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The Effect of Equal Pay for Females on the Composition of Employment in Australia*

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Equal pay for female workers in Australia resulted in marked increases in labour costs. These varied across industries. However, changes in the industrial structure induced by equal pay are found to contribute little by way of explanation for the relatively faster growth of female than male employment in the 1970s.

During the 1960s and 1970s when there were considerable changes in the industrial and occupational structure in Australia, the female share of aggregate employment increased. This occurred despite the substantial rise in the cost of employing female workers relative to males. A possible explanation is that the equal pay decision had a differential impact on industries and that and other macroeconomic changes resulted in a change in the mix of industries which favoured female employment.

In this paper projections of changes in the industrial structure of employment are reported from a simulation of equal pay using the ORANI model of the Australian economy. Structural effects were virtually non-existent. Within the macroeconomic environment specified for the simulation, increased real labour costs from equal pay were reflected in a reduction in the demand for both male and female workers.

I Background Issues and Structure of the Paper

Changes in relative wage rates for the sexes due to the formal implementation of equal pay for women between 1972 and 1975 in Australia were of interest to economists. The principal issue explored was the substitution response to the relative increase in the cost of employing females, which was expected to be unfavourable for female employment. Among the applied research into this issue are the works of Dixon, Parmenter and Sutton (1978), Sheehan (1978), Eccles (1980), Gregory and Duncan (1981), Snape (1981) and McGavin (1983). A theoretical analysis was undertaken by Corden (1979). Two possible interpretations of the substitution effect were considered by these authors. The first interpretation is reflected in an increase in the ratio of male to female employment in particular occupations and/or industries. The general pattern in the 1970s was increased female shares of occupations which indicates that if a substitution effect of this type was operating on the demand side, then it must have been heavily masked by (either or both) supply side influences and substantial changes in the industrial composition of the demand for labour.

The second interpretation of substitution is the change in relative levels of employment demand for males and females occurring as a consequence of the change in industrial composition of the economy, induced by the labour cost growth associated with equal pay. This appears to be the interpretation of Gregory and Duncan (1981, p. 426) when they conclude:

> Substitution responses to relative wage changes appear to be very small. The equal pay decisions have been primarily associated with a change in the relative growth rates of male and female employment in the manufacturing sector. There it is associated with a reduction in the relative growth rate of female-intensive industries rather than a change in the rate at which the female proportion of the workforce within each industry changes. The industry mix effect appears to be largely a response to other factors, such as tariff reductions, in addition to equal pay effects.

A large increase in female rates of pay would raise costs relatively more in the female-intensive sectors of the economy. Thus, even in the absence of substitution of male for female labour *within* industries, a change in the sex composition of the demand for labour could be brought about by differential responses in output and employment in industries with differing female intensities.

Australia is a trading economy and domestic shocks which affect the general level of costs have highly differential impacts on the traded and non-traded goods sectors (see Dixon, Powell and Parmenter, 1979). However, since the female intensity of the workforce differs between these sectors, changes in the sectoral composition of employment induced by increases in labour costs have the potential to affect the sex shares of aggregate employment. This issue is explored in this paper. There are two stages in the analysis. We first simulate the impact on the structure of employment by industry of an historically large change in labour cost. Then we explore the consequences for employment by sex of the change in industry structure.

In Section II we estimate the changes in industry labour cost due to the implementation of equal pay. Then in Section III we briefly describe the ORANI model (Dixon, Parmenter, Sutton and Vincent, 1982) used to simulate the effects on employment by industry of the labour cost shocks. ORANI's projections are translated to changes in employment by sex. A summary of the results and some conclusions are contained in Section IV. Tables giving the occupational classification and wage rates used to estimate the growth in industry labour cost are appended.

II The Growth in Industry Labour Cost

In 1969 the Conciliation and Arbitration Commission determined that, so far as the sexes were concerned, there would be 'equal pay for equal work'. In 1972 the Commission's decision was to progressively phase in, over three years, the provision of 'equal pay for work of equal value' (Whitfield, 1987, chap. 5). During the phasing in of equal pay there were three sources of increase in labour cost: a general wage increase which raised pay rates for both sexes, changes in occupational relativities and the implementation of the equal pay provisions. In this research only the third of these components of labour cost increase is of interest. This is one reason why the estimates of the increases in labour cost due to equal award rates of pay differ from observed data on changes in relative earnings for men and women. The latter include the effects of overall wage growth as well as inter-occupational award wage variations and changes in over-award payments by sex.

Users of the ORANI model do not have the option of directly simulating changes in the relative wages of males and females. Thus, for the simulation of equal pay, we first estimate the growth in the wage bills of the 113 ORANI industries which could be attributed to equal pay in a typical two-year period of equal pay implementation. One way to construct these wage bills is to use a set of occupational wage rates and cross-tabulations of occupation by industry by sex employment data. This allows some account to be taken of differences in the shares of occupations in the industries and differences in the male and female shares of occupations.

To calculate the change in industry labour cost due to equal pay it can be argued that the appropriate wage data are the minimum rates payable for occupations, since the equal pay decision formally related to minimum award rates. Against this, it could be argued that earnings data are to be preferred, since the equal pay decision of the Conciliation and Arbitration Commission could have been offset by increases in over-award payments for men relative to those for women. In that case there would not have been an increase in the relative cost of employing female labour. But Brown and Fuller (1978, pp. 36-7), in commenting on the movements of awards and earnings, note that in the mid-seventies period

> . . . during which over-awards doubled in cash terms and during which there would have been ample opportunity to give preferential treatment to men to claw back to men some of the old sex differential, quite the reverse has happened . . . In short, the spirit of equal pay, far from being baulked by over-awards, appears to have pervaded them.

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Aside from the convenience afforded by the more detailed data available on awards rather than earnings, the Brown and Fuller study confirms that the use of minimum award rates for each occupation captures the increase in the cost of female labour relative to male.[1]

Published data are available for adult minimum rates of pay for 403 occupations for males and 124 occupations for females.[2] This classification of occupations is derived from awards, determinations and agreements of industrial tribunals. The 1976 Census (ABS, 1976) contains a cross-classification of employment by sex for 73 occupations and 13 major industries. However, to exploit ORANI's very detailed industrial classification, data for 73 occupations in 43 industries were obtained from ABS computer tapes. These data were then aggregated to tables distinguishing the 71 occupations in Appendix Table I and the 38 industries listed in Table 1.

A major difficulty is that the occupational classifications for award rates of pay and for employment cannot be exactly matched. The assignment of occupational wage rates had to be undertaken in a number of stages to form vectors of 71 wage rates for each sex. The effects of the equal pay decisions first began in 1969. However in this research, the effects of progressively removing the award wage sex differential from 1972 onwards are assessed. The award wage data are for June 1972. Using the detailed Census occupational code, 47 award wage rates were matched to the occupational classification of employment for males and 17 for females. Rates for the three health-related occupations 4-6 were obtained from a large public hospital in Melbourne, and the Australian Teachers' Federation provided the data for teachers' pay rates by sex.[3] Generally, the missing wage data for females were in occupations with a low female share of employment, such as occupation 23 (Woolclasses), where the female share was 0.51 per cent in 1971. Abbreviated names of the occupations, an award description and the wage rates are set out in Appendix Table II.[4]

To provide a wage rate for the missing elements of the 71-part classification, the occupations were grouped into major classes such as white-collar, farm, transport, blue-collar and services. For example, the white-collar occupations comprise 1-20. For each major class of occupations the average male rate of pay and the average ratio of the female to the male rate were calculated. The average male rate for the appropriate major class was assigned to 20 occupations for which data for males were otherwise unavailable. For example, the average award rate for male white-collar workers of $78 was assigned to occupations 8, 9, 11-15 and 18. The average sex relativity for each major class was used to estimate the missing female rates of pay from the known male rates. Within the white-collar group, for example, females were assigned a rate of 81.44 per cent of the male rate in occupations 1-3 and 19. The average of the known female awards (occupations 4-7, 10, 16, 17 and 20) of $68 was assigned to those occupations for which a male rate had not been obtained (8, 9, 11-15, 18).

These procedures gave occupational wage rates for each sex which could be used to calculate the direct effect on the wage bill of equal pay in 38 major industry groups. For the initial period t labour cost for each of the industries was calculated according to the equation

$$C_i^t = \sum_{j=1}^{J} (w_{fj} L_{fj}^i + w_{mj} L_{mj}^i) \quad (i = 1, \ldots, 38), \tag{1}$$

where C_i^t is total labour cost for industry i, J is the number of occupations—in this case $71 - w_{fj}(w_{mj})$ is the rate of pay for females (males) in the jth occupation, and $L_{fj}^i(L_{mj}^i)$ is the level of female (male) employment in occupation j in the ith industry. There are no industry superscripts on the wage term since we assume that the wage rate for an occupation is the same in all industries. Further, we assume that the equal pay decision is fully implemented at the beginning of period T and we abstract from both general wage increases and disturbances to occupational relativities. That is, the effect of equal pay is proxied by assigning the male rate of pay to females in period T as in the equation

$$C_i^T = \sum_{j=1}^{J} w_{mj} (L_{fj}^i + L_{mj}^i) \; (i = 1, \ldots, 38). \tag{2}$$

The percentage increase in labour costs due to equal pay for industry i can be written as

$$c_i = 100 \, (C_i^T - C_i^t)/[(C_i^T + C_i^t)/2] \quad (i = 1, \ldots, 38). \tag{3}$$

III The Closure of ORANI for Simulation of the Effects of Equal Pay

ORANI is a comprehensive computable general equilibrium model of the Australian economy (Dixon, Parmenter, Sutton and Vincent, 1982). Given an exogenously specified macroeconomic environment, ORANI is able to simulate the effects of a variety of shocks on a large number of endogenous variables, including the outputs and employment demand levels of industries. The model permits the user to make almost any (logically valid) classification of the many hundreds of variables into endogenous and exogenous sets.

The shocks to be applied to ORANI are the cost changes due to equal pay. Because the model offers no guidance on three critical aspects of the macroeconomic effects of shocks to the economy, users are required to specify: whether the balance of trade or aggregate absorption will adjust when an induced change in the level of national income occurs; whether induced changes in the real exchange rate are reflected in changes in the domestic relative to the foreign rate of inflation or in the nominal exchange rate; and whether real wages or employment will change when the level of activity in the labour market changes.[5]

In the simulation reported here, in so far as the first choice is concerned, it was specified that no deterioration in the balance of trade would occur as the result of the increase in labour costs. The maintenance of the trade balance, in the context of the equal pay-induced increase in labour costs, would require a contraction in aggregate demand. Drèze and Modigliani (1981, pp. 1-5) adopted a similar approach in analyzing the effects on employment of wage increases. They . . . treat external balance as a binding constraint on demand management. An exogenous increase in real wages, affecting adversely the competitiveness of domestic producers on the export and import markets, impairs external balance. The impact of the wage increase on output and employment is evaluated through the reduction in domestic demand required to restore external balance.

With respect to trade balance and exchange rate options, it sometimes is believed that an alternative way of balancing trade is simply to change the exchange rate. However, where real wages do not fall as a result of devaluation, only the price level responds, not the balance of trade (Dixon, Powell and Parmenter, 1979, p. 17). Here, the nominal exchange rate is exogenous. Endogenous changes in the domestic CPI are interpretable as changes in the real exchange rate (i.e. in the ratio of the prices of non-traded to traded goods).

Alternatively, the balance of trade could have been treated endogenously with domestic absorption fixed. However in the circumstances of the early 1970s with emerging inflationary problems, it is not likely that the government would have permitted the equal-pay-induced cost growth to impinge on the balance of trade and the inflation rate to the extent that such a macroeconomic environment would imply.[6]

To understand the closure of ORANI in relation to the labour market choice, the method of estimating the industry labour cost shocks (the c_i's) needs elaboration. The shocks were calculated as if equal pay was implemented overnight. That is t (in equations 1 to 3) was the close of business on 31 May 1972, and T was the beginning of business on 1 June 1972. On this basis it was assumed that industry employment levels (L_{mj}^i and L_{fj}^i) were unchanged. This ensured that the growth in the industry wage bill was not influenced by a change in the size of its labour force. It also was assumed in calculating the c_i's that the economy-wide real wage and price level were constant. The 'overnight' character of the wage increase means therefore that the increase in the average nominal wage in the industry was also an increase in the industry's average real wage. The average real wage

[1] The puzzle as to why such voluntary compliance in the over-award area was forthcoming is not investigated in this paper. Also it is clear that equal award rates of pay for the sexes have not been achieved. By 1980 the female rate was still only 93 per cent of the male, see Whitfield (1987, p. 107).

[2] These data are found in *Minimum Rates of Pay and Prescribed Hours of Work*, ABS catalogue number 6316.0.

[3] Equal pay was fully effective for teachers by January 1972. The implementation was begun in New South Wales in 1958 and in most other States from 1967 onwards.

[4] Appendix Table II shows in bold type the occupations which were matched across the two (employment and wage) occupational classifications and those estimated as described in the text in italics.

[5] This discussion of the specification of the macroeconomic environment for the simulation closely follows that in Dixon, Parmenter and Powell (1982, pp. 4-7).

[6] An experiment was conducted with the balance of trade endogenous and real domestic demand constant. ORANI's projections were of a balance of trade deficit of almost 3 per cent of GDP and an increase in the CPI of 10.6 per cent.

in each industry – a composite male and female wage – was influenced only by raising the pay rate of its female workers to the pay rate of males. This is consistent with abstracting from all sources of real labour cost growth other than that of equal pay.

The aim of the ORANI simulation was to obtain projections of changes in industry employment levels as a consequence of the estimated increases in industries' real wages. The model produces projections of the change in employment demand which would be generated after firms regain a new equilibrium reflecting the new (exogenous) real labour costs. In the simulation of the effects of the 'overnight' implementation of equal pay, the economy-wide real wage was not permitted to increase for reasons other than equal pay. Industries' nominal wages were fully indexed to changes in the CPI.

The simulation relates to the neoclassical short-run (thought to be about two years).[7] This period is short enough for the capital stock in use to be considered exogenous but long enough for the investment plans of industries to affect the demands faced by industries supplying capital goods. In such a short run, industry supply curves are upward sloping. This assumption is introduced in the simulation by fixing capital stocks in each industry.

IV Wage Cost Shocks for Input into ORANI and Method of Projection

The changes in industry labour cost were calculated according to equations (1), (2) and (3). The data used to calculate the changes in industry labour cost were from the 1976 Census cross-classification of employment by sex, occupation, and industry, and the two sets of occupational wage rates shown in Appendix Table II.[8] The percentage increase in industries' real labour costs attributable to equal pay for females is given in the first column of Table 1. Over the whole industrial structure the average real labour cost increase was 5.18 per cent. The cost changes listed in Table 1 are the exogenous real wage shocks of the simulation, i.e., a 6.49 per cent increase in the cost of a unit of labour to industry 1, a 2.46 per cent increase for industry 2, and so on for the other 36 aggregations of the 113 ORANI industries. The increases in real industry labour cost were input into ORANI via the industry-specific wage shift variable.[9]

In the simulation it is as though there is one type of labour for each of the 113 ORANI industries. The units of labour are combinations of male and female labour in different occupations. The simulations were conducted as if sex and occupational shares of industry employment are technologically fixed. Recall that we are not concerned with the effect of substitution of males for females within occupations, but with isolating the effect of the changing industrial composition of the economy on employment by sex.

The method abstracts from two possible sources of substitution. First, industries are not permitted to partially offset equal pay by substituting in favour of the relatively cheaper male employees. To the extent that they actually did so, the results here may slightly overstate the response of the industry structure. Second, the simulation proceeds with occupational wage relativities fixed at those prevailing among male award rates of pay.[10]

Inspection of occupational wage data suggests that nominal labour cost increased by about 60 per cent during the phasing in of equal pay. This is of course a mix of the three sources of wage increase noted in Section II above. The estimates of the increases in industries' real wages supplied to ORANI are in effect some mixture of the effects of the 1969 and 1972 equal pay decisions. These c_i's are intended to reflect some typical two-year experience of implementing the principle of 'equal pay for equal work' of 1969 and its extension to a larger part of the female workforce expressed as 'equal pay for equal worth' in 1972.

[7] See Cooper and McLaren (1980 and 1982).

[8] In the absence of appropriate data on wage rates by sex, industry and occupation, we assume that occupational wage rates are the same in all industries. This is unlikely to be true but the quantitative effect of our assumption is undoubtedly minimal.

[9] See DPSV (1982, Table 23.1, page 135, equation (22.6)). The wage shift variable is

$$f^{(1)}_{k^*,1,1j} \text{ for } j = 1, \ldots, h.$$

It is noted that this term can be interpreted as the change in real wages in industry j. These variables are convenient ones to use in simulations involving variations in industrial wage relativities. See DPSV (1982, pp. 126-9).

[10] These are second-order errors. In the Johansen solution of ORANI the effects of within-occupation substitution would not be captured. Also we do not draw upon ORANI's projections of changes in employment by occupation.

TABLE 1

The Percentage Increase in Industry Labour Cost from the Implementation of Equal Pay for Females and the Projected Effects on Employment by Industry and Sex

Industry name[a]	Percentage Change in		Absolute Change in Employment	
	Labour Cost	Employment	Male	Female
1 Agriculture (1-8)	6.49	– 7.87	– 19030	10118
2 Services to agriculture (9)	2.46	– 6.47	– 658	93
3 Forestry, logging (10)	1.57	– 5.89	– 599	– 47
4 Fishing, hunting (11)	2.84	– 3.68	– 273	– 43
5 Metallic minerals (12-13)	1.53	– 3.54	– 1171	– 112
6 Coal, crude petroleum, gas (14-15)	0.40	– 4.21	– 1038	– 24
7 Non-metallic minerals, n.e.c. (16)	1.69	– 6.29	– 556	– 54
8 Services to mining (17)	3.50	– 2.00	– 125	– 33
9 Food, beverages, tobacco (18-29)	6.10	– 5.42	– 7910	– 2836
10 Textiles (30-36)	8.01	– 7.07	– 1690	– 1390
11 Clothing, footwear (37-39)	5.61	– 3.80	– 844	– 2618
12 Wood products, furniture (40-43)	2.34	– 6.28	– 4498	– 794
13 Paper, printing and publishing (44-48)	6.70	– 6.31	– 3009	1166
14 Chemicals, petroleum and coal products (49-56)	4.85	– 6.01	– 4539	1684
15 Other non-metallic mineral products (57-62)	2.26	– 5.36	– 2445	– 326
16 Basic metal products (63-64)	1.58	– 5.69	– 5139	– 467
17 Fabric and metal products (65-67)	3.77	– 5.74	– 9407	– 2337
18 Transport equipment including cars (68-71)	2.32	– 3.00	– 1482	– 224
19 Other machinery, appliances (72-78)	4.86	– 5.84	– 8498	– 3002
20 Manufacturing, n.e.c. (79-83)	6.05	– 6.08	– 2796	– 1415
21 Electricity and gas (84-85)	1.52	– 6.94	– 4534	– 428
22 Water, sewerage, drainage (86)	1.21	– 4.98	– 1312	– 90
23 Construction (87-88)	1.68	– 4.74	– 21917	– 2218
24 Wholesale, retail trade (89-92)	5.88	– 5.36	– 36604	– 25686
25 Road transport (93)	3.06	– 4.71	– 5669	– 1042
26 Rail transport (94)	2.60	– 3.34	– 2873	– 450
27 Water transport (95)	1.35	– 1.93	– 838	– 64
28 Air transport (96)	2.76	– 6.65	– 1747	– 468
29 Communication (97)	4.84	– 7.04	– 6642	– 2293
30 Finance, insurance, etc. (98-103)	8.80	– 8.17	– 19347	– 15766
31 Public administration (104)	6.66	– 4.28	– 5675	– 2972
32 Defence (105)	4.75	– 4.08	– 3094	– 1016
33 Health (106)	7.52	– 6.43	– 4872	– 15866
34 Education, etc. (107)	3.63	– 4.44	– 5056	– 8114
35 Welfare, other community services (108)	4.96	– 5.06	– 4972	– 2674
36 Entertainment, recreation (109)	8.28	– 7.47	– 2805	– 2327
37 Restaurants, hotels, clubs (110)	7.18	– 5.96	– 5427	– 7393
38 Other services (111-113)	10.24	– 8.57	– 2155	– 4672
Average	5.18	– 5.84	Total – 211246	– 122321

(a) Employment projections were made using the ORANI model. In this table, ORANI results for 113 industries are aggregated to 38 industries. The numbers in parenthesis show the aggregation. For example, industry 1 consists of ORANI industries 1-8. For a key to the disaggregated industry numbers see Dixon, Parmenter, Sutton and Vincent (1982, Table 29.2, pp. 185-8). The version of the ORANI model and the data base used were the ones therein described. The closure of the model was as in Table 23.3 of Dixon, Parmenter, Sutton and Vincent (1982).

Some of the increases in real wages by industry reported in Table 1 may be surprising in the light of other evidence. However, the extent of the equal-pay-induced cost increases calculated (by the present method) depend not only on the female intensities of occupations and industries (which are fairly well known), but also on the extent of the pre-existing award wage differentials in occupations (which are no doubt less well known). More importantly, and perhaps the contribution of the method, the spread of all occupations across the industry structure is little appreciated and yet partly influences the outcome. For example, it is tempting to think of Agriculture (1) as being comprised of just occupations 21, 22 and 23, the typical agricultural occupations. But like the other industries in the economy, Agriculture employs the clergy – 'Flynn of the Inland', air pilots, carpenters and labourers. It is not intuitively obvious what contributions the diverse occupations employed in each industry make to the final change in the average real wage of the industry. The increase in relative female award rates and earnings in the first year and a half of the phasing in of equal pay implied by the calculations of Norris (1983) is about 9.5 per cent.[11] The average increase in industry labour cost of 5.18 per cent is a plausible estimate of the effect of the isolated effect of equal pay for a typical two-year period.

Table 1 shows considerable variation in the extent of labour cost growth across the industrial structure. The increase was above average in Textiles (10), Finance (30), and Entertainment (36), but Coal and crude petroleum (6) experienced little increase in labour cost due to equal pay, and the same is generally true for the Transport groups.

V Results

If industry wage costs were to move overnight by the amounts indicated in column one of Table 1, then after about two years it would be expected that, on the ORANI projections, employment in Agriculture would be 7.87 per cent lower than it would otherwise have been. The main impression gained from an inspection of the projections in column two of Table 1, the percentage changes in industry employment, is of a fairly uniform decline of around 5 to 7 per cent. Why is it that, in spite of marked differences in the wage shocks, the decrease in employment shown in the table is so remarkably uniform? Changes in industry output and employment depend, among other things, on capital intensity, on domestic expenditure elasticities and, in the case of export industries, on the elasticity of overseas demand for their products. In simulations where demand is sustained, ORANI typically projects that an increase in labour cost raises the CPI.[12] Usually, with constant demand and increasing costs, agriculture and other export industries are adversely affected. Import-competing industries suffer because of the switch in expenditure away from domestically produced output. With the squeeze on tradeables, the non-traded goods sector gains relatively provided that aggregate demand is maintained. In the present simulation, differential effects of this sort do not occur. Underlying the results in Table 1 is a fall in real absorption of 4.13 per cent.[13] By allowing demand to fall to avert an unfavourable effect on the balance of trade, the cost increase which would have occurred otherwise is moderated. The direct effect is the real cost of equal pay, but industry output and employment are also affected by the fall in absorption.

Compared with what would have happened if absorption had been sustained, costs increase less.[14] This favours export industries whose selling prices are largely set on world markets. Also, their fate is substantially independent of any reduction in domestic demand. The import-competing industries are also less adversely affected in spite of the effect of a reduction in their market when domestic demand falls. In other words, import-competing firms tend to be favoured because they lose less of their market share, but this is offset by the general fall in sales. The non-traded goods sector is more adversely affected in the present simulation than where aggregate demand is maintained. The only mechanism which would allow expansion in the face of a cost increase would be their expansion at the expense of other sectors.

In view of the uniformity across industries of the decline in employment, the differential effect of equal pay appears slight, although the overall projected fall in employment is substantial. Projected changes in industries' employment given in column two of Table 1 may be transformed into estimates of changes in employment by sex. A way to do this is to assume that a given percentage change in total employment in an industry translates into equal percentage changes in employment demand by sex. The 1976 Census data of employment cross-classified by industry and sex were used to find the shares of each industry's total employment accounted for by males and females. Then the ORANI projection of the percentage change in employment in each industry was distributed to the sexes in accordance with their respective employment shares. For example, employment in Agriculture (1) was projected to fall by 7.87 per cent. Expressed in terms of jobs, employment fell by 29 148. The female share of Agriculture was 34.7 per cent. The decline in employment is shown in Table 1 in columns three and four of row 1 as – 19 030 for males and – 10 118 for females. The results reported for the other 37 industries were obtained similarly.

In total, males were projected to lose over two hundred thousand jobs due to increased real labour cost from the implementation of equal pay, while projected total employment fell by 333 567. The share of males in this loss was 63 per cent, which aligns quite closely with their initial share of the overall workforce of 64.2 per cent. Females' smaller share of aggregate employment is reflected in their projected loss of over 122 thousand jobs.

VI Summary and Conclusions

A concern of this paper was to simulate the likely change in industry structure following equal pay and to assess whether the structural change would have resulted in a larger percentage decrease in female than male employment. For the simulation it was assumed that equal pay raised industries' real labour costs. Specifically, it was assumed that the male real wage was not reduced to fully, or even partially, offset the relative increase in the real costs of employing female workers. When the projected change in industries' employment was distributed to the sexes and aggregated, male employment fell by 5.76 per cent and female employment fell by 5.94 per cent. Although female employment fell by more than male, the difference is trivial. What does stand out is the extent of the job loss.[15] It seems that what is decisive is not simply the relative cost changes across industries, but the relative ease with which they can be passed on into prices.

Despite substantial variation in labour cost growth across industries, surprisingly little change in the industrial structure of the Australian economy was projected to occur in response to equal pay. With few exceptions, projected employment fell uniformly. The ORANI results suggest it is unlikely that equal pay would have induced a change in industry structure especially unfavourable for female employment prospects. Equal pay was a direct increase in real cost, to a greater or lesser extent, for all industries. However, the *effects* of increased labour cost were not concentrated in particular industries or on either sex. The method of imposing the shocks accounted for industries' differing labour intensities and their sex shares of employment.

The principal macroeconomic effects of the increase in real wages are partly the consequence of the policy strategy underlying the macroeconomic closure of the simulation (see Section III above). Aside from the own-industry cost effect, the impact upon the general price level of increased real labour costs would have particularly adverse implications for the traded-goods sector in an environment in which the balance of trade was allowed to deteriorate. In such a permissive macroeconomic environment, the labour cost shocks would have had highly differential effects between the vulnerable parts of the traded-goods sector and the rest of the economy. Such differential effects did not occur in our simulation because the balance of trade constraint was binding.

A further ORANI simulation with the same macroeconomic environment was conducted, but instead of imposing variable labour cost shocks, every industry's real wage bill was increased by 1 per cent. The correlation coefficient between the projections of the percentage changes in employment due to equal pay and those of the across-the-board increase in labour cost was 0.69 per cent. This confirms the importance of macroeconomic factors. The overall employment loss projected by ORANI is broadly similar to that which would be obtained from a simulation of a 5.18 per cent increase in the economy-wide real wage rate. This paper suggests that the likely change in industry structure induced by equal pay for females would have explained only a trivial part of the actual adjustment to the equal pay initiatives.

[11] Norris (1983, Table 5.5).

[12] See Dixon, Powell and Parmenter (1979, Chapter 3).

[13] The labour cost increases also imply an increase in average nominal wages of 6.46 per cent: 5.18 per cent from equal pay and 1.28 per cent from indexation of money wage rates to the CPI.

[14] The CPI rises by 1.28 per cent rather than 10.6 per cent in the case where the balance of trade is endogenous.

[15] Recall that the loss in employment demand is relative to what it would otherwise have been. It is not claimed that the loss of 333 567 jobs due to the cost implications of the equal pay decision can be identified with the actual gross movements in a particular historical series. Many other influences with implications for employment impinged on the economy simultaneously with the equal pay decision.

Appendix

Table I

Occupational Categories Derived from the Classifications Used in the Census, 1971, 1976 and 1981

1 Architects, engineers	37 Telephone operators
2 Chemists, physicists	38 Postmasters, postmen
3 Biologists, vets	39 Other trans. and comm., n.e.c.
4 Medical practitioners, dentists	40 Spinners, weavers
5 Nurses	41 Tailors, cutters
6 Professional medical workers	42 Leather cutters
7 Teachers	43 Furnacemen, rollers
8 Clergy, religious orders	44 Watchmakers, jewellers
9 Law professionals	45 Toolmakers, machinists
10 Artists, entertainers	46 Electricians
11 Draftsmen, technicians	47 Metal workers
12 Other professional	48 Carpenters
13 Admin., exec., (Govt) n.e.c.	49 Painters, decorators
14 Employers, managers, n.e.c.	50 Bricklayers, plasterers
15 Book-keepers, cashiers	51 Compositors, engravers
16 Stenos, typists	52 Potters, kilnmen
17 Other clerical	53 Millers, bakers, butchers
18 Insurance salesmen	54 Chemical, sugar workers
19 Commercial travellers	55 Tobacco preparers
20 Proprietors, shopkeepers	56 Paper, rubber workers
21 Farmers, farm managers	57 Packers, wrappers
22 Farm workers, farm foremen	58 Equipment operators
23 Wool classers	59 Storemen, freight handlers
24 Hunters, trappers	60 Labourers, n.e.i.
25 Fishermen, related workers	61 Firebrigade, police
26 Timbergetters	62 Housekeepers, cooks
27 Miners, quarrymen	63 Waiters, bar tenders
28 Well drillers, oil, water	64 Caretakers, cleaners
29 Mineral treaters	65 Barbers, hairdressers
30 Deck, engineer officers	66 Launderers, dressers
31 Deck, engine hands	67 Athletes, sportsmen
32 Air pilots, navigators	68 Photographers
33 Drivers, firemen—rail	69 Undertakers
34 Drivers, road	70 Service, other workers, n.e.i.
35 Guard, conductors—rail	71 Members armed services
36 Inspectors—transport	

n.e.c., Not elsewhere classified
n.e.i., Not elsewhere included

Source: Classification and Classified List of Occupations (CBCS, June 1971) and Occupation Classification Extract (ABS, 2114.0)

Appendix

Table II

Minimum Rates of Pay for Adult Males and Females, June 1972

Occupation[a]	Award Description [b]	Wage Rate, $[c]	
		Male	Female
1 ARCH	Pub.Auth. Graduate Engineer	96.71	*78.70*
2 CHEM	Graduate Scientist	89.02	*72.50*
3 BIOL	Graduate Scientist	89.02	*72.50*
4 MEDI	Resident doctor	114.85	114.85
5 NURS	First-year sister	72.00	68.00
6 PMED	First-year radiographer	69.70	66.20
7 TEAC	Primary Teacher (Victoria)	*78.00*	78.00
8 CLER		*78.00*	*68.00*
9 LAWP		*78.00*	*68.00*
10 ARTI	Comm.Broadcasting Announcer	58.20	49.50
11 DRAF		*78.00*	*68.00*
12 OTHP		*78.00*	*68.00*
13 ADMI		*78.00*	*68.00*
14 EMPL		*78.00*	*68.00*
15 BOOK		*78.00*	*68.00*
16 STEN	Stenographer	66.20	54.40
17 OTHC	Clerk class 1, 21 years	66.20	51.20
18 INSU		*78.00*	*68.00*
19 COMM	Commercial traveller	80.80	65.80
20 PROP	Retail stores, shop assistant	69.20	62.15
21 FARM	Farming, general hand	51.10	*41.60*
22 FWOR	Farming, general hand	51.10	*41.60*
23 WOOL	Wool classer	*67.30*	*54.80*
24 HUNT		*51.10*	*41.60*
25 FISH		*51.10*	*41.60*
26 TIMB	General forestry worker	55.30	*45.00*
27 MINE	Miner-machine	70.80	*57.60*
28 WELL	Miner-machine	70.80	*57.60*
29 MINT	Miner-machine	70.80	*57.60*
30 DECK	Shipping-chief officer	69.50	*56.60*
31 DKEN	Shipping-2nd Engineer	77.90	*63.50*
32 AIRP		77.90	*63.50*
33 DRAI	Locomotive fireman	51.80	*42.20*
34 DRDA	Conductor, tramways	52.80	52.80
35 GUAR	Guard	60.65	*49.40*
36 INSP		*77.90*	*68.00*
37 TELE	Telcommunications tradesmen	66.20	51.20
38 POST	Postman	69.05	*56.20*
39 OTHT		*69.00*	*56.00*
40 SPIN	Weaver	56.90	43.80
41 TAIL	Tailor	65.40	65.40
42 LEAT	Footwear manufacturing	57.90	45.80
43 FURN	Furnace hand	47.70	*38.90*
44 INST		*74.00*	*61.30*
45 TOOL		74.00	*61.30*
46 ELEC	Electrician	95.90	*78.10*
47 META	Sheet metal worker	68.60	*55.80*
48 CARP	Carpenter	87.00	*70.85*
49 PAIN	Painter	85.00	*69.20*
50 BRIC	Bricklayer	86.20	*70.20*
51 COMP	Book binder	68.40	41.20

Appendix

Table II

Minimum Rates of Pay for Adult Males and Females, June 1972

Occupation[a]	Award Description [b]	Wage Rate, $[c] Male	Female
52 POTT	Burner	53.20	44.00
53 MILL	Biscuit and cake mixer	59.00	39.00
54 CHEM	General mill worker	62.00	*50.50*
55 TOBA		*62.00*	*51.00*
56 PAPE	Cardboard boxes – general hand	51.80	*42.20*
57 PACK	Fruit packer	51.10	*41.60*
58 STAT	Stationary engine driver	58.70	*47.80*
59 STOR	Storeman	55.60	*45.30*
60 LABO	Labourer (textiles)	53.00	*43.20*
61 FIRE	Fireman	69.20	*56.30*
62 HOUS	Cook	54.70	*30.50*
63 WAIT	Barman (maid)	57.90	57.90
64 CARE	Office cleaner	57.00	47.10
65 BARB	Hairdresser	68.60	53.40
66 LAUN	Laundries – general hand	56.00	45.00
67 ATHL		*61.10*	*50.90*
68 PHOT	T.V. transmission – cameraman	64.70	*52.70*
69 UNDE		*61.10*	*50.90*
70 SERV		*61.10*	*50.90*
71 AFOR		69.50	*56.60*

Notes

a The occupation name is an abbreviation of the Minor Groups occupations listed in Appendix Table I.

b Award rate of pay for adults, Sydney (or NSW). The occupation is as described in *Award Rates of Pay and Prescribed Hours of Work, Adult Males and Females, State Capital Cities*, ABS, 6316.0, June 1972.

c Wage rates shown in italic type are estimates formed as described in the text of Section II of this paper.

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