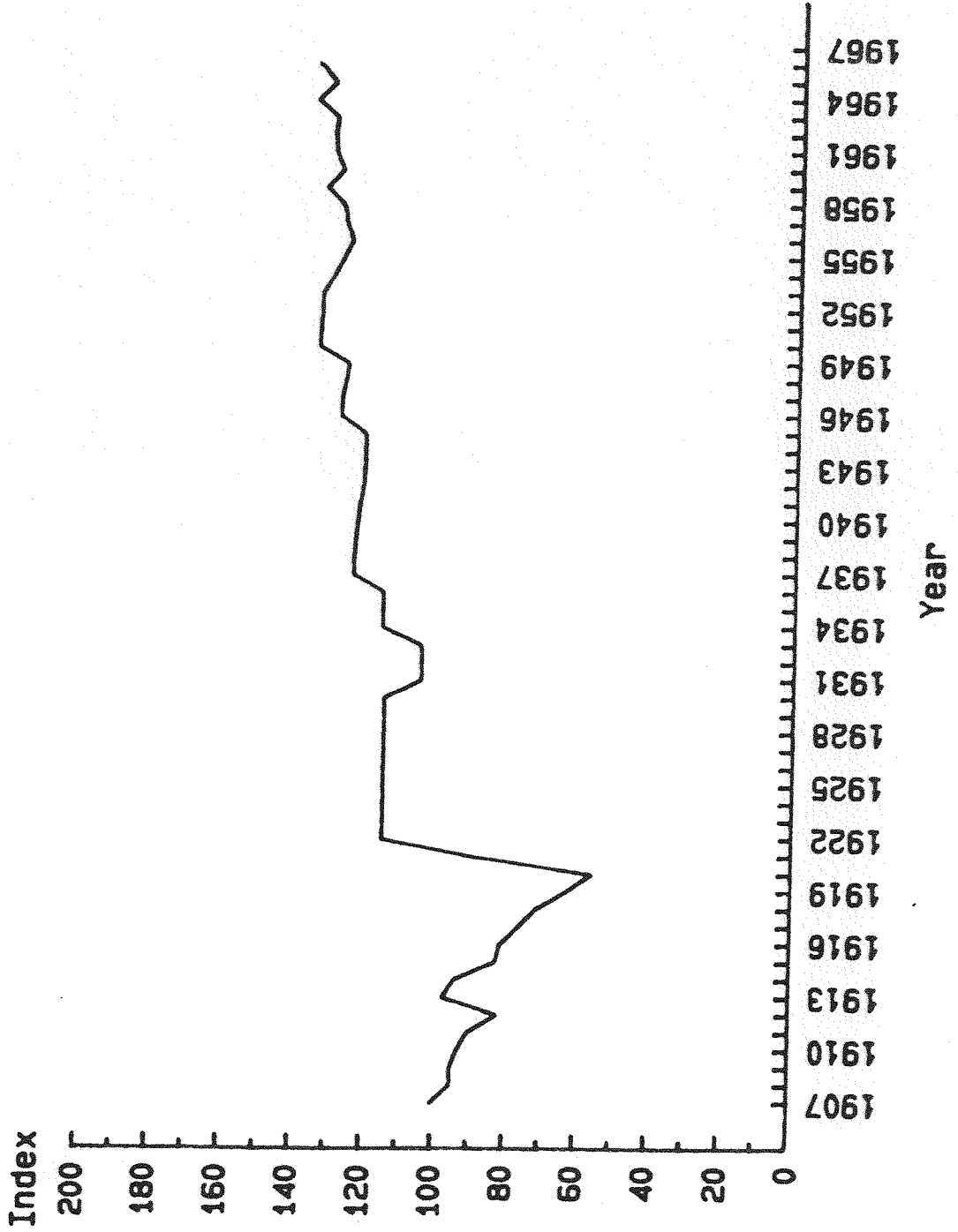
FIGURE 2: THE SAME INFORMATION AS IN FIGURE 1  
PRESENTED IN TERMS OF THE LOGARITHMS OF THE INDICES



Source: see Table 1

FIGURE 3: INDEX OF THE REAL VALUE OF THE ADULT MALE BASIC WAGE  
UNDER THE OLD TWO-TIERED WAGE SYSTEM (1907-1967)

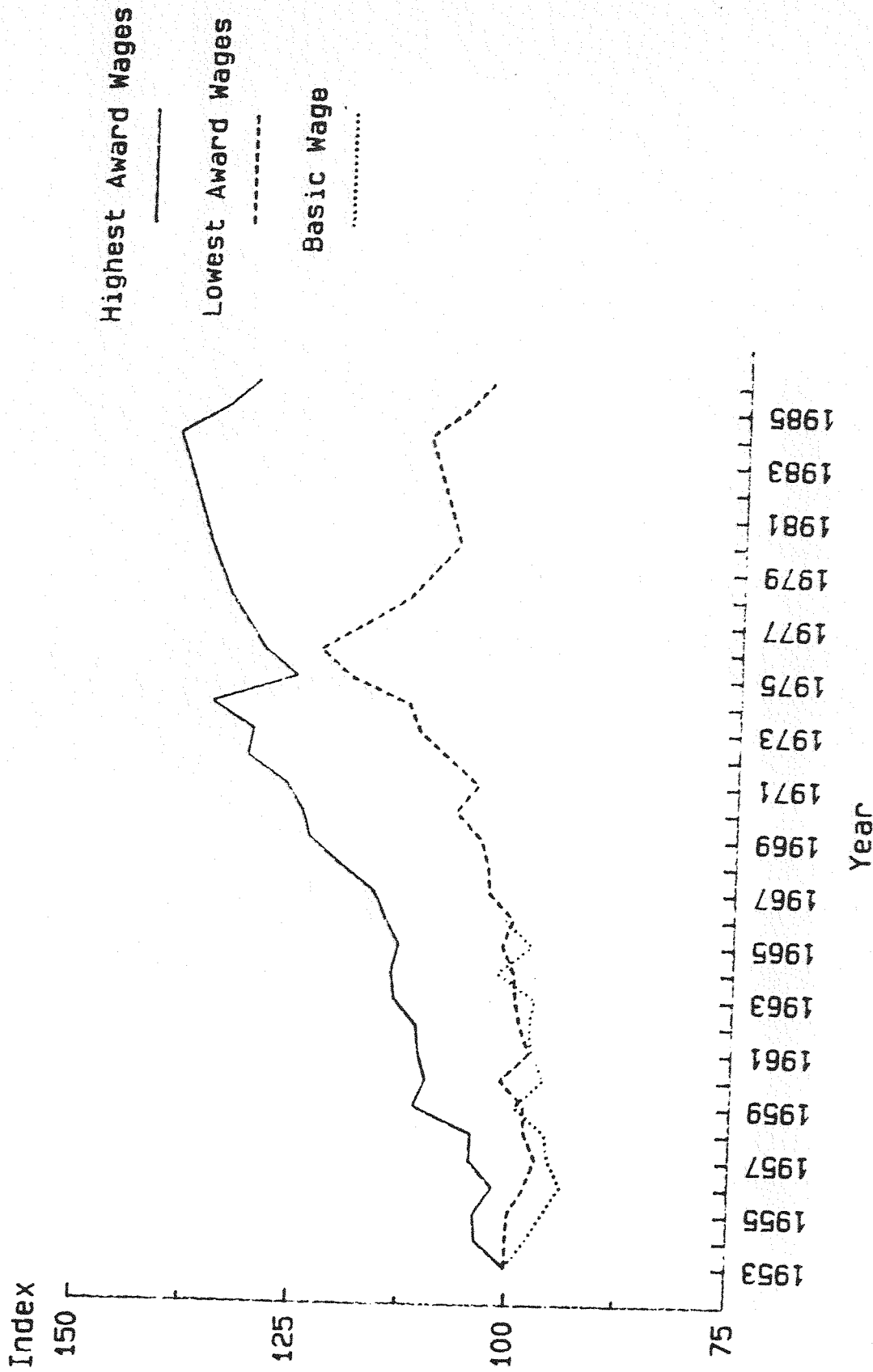
(1907 = 100)



Source: see Table 1

FIGURE 4:

INDICES OF THE REAL VALUE OF: (A) THE BASIC WAGE,  
(B) AWARD WAGES IN THE LOWEST PAID JOB AND (C) AWARD  
WAGES IN THE HIGHEST PAID JOB; ALL FOR ADULT MALE: 1953-1986 (1953 = 100)



Source: see Table 1

**FIGURE 5:** THE SAME INFORMATION AS IN FIGURE 4  
PRESENTED IN TERMS OF THE LOGARITHMS OF THE INDICES



Source: see Table 1

Working Papers in Economics

- \* 1. I.G. Sharpe A Framework for Analysis of the Money Supply Process in Australia; March 1975
- \* 2. I.G. Sharpe  
R.G. Walker Asset Revaluation and Stock Market Prices; June 1975
- \* 3. N.V. Lam Incidence and Stabilization Impact of Tin Export Taxation in West Malaysia; June 1975
- \* 4. V.B. Hall &  
M.L. King Inflationary Expectations in New Zealand: A Preliminary Study; August 1975
- \* 5. A.J. Phipps Strike Activity and Inflation in Australia; September 1975
- \* 6. N.V. Lam Incidence of the Rice Export Premium in Thailand; December 1975
- \* 7. I.G. Sharpe Secondary Reserve Requirements, the Monetary Base and the Money Supply in Australia; January 1976
- \* 8. P. Saunders Labour Demand Functions and the Quasi-Fixity Hypothesis: Some Empirical Results for U.K. Manufacturing Industries, 1963-1970; September 1976
- \* 9. W.P. Hogan Economic Strategies for Recovery; November 1976
- \*10. T.P. Truong Asset Revaluations and Share Prices: A Study using the M.S.A.E. Regression Technique; February 1977
- \*11. S. Kim Instability of Primary Exports, Income Stabilization Policies and Welfare; February 1977
- \*12. I.G. Sharpe &  
P.A. Volker Institutional Change, Specification Error, Inflation and the Stability of the Demand for Money Function in the United States, 1901-1974; February 1977
- \*13. I.G. Sharpe  
P.A. Volker The Impact of Institutional Changes on the Australian Short-Run Money Demand Function; February 1977
- \*14. W.P. Hogan The Connections Between Foreign Trade and Economic Development: An Empirical Study; May 1977
- \*15. F. Gill The Case of the Black Exodus from the Southern U.S., 1910-1970: Some Lessons for Theory and Applied Theory; May 1977
- \*16. A.J. Phipps The Impact of Wage Indexation on Wage Inflation and Strike Activity in Australia; June 1977
- \*17. V.B. Hall Pricing Behaviour in Australia: A Data Evaluation Study; June 1977
- \*18. I.G. Sharpe Australian Money Supply Analysis: Direct Controls and the Relationship Between the Monetary Base, Secondary Reserves and the Money Supply; June 1977
- \*19. L. Haddad Economic Systems: Towards a New Classification; June 1977
- \*20. G. Lewis A Strategy for Winning at Roulette; July 1977
- \*21. R.L. Brown A Test of the Black and Scholes Model of Option Valuation in Australia; November 1977
- \*22. V.B. Hall Pricing Behaviour in Australia Manufacturing Industry: Hypothesis Testing 1955-1956 to 1967-1968; November 1977
- \*23. I.G. Sharpe &  
P.A. Volker The Selection of Monetary Policy Instruments: Evidence from Reduced Form Estimates of the Demand and Supply of Money in Australia; December 1977
- \*24. V.B. Hall Excess Demand and Expectations Influences on Price Changes in Australian Manufacturing Industry; February 1978
- \*25. I.G. Sharpe &  
P.A. Volker The Tradeoff Between Improved Monetary Control and Market Interest Rate Variability in Australia: An Application of Optimal Control Techniques; February 1978
- \*26. E. Jones  
with assistance of  
M. MacDonald An Examination of Earnings Differentials in Australian Manufacturing Industry; June 1978
- \*27. W.P. Hogan Questions on Structural Adjustment Policies; September 1978
- \*28. P. Saunders Price and Cost Expectations in Australian Manufacturing Firms; February 1979

- \*29. W.P. Hogan, I.G. Sharpe & P.A. Volker Regulation, Risk and the Pricing of Australian Bank Shares 1957-76; April 1979
- \*30. W.P. Hogan Quicksands of Policy-Making; March 1979
- \*31. C. Emerson Taxing Natural Resources Projects; May 1979
- \*32. R.W. Bailey, V.B. Hall & P.C.B. Phillips A Small Model of Output, Employment, Capital Formation and Inflation, Applied to the New Zealand Economy; May 1979
- \*33. W.P. Hogan Eurofinancing: Currencies, Loans and Bonds; December 1979
- \*34. S. Adee The Growth of Foreign Investment and Economic Nationalism in Post Independence Ghana: 1957-1975; January 1980
- \*35. W.P. Hogan The 40 Per Cent Investment Allowance; January 1980
- \*36. W.P. Hogan Controlling Eurofinance Markets; December 1979
- \*37. R.T. Ross Disaggregate Labour Supply Functions for Married Women: Preliminary Estimates For New Zealand; April 1980
38. U.R. Kohli Beginning and End-of-Period Specifications of Asset Market Equilibrium in Balance-of-Payments Theory; April 1980
39. G. Mills Government Incentive Contracts with Private Companies; Some Lessons from the Channel Tunnel; April 1980
- \*40. C.G.F. Simkin Closer Economic Relations Between Australia and New Zealand; June 1980
41. U.R. Kohli Relative Price Effects and the Demand for Imports; July 1980
- \*42. W.J. Merrilees Alternative Models of Apprentice Recruitment: With Special Reference to the British Engineering Industry; August 1980
- \*43. P. Saunders Price Determination in Australian Manufacturing Firms: A Cross-Section Study; August 1980
- \*44. W.P. Hogan Immigration Policies and Issues; October 1980
- \*45. W.J. Merrilees Labour Market Segmentation in Canada: A Translog Approach; October 1980
- \*46. W.J. Merrilees Pricing Strategies in the Newspaper Industry; November 1980
47. J.L. Whiteman The Micro-Foundations of Layoffs and Labour-Hoarding; November 1980
48. U.R. Kohli On the Duality between Fixed and Flexible Exchange Rates; November 1980
49. U.R. Kohli Nonjoint Technologies; December 1980
50. P. Saunders Price Determination, Expectations Formation and Some Tests of the Rationality of Australian Price Expectations; March 1981
51. J.L. Whiteman Rational Choice, Learning-by-Doing and the Personal Distribution of Income; April 1981
52. J.L. Whiteman Firm-Specific Human Capital, Experience and the Differential Incidence of Unemployment; April 1981
- \*53. J. Yates An Analysis of Asset Holdings in Australia by Income Class; May 1981
54. J. Yates An Analysis of the Distributional Impact of Imputed Rent Taxation; June 1981
55. G. Mills Investment in Airport Capacity - A Critical Review of the MANS Study; January 1982
56. V.B. Hall & P. Saunders Pricing Models in Australian Manufacturing: The Evidence from Survey Data; January 1982
57. P. Saunders How Rational are Australian Price Expectations?; January 1982
- \*58. F. Gill The Costs of Adjustment and the Invisible Hand with Special Reference to the Labour Market; February 1982
59. G. Mills & W. Coleman Peak Load Pricing and the Channel Tunnel: A Re-Examination; March 1982
60. J. Yates Access to Housing Finance and the Campbell Report: The Implication of Implementing the Recommendations of Chapter 37; July 1982
61. S.S. Joson The Gatt Agreement on Government Procurements: Canada and Australia; July 1982
- \*62. R.T. Ross General Report of the 1980 Survey of Work Patterns of Married Women in the Sydney Metropolitan Region; July 1982
- \*63. W.J. Merrilees Pension Benefits and the Decline in Elderly Male Labour Force Participation; September 1982
- \*64. W.P. Hogan Industry, Employment and Inflation; October 1982

- \*65. A.J. Phipps Australian Unemployment: Some Evidence from Industry Labour Demand Functions; November 1982
- \*66. E.M.A. Gross & W.P. Hogan Short Term Management of the Australian Exchange Rate, 1977-82; December 1982
67. V.B. Hall Industrial Sector Interfuel Substitution Following the First Major Oil Shock; January 1983
68. J. Yates Access to Housing Finance and Alternative Forms of Housing Loans in the 1980s; July 1983
69. V.B. Hall Major OECD Country Industrial Sector-Interfuel Substitution Estimates: 1960-79; August 1983
- \*70. F. Gill Inequality and Arbitration of Wages in Australia: An Historical Perspective; December 1983
- \*71. W.J. Merrilees Do Wage Subsidies Stimulate Training? An Evaluation of the Craft Rebate Scheme; November 1983
72. M.C. Blad Economic Policy and Catastrophe Theory; November 1983
73. C.G.F. Simkin Does Money Matter in Singapore?; April 1984
74. J. Yates Home Purchase Assistance for Low Income Earners; March 1984
- \*75. C.G.F. Simkin Long-term Aspects of New Zealand's External Deficits; April 1984
76. C.G.F. Simkin Methodological Scepticism; July 1984
77. V.B. Hall Industrial Sector Fuel Price Elasticities of Demand Following the First and Second Major Oil Shocks; August 1984
78. S.S. Joson Substitutability of 'Buy Local' Policy for Tariff Protection in Small Economies; January 1985
79. R.T. Ross Analysis of the 1980 Sydney Survey of Work Patterns of Married Women: Further Results; January 1985
80. J. Yates Discrimination in Lending; May 1985
81. R.T. Ross Measuring Underutilisation of Labour: Beyond Unemployment Statistics; May 1985
82. P.D. Groenewegen Alfred Marshall as Professor of Political Economy at Cambridge 1885-1908; June 1985
- \*83. C.G.F. Simkin Popper's Methodology and Economic Theory; July 1985
84. E.M.A. Gross, W.P. Hogan & I.G. Sharpe Market Information and Potential Insolvency of Australian Financial Institutions; July 1985
85. F. Gill Over-Award Payments; Result of a Survey conducted in 1982; December 1985
86. S.K. Kim Short Run Policy Analysis of Employment, Food Price and Rural-Urban Migration for a Labour-Abundant Developing Economy; January 1986
87. E. Kiernan & D.B. Madan Stochastic Stability in a Rational Expectations Model of a Small Open Economy; March 1986
88. E. Gross A Note on the Testability of Fama's Efficient Capital Market Hypothesis; February 1986
89. M.C. Blad & E. Gross Multinational Producers in an Arrow-Debreu type General Equilibrium Model; March 1987
90. P. Saunders Explaining International Differences in Public Expenditure: An Empirical Study; August 1986
91. W.P. Hogan International Debt and Foreign Exchange Markets; January 1987
92. Michael C. Blad & Nicholas Oulton Union-Firm Bargaining as a Repeated Prisoner's Dilemma; January 1987
93. R.T. Ross The Heckman Procedure for Estimating Static Disaggregate Labour Supply Functions: An International Comparison of Estimates for Married Women; March 1987

94. W.P. Hogan Assessing Insider Trading; June 1987
95. J. Yates Housing Policy Reform: A Constructive Critique; June 1987
96. B.W. Ross The Leisure Factor in Entrepreneurial Success during the 'Robber Baron' Era; July 1987
97. F. Gill Determination of Wage Relativities under the Federal Tribunal: 1953-1974; August 1987
98. A.J. Phipps Union Objectives, Wage Bargaining and the Phillips Curve; October 1987
99. R.T. Ross The Labour Market Position of Aboriginal People in New South Wales; November 1987
100. L. Haddad List Revisited: Dynamic Consideration of Trade and Protection; November 1987
101. John Piggott General Equilibrium Computation Applied to Public Sector Issues; December 1987
102. J.A. Carlson & D.W. Findlay Relative Prices, Wage Indexation and Unemployment; December 1987
103. M. Waterson A Model of Product Differentiation and Profitability; December 1987
104. P.D. Groenewegen Taxation and Decentralisation: A Reconsideration of the Costs and Benefits of a Decentralised Tax System; March 1988
105. L. Ermini Some New Evidence on the Timing of Consumption Decisions and on Their Generating Process; March 1988
106. G. Mills Spatially-Differentiated Trucking Markets: Equilibria under Price Regulation without Entry Restrictions; April 1988
107. B.W. Ross Strategic Commitment, Unknowledge and the Nature of Entrepreneurial Activity; April 1988
108. S.S. Joson Offsets and Development of Defence Support Industries in Small Economies; April 1988
109. B.W. Ross The Conglomerate and the Focussed Agglomerate: Modern Forms of the Leader-Commanded Firm; July 1988
110. L. Ermini Inertial Behavior on Schedule and Hierarchical Decomposition; July 1988
111. L. Ermini The Limits of Systems Control Theory in Economic Policy-Making; July 1988
112. P.D. Groenewegen Neo-Classical Value and Distribution Theory: The English Speaking Pioneers; September 1988
113. V.B. Hall, T.P. Truong & V.A. Nguyen An Australian Fuel Substitution Tax Model: ORANI-LFT; October 1988
114. V.B. Hall, T.P. Truong & V.A. Nguyen Responses to World Oil and Coal Shocks, in an Australian Short-Run Fuel Substitution Tax Model; October 1988
115. F. Gill Social Justice and the Low-Paid Worker; October 1988

Papers marked with an asterisk are out of stock. Copies of the others are available upon request from:

Department of Economics,  
The University of Sydney,  
N.S.W. 2006, Australia.

Working papers in Economics Published or Accepted for Publication Elsewhere

2. I.G. Sharpe & R.G. Walker Journal of Accounting Research, Vol. 13, No. 2, Autumn 1975
3. N. V. Lam Journal of the Developing Economies, Vol. 17, No.1, March 1979
4. V.B. Hall & M.L. King New Zealand Economic Papers, Vol. 10, 1976
5. A.J. Phipps Economic Record, Vol. 53, No. 143, September 1977
6. N.V. Lam Journal of Development Studies, Vol. 14, No. 1, October 1977
7. I.G. Sharpe Australian Journal of Management, April 1976
9. W.P. Hogan Economic Papers, No. 55, The Economic Society of Australia and New Zealand
12. I.G. Sharpe & P.A. Volker Economics Letters, 2, (1979)
13. I.G. Sharpe & P.A. Volker Kredit and Kapital, Vol. 12, No.1, 1979
14. W.P. Hogan Some Calculations in Stability and Inflation, A.R. Bergstrom et. al. (eds), John Wiley and Sons, 1978
15. F. Gill Australian Economic Papers, Vol. 19, No. 35, December 1980
18. I.G. Sharpe Journal of Banking and Finance, 4, 1980
21. R.L. Brown Australian Journal of Management, Vol. 3, No. 1, April 1978
23. I.G. Sharpe & P.A. Volker The Australian Monetary System in the 1970s, M. Porter (ed.), Supplement to the Economic Board 1978
24. V.B. Hall Economic Record, Vol. 56, No. 152, March 1980
25. I.G. Sharpe & P.A. Volker Australian Journal of Management, October 1979
27. W.P. Hogan Malayan Economic Review, Vol. 24, No. 1, April 1979
28. P. Saunders Australian Economic Papers, Vol. 19, No. 34, June 1980
29. W.P. Hogan Economics Letters, 6 (1980)
- I.G. Sharpe & P.A. Volker
29. W.P. Hogan Economics Letters, 7 (1981)
- I.G. Sharpe & P.A. Volker
30. W.P. Hogan Australian Economic Papers, Vol. 18, NO. 33, December 1979
38. U.R. Kohli Australian Economic Papers, Vol. 21, No. 39, December 1982
39. G. Mills Journal of the Operational Research Society 33, (1982)
41. U.R. Kohli Canadian Journal of Economics, Vol. XV, No. 2, May 1982
42. W.J. Merrilees Applied Economics, Vol. 15, February 1983
43. P. Saunders Australian Economic Papers, Vol 20, No. 37, December 1981
45. W.J. Merrilees Canadian Journal of Economics, Vol. XV, No. 3, August 1982
46. W.J. Merrilees Journal of Industrial Economics, Vol. XXXI, March 1983
49. U.R. Kohli Review of Economic Studies, Vol. L(1) No. 160, January 1983
50. P. Saunders Economic Record, Vol. 57, No. 159, December 1981
53. J. Yates AFSI, Commissioned Studies and Selected Papers, AGPS, IV 1982
54. J. Yates Economic Record, Vol. 58, No. 161, June 1982
55. G. Mills Seventh Australian Transport Research Forum-Papers, Hobart, 1982
56. V. B. Hall & P. Saunders Economic Record, Vol. 60, No. 168, March 1984
57. P. Saunders Economic Record, Vol. 59, No. 166, September 1983
58. F. Gill Economie Appliquee, Vol XXXVII, 1984, No's 3-4, pp. 523-541
59. G. Mills & W. Coleman Journal of Transport Economics and Policy, Vol. XVI, No. 3, September 1982

60. J. Yates Economic Papers, Special Edition, April 1983
61. S.S. Joson Australian Economic Papers, Vol. 24, No. 44, June 1985
62. R.T. Ross Australian Quarterly, Vol. 56(3), Spring 1984
63. W.J. Merrilees Economic Record, Vol. 59, No. 166, September 1983
65. A.J. Phipps Australian Economic Papers, Vol. 22, No. 41, December 1983
67. V.B. Hall Economics Letters, 12, (1983)
69. V.B. Hall Energy Economics, Vol. 8, No. 2, April 1986
70. F. Gill Australian Quarterly, Vol. 59, No. 2, Winter 1987
71. W.J. Merrilees Australian Economic Papers, Vol. 23, No. 43, December 1984
74. J. Yates Australian Quarterly, Vol. 56 (2), Winter 1984
77. V.B. Hall Economics Letters, 20, (1986)
78. S.S. Joson Journal of Policy Modeling, Vol. 8., No. 2, Summer 1986
79. R.T. Ross Economic Record, Vol. 62, No. 178, September 1986
81. R.T. Ross Australian Bulletin of Labour, Vol. 11(4), September 1985