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ABSTRACT

The study examines the economic implications in Wisconsin of the 1972 Equal Employment Opportunity Commission guideline which requires employers to treat maternity leave as a temporary disability. First, the static cost of the maternity leave guideline to employers is estimated for the State of Wisconsin. Second, some examination of the economic response to this cost is attempted. Finally, the relationships between maternity leave and other fringe benefits, wages, and the age distribution of employed females are examined using hospital data. The total cost of the maternity leave guideline for Wisconsin ranges from $4.4 million to $12.8 million annually. Although this cost is not excessive, it may add 3-11 percent to the cost of providing compensated temporary disability plans. Data for hospitals in Wisconsin were examined for realtionships between maternity leave, other fringe benefits, age distribution of employed females, and wages. It was found that the proportion of nurses ages 17 to 39, the main childbearing years, is inversely related to maternity leave. Maternity leave is not a substitute or complement to other fringe benefits. Maternity leave tends to be negatively related to wages. (The document concludes with four appendixes of statistical tables and a three-page bibliography.) (Author)

WISCONSIN MATERNITY LEAVE AND FRINGE BENEFITS:

POLICIES, PRACTICES AND PROBLEMS

Equal Rights Division
Department of Industry, Labor and Human Relations

Prepared by Jennifer Gerner

1974

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Introduction

In the decade of the 60's sanctions against discrimination in employment practices on the basis of some group characteristic became increasingly institutionalized through enactment of new legislation, reinterpretations and amendment of existing legislation, and establishment of bureaucratic machinery to administer and enforce legislation. One important group included under this legislation is females. Labor force participation of women age 16 and over grew from 37.3% in 1960 to 43.3% in 1972.[1] This growth in female participation in the market place has made legislation and interpretations of legislation which affect employed women of particular importance both to women and to employers.

There are two pieces of federal legislation providing protection in employment against discrimination on the basis of sex. The first, the Equal Pay Act of 1963, provides for the inclusion of section 6(d) in the Fair Labor Standards Act of 1932.[2] This act basically forbids discrimination in payment of compensation, including money wages, as well as other fringe benefits, on the basis of sex. It is administered by the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor. The second is Title VII of the Civil Rights Act of 1964, amended by the Equal Employment Opportunity Act of 1972.[3] To some extent these two acts are overlapping. Title VII, however, does not cover direct compensation, but does cover a wide range of terms and conditions of employment not included in the Equal Pay Act. Title VII provides for the establishment of the Equal Employment Opportunity Commission (EEOC) consisting of five members appointed by the President with the Advice and Consent of the Senate. EEOC members then have the power to set up machinery to administer and enforce Title VII.

In addition to these two major pieces of legislation there is also an Executive Order regarding discrimination in employment on the basis of

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[1] Monthly Labor Review, December, 1973, p. 11.

[2] Equal Pay Act of 1963 as amended by Education Amendments of 1972, (Higher Education Act).

[3] Title VII of the Civil Rights Act of 1964 as amended by the Equal Employment Act of 1972.

sex. Executive Order 11246 as amended by Executive Order 11375, also known in part as Revised Order No. 4,[4] forbids federal government agencies from dealing with firms or institutions which discriminate, and institutions to have an Affirmative Action plan for recruiting and maintaining a work force balanced with respect to minorities and women. This is an exceedingly powerful order since it provides that all current contracts be terminated and no future contracts may be awarded to any firm or institution found in violation. The Office of Federal Contract Compliance, (OFCC), the administrative agency for Revised Order No. 4, has initiatory power, unlike EEOC and the Wage and Hour Division, both of which must wait for formal complaints before investigating alleged discrimination.

These are the three major indications of federal public policy on discrimination in employment on the basis of sex. All states have some policy in this regard as well. Many states provide what was once viewed as protection for women in employment by requiring higher minimum wages, longer rest breaks, and special facilities, e.g., separate lunch areas for women and forbidding women from working more than some specified number of hours per week, working certain shifts, and working during some specified period of pregnancy. These state laws are in conflict with the federal policy noted above and are not acceptable as a defense for violation of federal law. Many states now have adopted equal rights laws of their own. In Wisconsin the Fair Employment Practices Act,[5] administered by the Equal Rights Division, Department of Industry, Labor, and Human Relations, (DILHR), roughly parallels federal policy, the major difference being that all employers, regardless of size are covered where federal law covers firms engaged in interstate commerce with 15 or more employees.

Because all of these pieces of legislation are somewhat vague and general in their language the agencies charged with administering the legislation periodically issue guidelines and interpretations. These guidelines are not legal documents but are meant to indicate to employers, employees, and unions what constitutes discriminatory behavior in the views of the agency. The Administrative agencies use these guidelines when issuing determinations on complaints filed with them. There is legal recourse through the court system and guidelines may be overturned. However, guidelines are generally based on lower court decisions and have in most cases been upheld.

In March 1972 EEOC issued a guideline requiring that maternity leave be treated as a temporary disability. This guideline, Title 29, Labor, Chapter XIV, Part 1604.10, Employment Policies Relating to Pregnancy and Childbirth, added March 31, 1972 states:

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[4]Executive Order 11246 as amended by 11375.

[5]Wisconsin's Fair Employment Practices Law.

a) A written or unwritten employment policy or practice which excludes from employment applicants or employees because of pregnancy is in prima facie violation of Title VII.

b) Disabilities caused or contributed to by pregnancy, miscarriage, abortion, childbir[illegible] recovery therefrom are, for all job-re[illegible] pu[illegible]poses, temporary disabilities and should be treated as such under any health or temporary disability insurance or sick leave plan available in connection with employment. Written and unwritten employment policies and practices involving matters such as the commencement and duration of leave, the availability of extensions, the accrual of seniority and other benefits and privileges, reinstatement, and payment under any health or temporary disability due to pregnancy or childbirth on the same terms and conditions as they are applied to other temporary disabilities.

c) Where termination of an employee who is temporarily disabled is caused by an employment policy which in[illegible]efficient or no leave is available, such a termination violates the Act if it has a disparate impact on employees of one sex and is not justified by business necessity.

In September of 1972 Wisconsin's Department of Industry, Labor and Human Relations issued an identical guideline. In January, 1974 OFCC announced that after public hearings it, too, would issue an identical guideline. These guidelines taken together provide virtually universal coverage in Wisconsin. These guidelines imply that an employer may not dismiss a pregnant employee, set an arbitrary point in the pregnancy for beginning or completing a maternity leave, nor enforce a maternity leave of an arbitrary length of time. Rather an absence from work due to childbearing or complications of pregnancy must be treated as any other temporary disability, including pay of temporary disability benefits in accordance with the employer's established temporary disability policy.

The legal status of the guideline remains in some question. Two cases involving the guideline have recently been decided by the Supreme Court. In Cleveland Board of Education v. LaFleur, a Cleveland Board of Education rule requiring every pregnant teacher to take a maternity leave without pay, beginning five months before the expected birth and ending at the beginning of the next regular semester after the child was the age of three months was challanged. The Court ruled that

"...the Cleveland return rule, insofar as it embodies the three months age provision, is wholly arbitrary and irrational, and hence violates the Due Process Clause of the Fourteenth Amendment. The age limitation serves no legitimate state interest, and unnecessarily penalizes the female teacher for asserting her right to bear children."[6]

Although this decision affirms the portion of the guideline which prohibits employers from requiring an arbitrary length of absence from work for childbearing, a second decision, Geduldig v. AIELLO,[7] suggests that temporary disability payments need not be made during an absence from work for childbearing. In this case the state of California, which administers a temporary disability insurance system for all employees in the state, refused to provide benefits for absences from work due to normal pregnancies. The policy was challenged by a woman who was denied benefits. In its decision the Court ruled:

"We cannot agree that the exclusion of this disability from coverage amounts to invidious discrimination under the Equal Protection Clause. California does not discriminate with respect to persons or groups who are eligible for disability insurance protection under the program. The classification challenged in this case relates to the asserted under-inclusiveness of the set of risks that the State has selected to insure. Although California has created a program to insure most risks of employment disability, it has not chosen to insure all such risks, and this decision is reflected in the level of annual contribution exacted from participating employees."

Later in the decision the Court addresses the issue of the cost:

"It is evident that a totally comprehensive program would be substantially more costly than the present program and would inevitably require state subsidy, a higher rate of employee contribution, a lower scale of benefits for those suffering insured disabilities, or some combination of these measures."

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[6]Cleveland Board of Education v. LaFleur 6 FEP Cases 1253.

[7]Geduldig v. AIELLO 8 FEP Cases 97.

These two decisions were issued in the first half of 1974. It is too early to evaluate the extent to which they are generally applicable. However, while reaffirming part of the guideline, they seem to leave the question of compensation during maternity leaves in some doubt. Nonetheless the administrative agencies which have issued maternity leave guidelines continue to accept complaints.

The maternity leave guidelines have generated a great deal of controversy. Employers have historically had a variety of policies for treating absences from work due to childbearing. These have ranged from firing pregnant employees to requiring some arbitrarily long leave of absence to treating a maternity leave as a temporary disability. In general, however, the maternity leave policy was distinct from the temporary disability policy. The maternity leave guideline will require some adjustment on the part of a large number of employers. Employers have vigorously opposed the guideline on the grounds that the adjustment is extensive and that the guideline imposes a policy which is normally regarded as an employer prerogative. Feminists and equal rights advocates have equally vocally supported the guideline as a means toward insuring equal compensation.

In the debate between these groups there has been very little real evaluation of the impact of the guideline. The Federal Reserve Bank of Boston has estimated the cost of providing temporary disability coverage for its approximately 950 female employees at between $10,361 and $17,073. This figure is estimated using data from 1971-1972 and assumes the number of births experienced in that year is the average number expected overtime.[8] The American Civil Liberties Union has published a descriptive and anecdotal discussion of maternity leave policies existing in the United States.[9] Neither of these studies provide insights into the static cost of the guideline or behavioral economic responses to the cost.

This study is an economic analysis of the guideline. It has three goals. First the static cost of the maternity leave guideline to employers is estimated for the State of Wisconsin. The estimate suggests the magnitude of the cost impact of the guideline. Second, some examination of the economic response to this cost is attempted. The reason for this part of the analysis is to attempt to determine who will bear the cost of the guideline. Finally, the broader goal is to provide a model which will aid in the evaluation of other fringe benefit changes and to attempt to identify some other fringe benefits which may be differentially administered depending on sex.

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[8]Greenwald, Carol, "Maternity Leave Policy," New England Economic Review, Federal Reserve Bank of Boston, January/February 1973, pp. 13-18.

[9]Hayden, Trudy, Punishing Pregnancy: Discrimination in Education, Employment, and Credit, ACLU Reports, Women's Rights Project, October, 1973.

Chapter two sets out the economic framework to be used for the cost calculation and for the analysis of the response. Although chapter two is written specifically for the case of maternity leave, much of what is said is applicable to other fringe benefits. Chapter three presents a discussion of the data to be used in the cost calculation and the analysis of the response. Chapter four presents the cost calculations for the State of Wisconsin. Chapter five examines three possible responses using hospital data. Particular attention is paid to maternity leave but other fringe benefits are examined as well. Chapter six examines union response to differential administration of fringe benefits on the basis of sex and suggests some fringe benefits where this may occur. Finally, chapter seven brings the results of the analysis and draws some policy implications.

CHAPTER TWO

The Economic Framework

The analysis will address itself to two questions. First, what is the initial cost to the employer of treating maternity leave as a temporary disability. This can be dealt with by recognizing that a maternity leave policy and a temporary disability policy are fringe benefits which may be viewed as contributing to the total compensation paid by the employer in return for labor services. Second, how and to what extent may this cost be shifted. We will assume that, given an equilibrium level of total compensation, any exogeneously imposed disturbance to that level will induce adjustment. This will be discussed at a later point.

2.1 The Labor Cost Function

When the firm hires labor it does so with the realization that wages per se are not the only cost incurred attributable to labor. Other costs include costs attributable to provision of wage supplements such as health, life or other insurance, pension plans, etc. In addition there are costs incurred due to absence from work, whether the absence is voluntary and planned, as with a vacation, or involuntary and unplanned, as with c illness. The full labor cost function to be developed considers in particular the costs incurred by the firm due to wages, absences from work due to temporary disability, and all other wage supplements as a group. A temporary disability will be defined as any illness or accident which does not permanently impair the ability of the employee to perform his job but does temporarily require his absence from work.

The firm faces an expected wage bill for one man-year of labor services of E(w)y where E(w) is the expected total wage bill for one man-day of labor and y is the number of days in one man-year. E(w) is composed of the expected total daily compensation paid to regular workers and the expected total daily compensation paid to temporary workers replacing regular workers during an absence:

$$E(w) = E(\bar{w}) + E(\hat{w}) \qquad (1)$$

$$E(\bar{w}) = (\hat{w} + F + \frac{E(\theta_I)}{y - E(a)} S) \left(\frac{y - E(a)}{y}\right) \qquad (2)$$

$$E(\hat{w}) = \frac{E(a)}{y} \hat{w} \qquad (3)$$

Where:

$E(w)$ = expected total wage bill for one man-day of labor services

$E(\bar{w})$ = expected total daily compensation paid to regular workers

$E(\hat{w})$ = expected total daily compensation paid to replacement temporary workers

$\hat{w}$ = daily money wage rate to regular workers

F = daily employer contributions to provision of all fringe benefits except a temporary disability policy

S = daily compensation paid to a regular worker during an absence due to illness

$E(\theta_I)$ = expected number of days of compensated absence an employer pays per worker

$E(a)$ = expected number of days of absence due to illness a worker will experience

y = the number of days in one year, or the relevant period

Substituting (2) & (3) into (1) we have:

$$E(w) = (w + F) \left(\frac{y - E(a)}{y}\right) + \left(\frac{E(\theta_I)}{E(a)} S + w\right) \left(\frac{E(a)}{y}\right) \qquad (1')$$

This is merely a statement that the expected wage rate a firm faces to provide one man-day of labor services is equal to the sum of costs attributable to the regular worker when he is not providing labor services, the costs attributable to the regular worker when he is not providing labor services, and the costs attributable to the temporary worker when he is providing labor services.

The introduction of payments to a regular worker during absences due to illness according to a temporary disability policy introduces an asymmetry. The firm's temporary disability policy is characterized by parameters describing the daily rate of compensation during an absence, the maximum number of days of absence for which compensation is paid, and whether or not proof of temporary disability is required. The asymmetry is introduced by the existence of a maximum number of days for which temporary disability compensation is paid. The firm pays compensation for exactly the number of days of absence as long as the number of days of absence is less than or equal to the maximum number of compensated days in the temporary disability plan, however, only the maximum number of days are paid. Thus while the firm only expects to pay $E(\theta_I)$ days of absence:

$$E(a) = \sum_{i=0}^{y} ip_i \qquad (4)$$

$$E(\theta_I) = \sum_{1=0}^{y} ip_i, \; i = B \text{ for } i > B \qquad (5)$$

where:

i = total number of days of absence

P_i = probability of missing i total number of days

B = maximum number of compensated days under the temporary disability plan and assuming y is the relevant time period.

Note that the probabilities used here are the probabilities derived from a probability distribution of lengths of absences due to temporary disability across all employed individuals. Although any individual may have different subjective probability distribution, as long as employment in a given firm is random with respect to these probability distributions, it is appropriate for the employer to use the average probability distribution. From these expressions it can be seen that:

(6) $E(\theta_I) \leq E(a)$ with the equality holding only if B=y, i.e., the maximum paid days equal the total number of working days in period y

(7) $E(\theta_I) \leq B$ with the equality holding only if p_i, $i = 0,\ldots, B = 0$ i.e., no probability of being absent less than the maximum days

The implication of (6) and (7) is that a firm expects the total number of compensated sick days taken by its employees to be less than the total number of compensated sick days allowed under the temporary disability plan, even if the temporary disability plan allows fewer than E(a) days.

The formulation shown above applies to a type of temporary disability plan where a specified total number of days of absence are compensated, all days of absence up to the total are compensated, regardless of the length of any single absence, proof of temporary disability is required, and the maximum number of days are granted at the beginning of the period with unused days cancelled at the end of the period. Certain variations of this type of plan can be handled with only minor modifications of the formulation. Allowing accumulation, i.e., unused days at the end of period one may be carried over to period two by adding them to the grant of days at the beginning of the next period, is simply an increase in the maximum number of compensated days, B, in period two. If proof of temporary disability is not required then as long as accumulation is not allowed there is an incentive to workers to use all sick days by the end of the period. Those days not used for actual illness will be used as "vacation" days, although the worker may wait until close to the end of the period before taking "vacation" days. When accumulation is allowed there is still an incentive to take some "vacation" days but since unused days are not lost at the end of the period, all days may not be taken. Thus the number of days taken lies between $E(\theta_I)$ and B, with the actual days taken determined by the worker's evaluation of his personal probability of temporary disability and his own risk position. Temporary disability plans may incorporate an exemption period where the first few days of any illness would not be compensated. Under such a plan the probability of total number of days of temporary disability must be supplemented with a probability distribution for the number of incidents.

A second type of temporary disability plan is one which is typical of insured temporary disability plans. This type of plan does not specify a maximum total number of compensated days but does place a limit on the number of compensated days per incident, typically 13 or 26 weeks. The plan typically carries an exemption period of up to eight days and pays for multiple incidents, sometimes requiring thirty days between paid incidents. As will be shown maternity leave can be dealt with in this plan without a formal specification for $E(\theta_I)$.

The above discussion has assumed that the probabilities of any absence and the length of any absence are independent of the parameters of the temporary disability plan. This assumption may not hold. An insurance type of temporary disability plan which pays some proportion of the wage for as long as 26 weeks may be most attractive to an individual whose subjective probability of an absence of long duration is higher than average while a temporary disability plan which provides for fewer days of compensated absence but does not require proof of illness or incorporate exempt days may be most attractive to an individual whose subjective probability of an absence of long duration is lower than average or who has a low subjective probability of any absence but who places high utility on one day "vacation" days. Consequently the work force of any given firm may be non-random with respect to the probability distribution of absences of given lengths. A separate possibility is that the probabilities become functions of the parameters of the temporary disability plan upon employment. As noted earlier a plan which does not allow accumulation provides an incentive to the employee to take "vacation" days when he has sick days left he does not expect to need. A plan with an exemption period provides an incentive to the ill employee to extend his illness through the exemption period to the compensated period.[1] The remainder of the discussion assumes the probabilities are not functions of the parameters of the temporary disability plan.

It is now possible to consider how the maternity leave guideline affects E(w). In equation (1') it is assumed that the temporary disability plan pays for days of absence due to temporary disability regardless of the nature of the temporary disability. However, prior to the maternity leave guideline most temporary disability plans distinguished between a temporary disability caused by childbirth and any other temporary disability, paying compensation for all temporary disabilities except for those associated with childbirth. Equation (1') can be modified to incorporate this distinction as follows:

$$E(w') = (\hat{w} + P)\left(\frac{y - E(a) - E(C)}{y}\right) + \left(\frac{E(\theta_I) + E(\theta_p)}{E(a) + E(C)} S + \hat{w}\right)\left(\frac{E(a) + E(C)}{y}\right) \quad (8)$$

where:

E(a) = expectation of the number of days of absence due to all temporary disabilities except childbirth

E(C) = expectation of the number of days of absence due to childbirth

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[1] This has been noted by actuaries in preparing continuation tables. See Morton D. Miller, "Group Weekly Indemnity Continuation Table Study," Transactions, Society of Actuaries 3, 1951, pp 31-67.

$E(\theta_I)$ = expectation of compensated days paid for all absences due to temporary disability except childbirth

$E(\theta_p)$ = expectation of compensated days paid for all absences due to childbirth

All other variables defined as before

If the temporary disability plan does not pay compensation for absences due to childbirth, $E(\theta_p) = 0$, although $E(C) \neq 0$ since females may get pregnant, whether or not compensation is paid. By requiring the temporary disability plan to pay compensation for absences due to childbirth, and assuming E(C) is unaffected by the policy for treating maternity leave, we increase E(w) for females by $(E(\theta_p))S$. The increase in the total wage bill for one year for an employer is $N_F(E(\theta_p))S$ where N_F is the number of female employees.

Once again, this specification is specifically for a temporary disability plan where a specified total number of days of absence are compensated, all days of absence up to the total are compensated regardless of the length of any single absence, proof of temporary disability is required, and the maximum number of days are granted at the beginning of the period with unused days cancelled at the end of the period. Allowing accumulation has the effect, noted earlier of increasing B over time, thereby increasing $E(\theta_p)$ and thus the total wage bill over time. If proof of temporary disability is not required and no accumulation is allowed, those days not used for pregnancy or illness will be taken as "vacation" days and no increase in the total wage bill will occur. If accumulation is allowed the compensated days actually taken now lie between $E(\theta_I)+E(\theta_p)$ and B while before maternity leave was allowed as a temporary disability the compensated days taken fell between $E(\theta_I)$ and B. However, it is not possible to determine whether there is an increase in number of days taken since that depends on the female worker's risk position. The length of an absence due to childbirth is almost certainly longer than any exempt period in a temporary disability plan. Further, it is very unlikely that two pregnancy leaves for any given individual could occur in a single year. Considering these two pieces of information, $N_F(E(\theta_p))S$ remains a good estimate for the increase in the total wage bill, even under a temporary disability plan with an exemption period.

Finally, the insurance type of temporary disability policy will pay compensation for all days of a maternity leave up to the specific maximum number of days per incident with the possible exclusion of the first few exempt days. Prior to the ruling it would not pay for any days of a maternity leave. Thus the increase in the total wage bill under the ruling is:

$$N_F E(C)S - \{N_F C_E / E(C)\}S \qquad (9)$$

where:

$$E(C) = \sum_{i=0}^{y} iq_i \quad , \quad i = L \text{ for } y > L$$

= the expected length of compensated absence due to childbirth ignoring the exemption period

$C_E / E(C) = \sum_{i=0}^{e} iq_i$ = exempt days under the plan, given an absence

S = daily compensation paid

N_F = number of female workers

q_i = probability of maternity leave of i days

L = maximum number of compensated days per incident which becomes, after substitution:

$$N_F S\left(\sum_{i=e}^{L} iq_i + L \sum_{i=L+1}^{y} q_i\right) \qquad (9')$$

The difference in cost between this insurance type policy and the one discussed above is, of course, that the insurance scheme guaranteed payment for the full maternity leave up to the maximum number of allowed days per incident while the other plan will pay only for available days in excess of those taken for other illnesses. Consequently, the expected cost in the insurance plan exceeds that of the plan allowing a specified total number of compensated days. Thus using $N_F(E(\theta_p))S$ or (9') above, depending on the type of temporary disability policy, and summing over employers, the total initial cost of treating maternity leave as temporary disability may be estimated.

Again, as with the probabilities of absences, the probability of pregnancy or of a length of absence associated with pregnancy may be a function of the treatment of maternity leave. Specifically, where providing a leave of absence longer than the medical disability period for child bearing involves a cost in foregone income, that cost becomes an entry in the calculation of the cost of a child. When maternity leave is treated as a temporary disability, including compensation according to the temporary disability scheme, the loss in income is less, thus reducing the cost of the child, and perhaps increasing the probability of pregnancy. On the other hand, if the length of the maternity leave when treated as a temporary disability is limited to the medical disability period, the length of the absence from work may be shortened. Because the decrease in the cost of a child due to a smaller foregone income during actual child bearing is small relative to the total cost of the child, the induced increase in the probability of pregnancy is assumed to be zero. The lengths of absence used hereafter are assumed to be the actual length of the medical disability period.

2.2 Economic Behavior in Response to Increase in Labor Cost

The above formulation is simply a technical specification of the labor cost function requiring no assumptions about the behavior of the firm, the structure of the industry, or the supply of labor. Although it can, and will, be used to estimate the initial cost of maternity leave to the firm, it does not carry any behaviorial implications. To examine adjustment possibilities it is necessary to postulate firm behavior with respect to fringe benefits.

In the classic theory of the firm a cost-minimizing firm will set the ratio of the marginal value product to factor cost equal across all factors. If an increase in factor cost is imposed on a firm in equilibrium we expect to see adjustment on the part of the firm. In the case of an imposed increase in the cost of one of the fringe benefits, a component in the total cost of labor, adjustment may include a decrease in one of the other components of total labor cost, a decrease in employment of the affected factor with an increase in employment of close substitutes or an increase in output prices. These adjustments all depend on the elasticity of demand for the affected factor which in turn depends on the elasticity of demand for output, the importance of the affected factor in production, the availability of close substitutes for the affected factor, and the elasticity of supply of other factors of production. These factors determine whether and to what extent adjustment can occur. The remainder of this discussion will be concerned exclusively with adjustment in money wages and fringe benefits and charges in the composition of the employed labor force.

If the firm adjusts by maintaining a constant total labor cost we will see either a wage effect or a substitution effect or a combination of these. If we assume the firm is minimizing the cost of provision of fringe benefits, ruling out the possibility of a firm reducing total labor cost by economizing on administrative costs of providing the same total compensation package, the substitution effect is seen through the substitution of the higher cost benefit for reductions in the provision of one other or several other benefits. The wage effect is the reduction of wages to offset the higher cost benefit. If adjustment occurs through the wage effect and substitution effect the classic theory makes no predictions about the particular reduction in the wage-fringe benefit mix. According to the theory it is a matter of indifference on the part of the firm and reduction is equally likely in any component of total labor cost. There is reason to believe, however, that the firm may not be indifferent to the components of total labor cost that will be reduced. In fact, employers may be quite concerned both about the particular fringe benefits offered and about the mix of fringe benefits and wages that makes up the total compensation package.

Becker[2] has suggested that employers who experience costs for investment in specific training for employees will find it to their advantage to pay some of the enhanced productivity in deferred income. Such payments would decrease turnover by increasing benefits as tenure increases, allowing the employer time to recoup investment costs. If employers behave in this way then given a total labor cost employers would prefer to provide some fringe benefits, and, in particular, those fringe benefits would be designed to encourage continued employment. They would embody waiting periods, as with insurance plans for which the employee becomes eligible only after six months or a year of employment, or increase as length of employment increased, as with increases in amount of vacation earned, or be collectible only after long service, as with pensions which are not vested or where vesting occurs only after a number of years of employment. Employers who have designed such fringe benefits may prefer to adjust to an increase in the cost of a fringe benefit by lowering wages or by reducing fringe benefits which are collectible early in an employee's career rather than reduce benefits specifically designed to reduce turnover. Thus we might expect to see these employers reduce the amount of vacation available after one year of service, but not reduce the amount of vacation available after ten years of service or we might expect health insurance decreased but the pension plan to remain unaffected.

Maternity leave when treated as a temporary disability may itself carry some desirable aspects as a fringe benefit which reduces turnover. When maternity leave is treated as a temporary disability the fecund female employee is assured that she will have some continuity in her job and income if she should become pregnant. If maternity leave were treated as a leave of absence, or if pregnant employees were fired, a pregnant employee may not be assured of the same job upon return from the leave, and she may experience a loss of income for some arbitrarily long period. If maternity leave treated as a temporary disability reduces turnover of fecund females, the reduction in turnover cost may partially offset the increase in cost in the temporary disability plan. It is even possible that an employer will prefer to have maternity leave as a temporary disability in his benefit package if fecund females are an important part of his labor force and it is important to him to reduce turnover of these employees.

A firm may be successful in adjustment through wage and substitution effects which maintain a constant total labor cost if labor is supplied with respect to total labor cost and if labor is indifferent to the mix of various components of total labor cost. If this is true an increase in cost of one component offset by a decrease in cost of other components would have no effect on labor supply since total compensation would exactly correspond to total labor cost and would remain constant. Labor supply may not be invariant to the composition of total labor cost, however.

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[2]Gary S. Becker, Human Capital (New York: Columbia University Press, 1964) pp. 8-29.

Mabry[3] has postulated a theory of fringe benefit-wage composition which takes this into account. He suggests that in a would of imperfect information employees find it more difficult to evaluate fringe benefit packages than to evaluate wage offers. Fringe benefit packages may carry complex options and requirements which are difficult to understand until they have been used and there is uncertainty in the evaluation of the extent to which they will be collected. Wage offers, on the other hand, are straight-forward and carry less uncertainty as to their collection. Prospective employees have the most difficulty in evaluating fringe benefit packages but since information about the fringe benefit package increases with the employment period employees who have worked for a firm for some time can evaluate the fringe benefit package more accurately. In this world the ratio of the expected value of the fringe benefit package to the actual value of the fringe benefit package would be less than the ratio of the expected value of the wage offer to the actual wage. The differential would be largest for prospective employees and decrease with employment tenure. The employer who is interested in attracting labor would prefer to offer a total compensation package more heavily weighted in favor of wages since the prospective employee would evaluate such a total compensation offer in a way which more closely coincided with the true value of total compensation. The employer would still offer some fringe benefits which induce lower turnover.

Mabry, who is interested in explaining unions' role in the growth of fringe benefits over time and in the higher level of fringe benefits among unionized firms, introduces unions as an offsetting force. Since unions are interested in maintaining membership at as high a level as possible and in minimizing competition for jobs from non-union members and since current employees are better able to evaluate fringe benefit packages it is in the union's interest to demand a total compensation package more heavily weighted in favor of fringe benefits. This would reduce the attractiveness of the total compensation package to prospective employees without changing the evaluation by current employees. The opposing forces set up by the union's demand for high fringe benefits and the employer's preference for wages results in a total compensation package containing more fringe benefits than the employer might prefer, although fewer fringe benefits than the union might demand.

Even without the introduction of unions this model carries some implications for the fringe benefit-wage composition of total compensation. An expanding firm, aware that wages are more easily evaluated by prospective employees, might be expected to offer a total compensation package with fewer fringe benefits than a contracting firm or a firm

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[3]Bevars Mabry, "The Economics of Fringe Benefits," Ind. Relat. 12:1 February, 1973, pp. 95-96.

with a stable labor force, whose major interest is in maintaining its current labor force. In addition, expanding firms may be more likely to offer fringe benefit packages that are straight-forward in their provisions and therefore more easily evaluated. For example, these firms might offer vacation or the simplest sick leave plans. Contracting firms or firms with a stable labor force would include the more elaborate fringe benefits in their package. For example, we might expect to see a variety of options in their pension plans, or they may offer long-term disability insurance.

Since firms are not expected to offer total compensation packages with identical components the possibilities for adjustment to an increased cost in the temporary disability plan through the wage and substitution effect varies across firms. Firms with a high proportion of total compensation in wages may be expected to respond by lowering wages more frequently than firms with a high proportion of total compensation in fringe benefits, who have a greater opportunity to lower the fringe benefit package. In general, it is not possible to predict which component of total compensation will be adjusted and we do not expect adjustment to occur identically in all firms. It remains true that firms with high wages and maternity leave treated as a temporary disability ought to have lower fringe benefits packages than firms with high wages but maternity leave not treated as a temporary disability. Similarly firms with low wages and maternity leave treated as a temporary disability ought to have lower fringe benefit packages than firms with low wages but maternity leave not treated as a temporary disability. Conversely firms with a given fringe benefit package and maternity leave treated as a temporary disability ought to have lower wages than firms with the same fringe benefit package but maternity leave not treated as a temporary disability.

Since the increased cost in the temporary disability plan due to treating maternity leave as a temporary disability is attributable to an increase in the collection of a fringe benefit, namely sick leave, by one group of employees, women who become pregnant, the employer may attempt to adjust the total compensation package for that group of employees only. In general the employer cannot identify the actual individual employees who will become pregnant, but he can define the group of employees who have some non-zero probability of becoming pregnant, using age as an indicator of the probability of pregnancy. Using this definition the employer may attempt to adjust the total compensation package for fecund females. This is the efficient behavior. However, as a practical matter the equal pay provisions of the Fair Employment Practices Act precludes this firm behavior if such behavior results in different levels of wages and fringe benefits for arbitrarily defined groups of employees in any wage and occupation category. This institutional constraint implies that the firm may not reduce wages or fringe benefits to fecund females only. As a result if adjustment through the wage and substitution effect occur, it will occur with respect to all employees in the wage and occupation category without regard to age or sex.

In addition to variation in labor supply which results from lack of information in evaluating fringe benefit packages, variation in labor supply can arise if various groups of labor evaluate the probability of collection of fringe benefits differently. Maternity leave is a fringe benefit for which the probability of collection is non-zero for only a very specific and well-defined group, i.e., fecund females. Even if employees have full information and can correctly evaluate fringe benefit packages, the value of maternity leave will be zero to all males and to females not subject to the risk of pregnancy. Only females who are subject to the risk of pregnancy will evaluate maternity leave treated as a temporary disability as a non-zero component of total compensation. This implies that to the male and non-fecund female a firm that offers maternity leave as a temporary disability in its total compensation package would appear to offer a lower total compensation package than the firm that offers a total compensation package of equal cost but without maternity leave treated as a temporary disability although fecund females will be indifferent between a total compensation offer including maternity leave treated as a temporary disability and an offer of equal value but excluding maternity leave treated as a temporary disability. The indifference of fecund females to the two offers depends on the coincidence of their subjective probability of pregnancy, which they use in evaluating the total compensation package, and the average probability of pregnancy, used by firms to evaluate the total compensation package. If these two probabilities diverge, as they very well might, fecund females will prefer the package with maternity leave if they are more likely than average to become pregnant but they will prefer the package without maternity leave if they are less likely than average to become pregnant. In the absence of counteracting behavior on the part of the firm we would expect to see firms which offer maternity leave as a temporary disability as part of their total compensation package attract a labor force which has a higher proportion of females in the childbearing ages than firms which offer a total compensation package with the same value but without maternity leave treated as a temporary disability.

Of course neither the firm nor labor response operates in the absence of the other. Any examination of the age-sex composition of the employed labor force must take into account the operation of both forces. If the age-sex composition of a firm with maternity leave treated as a temporary disability is weighted in favor of young females, ceteris paribus, then the labor supply effect exceeds the labor demand effect. If it is weighted in favor of males and non-fecund females then the labor demand effect exceeds the labor supply effect. If the age-sex composition in the firm with maternity leave treated as a temporary disability is similar to that of the firm without maternity leave treated as a temporary disability, the two effects offset each other.

This discussion has provided two hypotheses about firm behavior when maternity leave is treated as a temporary disability. The first deals with the wage effect. Given the fringe benefit package firms offering maternity leave treated as a temporary disability ought to have lower wages than firms not treating maternity leave as a temporary disability. The second suggests a substitution effect. Given wages firms offering maternity leave treated as a temporary disability ought to have smaller fringe benefit packages than firms not treating maternity leave as a temporary disability. In addition, firms and labor may respond to maternity leave treated as a temporary disability in a way that alters the age and sex composition of the labor force. Because the effect on the age and sex composition depends on the relative size of the individual effects of the firm behavior and labor supply behavior it is not possible to predict the net effect on the age and sex composition. The net effect can be examined in a descriptive way, however.

It is important to emphasize that the discussion above and the analysis to follow only deals with two sorts of partial firm adjustment. As noted earlier firm adjustment can also occur through output price changes. It is not appropriate to assume that if adjustment is not seen in total compensation or in labor demand with respect to age or sex adjustment does not occur. Rather, adjustment may be taking place in ways that do not effect either total composition or labor demand with respect to age and sex. This qualification should be kept in mind throughout the analysis.

A brief caveat is appropriate here in order to set the above discussion in the context of other work done in the area of fringe benefits. This discussion has dealt exclusively with the static microeconomic behavior of the firm. Much of the limited discussion of fringe benefits in economic literature has dealt with the growth of fringe benefits over time and the positive correlation between fringe benefits and wages across industries. Rice[4] has argued that preferential income tax treatment, economies of scale in benefit purchase, turnover costs and unionization have all lead to increased willingness to supply fringe benefits by firms as wages rise. Bailey and Schwenk[5] have documented the positive correlation between wages and fringe benefits across industries in the United States. This positive correlation does not detract from the above discussion or hypotheses. There is nothing suggested above which precludes the possibility that as total compensation increases, a larger proportion of total compensation will be in the form of fringe bene-

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[4]Robert G. Rice, "Skill Earnings, and the Growth of Wage Supplements," American Economic Review 56:2, May 1966, pp. 583-593.

[5]William R. Bailey and Albert E. Schwenk, "Employer Expenditures for Private Retirement and Insurance Plans," Monthly Review, 95:7, July 1972, pp. 17-19.

fits. The discussion provides some hypothesis about fringe benefit-wage behavior within an industry at a given time.

This discussion has provided the full labor cost function which can be used to estimate the initial cost of maternity leave in Wisconsin as well as some hypotheses about firm behavior with respect to maternity leave. With these set out it is now appropriate to turn to an empirical estimation of the full labor cost function, and an empirical test of the wage and substitution effects and an empirical descriptive examination of the age and sex composition within an industry.

CHAPTER THREE

The Data

Since the quality of the empirical analysis rests heavily on the data and since at the beginning of this study there was little data available that was suitable for use in estimating the cost of maternity leave treated as a temporary disability or for testing the hypotheses noted above, it is appropriate at this point to discuss the data collected in some detail. Much of the data used here was collected by survey. The survey data can be divided into two categories. First, there is a set of data pertaining to employers in Wisconsin which together with a somewhat more detailed set of data for school districts in Wisconsin will be used to estimate the cost of maternity leave for the entire state. Second, there is a set of data pertaining to hospitals in Wisconsin which can be used to make an accurate estimate of the cost of maternity leave for hospitals and can be used to test the hypotheses of wage and substitution effects and for examination of the age and sex characteristics of the employed labor force in hospitals. Each of these data sets will be discussed separately and in detail below.

3.1 The Employer And School District Data

To make the estimate of the cost of maternity leave treated as a temporary disability using the full labor cost function developed above it was necessary to know the number of female employees by age in the state, the age-specific probability of pregnancy among employed females, the wage rates for female employees in the state, and the fringe benefit packages offered by employers. The first three items are available either in published sources or the appropriate variables can be created from data available in published sources. These will be discussed below along with other supplementary data. Data describing the fringe benefit packages offered by employers is not readily available, however. It was necessary to conduct a survey of a sample of employers in Wisconsin to collect the required data concerning the prevalence of various fringe benefits, the details of temporary disability policies, and the treatment of maternity leave. The survey, shown in Appendix A, contains questions designed to determine the maximum number of compensated days granted per year under the temporary disability plan, the percent of salary paid per compensated day, the number of days of accumulated sick leave allowed, the extent to which absences due to

pregnancy or childbirth have been covered, whether or not proof of illness is required, a description of the leave of absence policy, and the extent to which life insurance, health insurance, and pension plans exist and are maintained during a temporary disability or a leave of absence. Ideally the survey would have determined premium payments or funding costs for the variety of fringe benefits. However, in the interest of brevity and to encourage a maximum response this information was not ascertained.

The survey was administered by mail questionaire to two random samples of employers. The two random samples, one a sample of two hundred employers and the other a sample of one hundred employers, were stratified on the basis of Standard Industrial Classification Code and employment. From employment information from the 1970 Census, percentage of total employment and percentage of female employment in each of the sixteen major industry categories were calculated. Mining and entertainment were discarded because of their small size, less than 1% of total employment. Agriculture was discarded because of the difficulty of identifying employers and because the nature of the industry makes stated temporary disability policies unlikely. Construction was discarded because of the small number of women employed. Finally, transportation, communications, utilities, professional and related, and public administration were discarded because data collected in the hospital survey, school district survey, and from the State of Wisconsin's Department of Industry, Labor, and Human Relations covers these industries. After these exclusions there are seven groups: durable manufacturers; non-durable manufacturers; wholesale trades; retail trades; and personal services except households. These Census categories were then matched with the appropriate SIC codes. Both the 100 and 200 samples were stratified on this basis. Within these SIC codes the 200 sample was stratified on the basis of the percent of total employment in each group in firms of employment sizes 0-10, 11-25, 26-50, 51-100, 101-200, 201-500, and 500 and above. The 100 sample was stratified on the basis of the percent of firms within each of these employment sizes. For each of the two samples every firm in each employment size group and SIC code had an equal probability of being drawn.

The two sample design was used because temporary disability policies or responses may vary randomly, with employment size, or with industry type (SIC code). This design is an attempt to provide one sample, the 200 sample, which draws most heavily from larger firms and one sample, the 100 sample, which draws most heavily from smaller firms. Tables 3.1 and 3.2 show the number of firms drawn from each industry and size category for the two samples. Out of the total of 300 firms surveyed only 125 responded, a response rate of 41.7%.

Although this is a low response rate, it is not surprising for several reasons. One is that several regional associations in Wisconsin have explained to me that they urge members who solicit their advice not to cooperate with such surveys on the grounds that responding to questionaires is time consuming,

Table 3-1

Number of Firms Drawn by Industry Group and Size Category
100 Sample

Industry Group	Employment Size Group							
	0-10	11-25	26-50	51-100	101-200	201-500	500+	Total
Durable Manufactures	4	1	1	1	1	0	0	8
Non-Durable Manufact.	3	1	1	1	0	0	0	6
Wholesale Trade	8	2	1	0	0	0	0	11
Retail Trade	39	7	2	1	0	0	0	49
Finance, Ins., Real Estate	9	1	1	0	0	0	0	11
Business and Repair	6	1	0	0	0	0	0	7
Person. Ser. Except Household	7	1	0	0	0	0	0	8
Total	76	14	6	3	1	0	0	100

Table 3-1A

Number of Responses by Industry Group and Size Category
100 Sample

Industry Group	Employment Size Group							
	0-10	11-25	26-50	51-100	101-200	201-500	500+	Total
Durable Manufactures	3(75)	0(0)	1(100)	0(0)	0(0)	-	-	5(62.5)
Non-Durable Manufact.	1(33.3)	1(100)	0(0)	0(0)	-	-	-	2(33.3)
Wholesale Trade	3(37.5)	0(0)	0(0)	-	-	-	-	3(27.3)
Retail Trade	14(35.9)	4(57.1)	1(50)	1(100)	-	-	-	20(40.8)
Finance, Ins., Real Estate	8(88.9)	1(100)	1(100)	-	-	-	-	10(90.9)
Business and Repair	2(33.3)	1(100)	-	-	-	-	-	3(42.9)
Personal Services	1(14.3)	1(100)	-	-	-	-	-	2(25)
Total	32(42.1)	8(57.1)	3(50)	2(66.7)	0(0)	-	-	42(45)

$X^2 = 16.6562$

Table 3-2

Number of Firms Drawn by Industry Group and Size Category
200 Sample

Industry Group	Employment Size Group							
	0-10	11-25	26-50	51-100	101-200	201-500	500+	Total
Durable Manufactures	2	2	3	4	4	8	45	68
Non-Durable Manufact.	1	2	2	3	4	7	17	36
Wholesale Trade	2	2	2	2	2	1	1	12
Retail Trade	13	11	8	5	3	3	13	56
Finance, Insurance, Real Estate	2	2	1	2	1	1	3	12
Business and Repair	2	1	1	1	1	1	1	8
Personal Services Except Household	3	1	1	1	1	1	(1)	8 (9)
Total	25	21	18	18	16	22	80(81)	200 (201)

Table 3-2A

Number of Responses by Industry Group and Size Category
200 Sample

Industry Group	Employment Size Group							
	0-10	11-25	26-50	51-100	101-200	201-500	500+	Total
Durable Manufactures	0(0)	1(50)	3(100)	1(25)	1(25)	3(37.5)	19(42.2)	28(41.2)
Non-Durable Manufactures	0(0)	1(50)	2(100)	3(100)	1(25)	4(57.1)	7(41.2)	18(50)
Wholesale Trade	1(50)	1(50)	1(50)	0(0)	1(50)	0(0)	1(100)	5(41.2)
Retail Trade	6(46.2)	2(18.2)	1(12.5)	4(80)	1(33.3)	1(33.3)	3(25.1)	18(32.1)
Finance, Insurance Real Estate	1(50)	1(50)	0(0)	2(100)	1(100)	1(100)	1(33.3)	7(58.3)
Business Repair	1(50)	1(100)	0(0)	0(0)	0(0)	0(0)	0(0)	2(25)
Personal Services Except Household	1(33.3)	0(0)	1(100)	0(0)	0(0)	0(0)	[1(100)]	2(25)[3(33.3)]
Total	10(40)	7(33.3)	8(44.4)	10(55.6)	5(31.3)	9(52.3)	31(38.8)	80(40) [32(40)] [81(40.5)]

$x^2 = 29.9717$

provides too much information to "outsiders", and provides no direct benefits to the firms responding. A second reason is that the survey itself was clearly associated with the Equal Rights Division of the Wisconsin Department of Industry, Labor, and Human Relations which is the enforcing agency for the state guideline on maternity leave. There may be some hesitancy about providing information which could be in violation of interpretations of the law. Although the response was low, it seems not to vary consistently by SIC or employment size.

Since the estimate of the cost is to be made for all employers in the state it is necessary to provide estimates of temporary disability policies and other fringe benefits among employers not covered by the survey, i.e., mining, entertainment, agriculture, construction, transportation, untilities, professional and related, and public administration. Since most of these are industries with a small employment relative to total employment and with a low proportion of female employment, a proportionate cost will be attributed to them. This is discussed in some detail in a later chapter. The professional and related category contains the education industry and the health care industry which together employ approximately 28 % of all employed females in Wisconsin. In addition nearly 80% of the health care industry and nearly 60% of the education industry are women. Because women are an important part of the labor force in the industries it was deemed important to collect more detailed data for them. The hospital data is discussed below. In order to capture most of the education industry, approximately 75%, a survey of all school districts in Wisconsin was conducted. The Wisconsin Education Association has published data on salary schedules by school district as well as mean and median salaries by school district and grade level and fringe benefit offerings, including life and health insurance, temporary disability policies, long term disability policies, and pension plans, by school district. This data is available for 342 of the 440 Wisconsin public school districts. The Wisconsin Department of Public Instruction has data available on experience, age, and sex distributions of school teachers by school district and grade level for all 440 school districts. These two sources of data provide a quite complete data set for school districts from the outset. The only important piece of data that was missing is the maternity leave policies of school districts. The Wisconsin Association of School Boards agreed to endorse a survey conducted of all school districts to obtain data on specific maternity leave policies. The survey, shown in Appendix A, was done by mail questionaire of all 440 school districts. There are 348, 80% responses to the survey.

Although this response rate is excellent there is reason to believe that the quality of the responses is less than might be desired. School districts have been made painfully aware of the existence and provisions of the maternity leave guideline through a series of complaints brought against several school districts in the past year. They are also aware of the role of the Department of Industry, Labor, and Human Relations in enforcement of

the guideline. Although the Wisconsin Association of School Boards agreed to endorse the survey, they preferred not to provide a cover letter or receive the returned surveys. As a consequence the cover letter for the survey clearly associates the survey with the enforcement agency for the guideline on maternity leave. There is the potential incentive for school districts to provide responses indicating compliance with the guideline regardless of the actual specifics of the maternity leave policy. This incentive would operate if school districts believed data would be potentially available for compliance work. Although it is impossible to say the extent to which this problem biases the data, it undoubtedly operates to some extent. Over 75% of the school districts indicate maternity leave policies which do not require a leave of absence for pregnancy. This may in fact be the case but if it is this industry differs from other industries in Wisconsin. Only 31% of employers responding to the survey of employers and 35% of hospitals responding to the hospital survey discussed below reported maternity leave policies substantially similar to their temporary disability policies. Further adding to the suspicion that school districts may have misreported their maternity leave policies are the written comments on a number of the returned surveys suggesting that "our policies conform to the new DILHR guidelines". This reservation about the quality of the data obtained by survey from school districts ought to be kept in mind when evaluating the estimate of cost for school districts.

In addition to the professional and related category the public administration category deserves special attention. About 1/3 of the employees in this category are females. Since most of the employees in this category are federal and state employees fringe benefit information for federal and state employees, which is readily available from the federal and state Civil Service Commissions, will be used for this category.

3.2 The Hospital Data

The hospital data which is used deserves special attention since it is used not only as an element in the cost estimate for the entire state, but also as the data base used for testing the behavioral hypotheses described in an earlier chapter. The hospital industry was chosen as the industry to be used for examination of the behavioral hypotheses for several reasons. The Wisconsin Hospital Association was quite interested in the study and was willing to provide some data they had collected and to assist in collection of data not already in existence. This cooperation allowed easy identification and location of hospitals and assured me of at least some success in data collection. In addition, existing data suggested that hospitals have a wide range of fringe benefits and particularly temporary disability policies which have been in force for some time. This includes some hospitals with

maternity leave policies which conform precisely to the temporary disability policies, as required by the guideline, as well as some hospitals with maternity leave policies which differ substantially from the temporary disability policies. Because most of these policies have been in force for some time, and are not simply a response to the recent guideline, hospitals have had time to adjust wages and fringe benefit packages, and the age and sex composition to a position of equilibrium. Finally, 80% of employees of hospitals are women. Insofar as there is a cost associated with maternity leave, it is likely not to be trivial to hospitals.

Although some hospital data had been collected by the Wisconsin Hospital Association, it was fragmentary and contained some technical problems which precluded its use. Consequently most of the hospital data was collected by survey. The survey was done of all hospitals in Wisconsin whose primary function is not geriatric or psychiatric care. Geriatric and psychiatric hospitals were excluded because of the somewhat different labor force composition found in these hospitals, including more social workers and psychiatric aids and fewer degreed registered nurses. The definition used has the effect of excluding most public hospitals, which are largely psychiatric or geriatric in nature. There are 189 hospitals fitting this definition in the state.[1] Of these 189 hospitals 164 belong to the Wisconsin Hospital Association (WHA). WHA agreed to cooperate fully with the study, including providing a cover letter urging individual hospital cooperation in the survey, receiving returned surveys, and providing certain existing data. As noted below, this excellent cooperation is largely responsible for a reasonable complete and accurate data set for hospitals.

In March 1973 WHA, in cooperation with the Wisconsin Society of Hospital Personnel Administrators (WSHPA), conducted a fringe benefit survey of member hospitals. The survey is very complete, covering all phases of fringe benefit offerings. Although WHA was anxious to provide as much data as possible, WSHPA was reluctant to provide the full survey. WHA and WSHPA did agree to provide a large part of the survey which was relevant to maternity leave, however. There were 115 hospitals responding to this survey. These survey forms were coded and returned to WSHPA. The questions from this survey were reproduced exactly and hospitals not responding to the WHA-WSHPA survey were re-surveyed in August 1973.

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[1] This number is the number of hospitals recorded in American Hospital Association, Hospital Statistics, 1971, Chicago, 1972. The hospital industry is somewhat fluid with new hospitals entering and old hospitals going out of business. This number may be slightly larger or smaller at the present time.

In addition to this fringe benefit data certain other data is essential to the estimation of the cost of maternity leave and testing the hypotheses stated earlier, including wage data, age and sex composition of the employed labor force, and certain specific data on maternity leave policies. An extensive survey was designed, to be administered by mail questionaire, to collect this data. The survey included two sections, in addition to the fringe benefit section described above. The first section was a maternity leave section containing questions concerning age and sex composition of the hospital's employees, details of the maternity leave policy, and the use of the maternity leave policy over the past two years. The second section was a wage survey requesting base, maximum and average monthly wage rates for eighteen occupation categories. This wage section, modeled after a similar survey conducted annually by WHA and WSHPA, does not collect wage rates for all possible occupations, but it does provide wages for the major categories existing in these hospitals. WHA participated in the survey to the extent of approving the survey questions, writing a cover letter urging participation in the survey, receiving returned survey forms, and providing mailing labels. There are 84 hospitals who responded completely to the three sections, maternity leave, wage, and fringe benefit sections, of the survey, although on any individual question a particular hospital may have provided no response. All three sections of the survey are shown in Appendix A.

After the mailed survey forms were returned in September 1973 an effort was made to increase the response rate by contacting non-respondent hospitals by telephone. All non-responding hospitals were contacted and an additional 79 hospitals responded to the telephone survey. The telephone survey was essentially an abbreviated version of the mailed survey. Major differences include requesting wage data on three gross occupation categories rather than the eighteen specific categories collected in the mailed survey, and collecting the employee age distribution for only three age groups rather than the five age groups collected on the mailed survey. These differences require that the hospital data be treated as two data sets defined on the method of response in the analysis that follows. Much of the analysis will be done on both data sets, although analyses involving age composition will only be performed on the data obtained by mail survey. Hereafter the hospital data collected by mailed survey will be known as the primary data set and the hospital data collected by telephone survey will be known as the secondary data set.

The hospital data seems to be quite accurate. Number of hospital beds, which is collected in the survey is also reported by the American Hospital Association for 1970.[2] The two figures are within 10 beds of each other in every case. Discussions with WHA officials and hospital administrators in-

[2]American Hospital Association, Hospital Statistics, 1971, Chicago, 1972.

dicate that the values obtained in the surveys are reasonable. Missing data in the primary data set is minimal. Appendix B shows a summary of the hospital data. Most of the missing wage data is the result of hospitals not maintaining a full time staff person in some of the occupation categories. I initially had some fears that hospitals would alter their reported maternity leave policies to be consistent with the guideline. However, this appears not to have happened, probably because of the nature of the cover letter and because it came from WHA.

3.3 Supplementary Data

In addition to the data collected by survey a certain amount of supplementary data is necessary for the estimate of the cost of maternity leave treated as a temporary disability. The age and sex distribution of employees by SIC code in Wisconsin can be estimated from the 1970 Census, the 5% Public Use Sample for Wisconsin. Average wage rates by SIC code are available from Census data. The use of this data, and its limitations, is discussed below in more detail.

A vital piece of data for making the cost estimate of maternity leave treated as a temporary disability is the age-specific probability of pregnancy for employed women. Ideally this probability of pregnancy would be specific to Wisconsin and corrected for education. It is important to have the probability of pregnancy for all women. The fertility and female labor force participation are negatively correlated, that women who work have lower fertility rates than women who do not work.[3] There is not, however, a recent calculation of the fertility rates of employed women. It is necessary to calculate this fertility rate. The cost estimate requires the fertility rate to be expressed as the probability of pregnancy given employment. This probability may be estimated by the number of births to employed females of age i in a given year divided by the number of working women of age i in that year. Although there is no data which allows the calculation of this probability directly, there is data for a random sample of women who had births collected for 1967, 1968, and 1969 by the Bureau of Vital Statistics. This data, the National Natality Survey, had a total sample of 10,500 births and includes information on employment. The conditional age and education specific probability of a birth given

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[3]See, for example Stanley Lebergott, "Population Change and the Supply of Labor," in Demographic and Economic Change in Developed Countries. A Conference of Universities, National Bureau of Economic Research, Princeton: Princeton University Press, 1960; Clyde V.

employment can be estimated using the following relationship:

$$p(b/w) = \frac{p(w/b)p(b)}{p(w)}$$

where:

$p(b/w)$ = conditional probability of a birth given employment

$p(b)$ = simple probability of a birth

$p(w)$ = simple probability of employment

$p(w/b)$ = conditional probability of employment given a birth

The probabilities $p(b)$ and $p(w/b)$ can be estimated from the National Natality Survey and $p(w)$ can be estimated from employment data published by the Bureau of Labor Statistics.[4] These data allow calculation of the probability of pregnancy given employment by age and education for years 1967, 1968, and 1969. Appendix C shows the data used to make these calculations. Tables C-9 through C-11 shows the calculated probabilities. Since the National Natality Survey excludes illegitimate births, the calculation of the probabilities is corrected for this.

These probabilities are for 1967-1969, while other data used to make an estimate of the cost of maternity leave are for 1973. Between 1968 and 1973 the fertility rate has dropped from 85.7 per 1000 to 71.1 per 1000. This had been a secular decline in fertility. It was assumed that the effect on fertility of employed women has been affected proportionally and the probabilities of pregnancy were adjusted accordingly. Table 3-3 shows the probabilities of pregnancy adjusted for 1973. Since these probabilities are not specific to Wisconsin it will be assumed that Wisconsin fertility resembles national fertility.

One other piece of data is necessary for making the cost estimate. The cost of maternity leave depends on the expected absence due to maternity leave which is a combination of the probability of pregnancy and the absence from work due to the medical disability period associated with pregnancy. To calculate this expected absence due to maternity leave it is necessary to have a distribution of medical disability periods associated with pregnancy or the mean medical disability period associated with pregnancy. Although the National Natality Survey used in

[4]Bureau of Labor Statistics, "Educational Attainment of Workers," Special Labor Force Reports Nos. 92, 103, and 125, U.S. Department of Labor, 1967, 1968, and 1970.

TABLE 3-3

Probability of Pregnancy Given Employment by Age and Education, Estimated for 1973

Age	Years of Education					
	0-8	9-10	12	13-15	16-17	Total
20-24	.0897	.1850	.1308	.1359	.0814	.1275
25-34	.0741	.0743	.0555	.1298	.0810	.0836
35-44	.0295	.0154	.0335	.0178	.0218	.0205
45-54	.0003	--	.0001	.0012	--	.0002
Total (20-54)	.0225	.0470	.0510	.0751	.0575	.0503
Total (20&over)	.0117	.0375	.0445	.0649	--	.0368

These probabilities are calculated by taking a simple average of the probabilities for the years 1967, 1968 and 1969, shown in Appendix C, then correcting by for the secular decline in fertility. See the text and Appendix C for a more detailed discussion of the calculator technique.

calculating the probabilities of pregnancy provides some information about the lengths of absences from work because of childbearing, this data is suitable for calculating the period of medical disability associated with pregnancy. The period of absence reported in the survey does not correspond to the medical disability period because of the influence of enforced leaves of absence longer than the medical disability period t' or the availability of such leaves. In fact, there is no existing data which provides a distribution of the medical disability period associated with childbearing or which allows calculation of the mean length of the medical disability period. There are suggestions that this mean length may be in the neighborhood of six weeks in the testimony at hearings preceeding the adoption of the maternity leave guideline by both EEOC and DILHR. Of course, the medical disability period may depend on the physical requirements of the job. A longer period of absence may be required for a physical job, while a shorter period may be necessary for a sedentary job. In the cost estimates three possible means are used: four weeks, six weeks, and eight weeks.

CHAPTER FOUR

Estimates of the Cost of Treating Maternity Leave as a Temporary Disability

Using the data described above it is now possible to estimate the cost of treating maternity leave as a temporary disability for the state of Wisconsin. As noted earlier policies toward maternity leave prior to the EEOC and DILHR guidelines varied from dismissal of pregnant employees to requiring a long leave of absence without pay to allowing maternity leave to be taken as a temporary disability including temporary disability payments. The cost to be estimated here is defined as the static cost assuming no change in behavior incurred as a result of the firm's change from its existing policy of treating of maternity leave prior to the maternity leave guidelines to a policy of treating maternity leave exactly like a temporary disability according to its temporary disability policy. That is, the cost estimated is the cost attributable to the guidelines on maternity leave. This definition implies that a firm treating maternity leave as a temporary disability prior to the maternity leave guidelines has a zero cost imputed to it in the cost estimate. There are four separate sections to the cost estimate. The first is the estimate of the cost to employers covered by the employer survey. The second is the estimate of costs to all employers not covered by the employer survey except the professional and related category. The third section is the estimate for the education industry and the fourth is the estimate for the health care industry. These four estimates are made separately then summed to obtain an estimate for the entire state. Each estimate is discussed separately below.

4.1 The Estimate for Employers in Industries Covered by Survey

There were 1,726,814 employed persons 14 years old and over in Wisconsin in 1970. Of these 641,185, or 37.1%, were women. Table 4-1 shows employment by major industry category. These people are employed by 81,703 private and public employers. The survey described earlier covers 39,101 of these employers in the categories durable goods manufacturing, nondurable goods manufacturing, wholesale trade, retail trade, finance, insur-

Table 4-1

Industry of Experienced Civilian Employed Persons by Sex
for the State of Wisconsin, 1970

Industry	Males	Females	Total	% Female
Total	1085629	641185	1726814	37.1%
Agriculture, Forestry & Fisheries	94995	15101	110096	13.7%
Mining	2648	202	2850	7.1%
Construction	75506	4568	80074	5.7%
Manufacturing	387861	124794	512655	24.3%
Durable Goods	260249	71966	332215	21.7%
Nondurable Goods	125642	51979	177621	29.3%
Transportation, Communications and Other Public Utilities	68713	16752	85465	19.6%
Wholesale and Retail Trade	181638	144265	325903	44.3%
Wholesale Trade	44790	13056	57846	22.6%
Retail Trade	136848	131209	268057	48.9%
Finance, Insurance and Real Estate	29628	32404	62032	52.2%
Business and Repair Service	25840	9911	35751	27.7%
Personal Services	15292	41443	56735	73.0%
Entertainment and Recreation Services	6098	4296	10394	41.3%
Professional and Related Services	104118	194211	298329	65.1%
Health Services	22755	88532	111287	79.6%
Educational Services	57303	85915	143218	60.0%
All Other	24060	19764	43824	45.1%
Public Administration	45263	17794	63057	28.2%
Industry Not Reported	48029	35444	83473	42.5%

Source, 1970 Census of Population

Table 4-2

Number of Firms in Surveyed Industries by Employment Size

Industry	Number of Employees								
	0-5	6-10	11-25	26-50	51-100	101-200	201-500	500 & above	Total
Durable Manufactures	1197	409	562	318	242	136	111	119	3094
Non-durable Manufac.	835	332	407	263	175	133	103	56	2304
Wholesale Trade	2650	688	679	246	103	49	14	6	4435
Retail Trade	12009	3133	2521	848	272	94	40	32	18949
Finance, Ins. & Real Est.	3241	461	409	125	74	33	18	11	4372
Business & Repair Serv.	1984	365	246	69	34	23	7	2	2730
Pers. Serv. except Household	2492	376	207	74	46	12	10	-	3217
Total	24408	5764	5031	1943	946	480	303	226	39101

Source: Wisconsin Department of Industry, Labor, and Human Relations

ance, and real estate, business and repair services, and personal services except household. These seven categories cover 336,647 or 52.5% of female employees and 975,884 or 56.5% of all employment. The first section of the estimate of the cost of maternity leave attributable to the guideline is made for these industry categories. The cost estimate for these industries is made using the following equation:

$$Cost_i = \alpha m_i \quad \{(\min(D_i,A))\ (wF_i(1+\alpha_{Hi}H+\alpha_{Li}L+\alpha_{pi}P+V_i))(\Sigma_a\ N_{Fia}C_a)\}$$

where:

α_i = proportion of firms in industry i not treating maternity leave as a temporary disability

D_i = mean maximum accumulation of compensated sick days

A = assumed number of days necessary for maternity leave

w_{Fi} = mean wage for females in industry i

α_{Hi} = proportion of firms in industry i offering health insurance

H = mean health insurance premium as a proportion of wages among all employers

α_{Li} = proportion of firms in industry i offering life insurance

L = mean life insurance premium as a proportion of wages among all employers

α_{pi} = proportion of firms industry i offering pension plans

P = mean pension contribution as a proportion of wages among all employers

V_i = mean proportion of wages earned as vacation pay in industry i

N_{Fia} = number of female employees in industry i of age a

C_a = probability of pregnancy among employed women of age a

In this equation w_{Fi}, the mean wage for female employees in industry i, and N_{Fia}, the number of female employees of age a in industry i, are available for Wisconsin from Census data. The wage variable is adjusted, using the Bureau of Labor Statistics wage index, to reflect wage increases to 1975. It is assumed that the number of female employees and their age and industry distribution aid not changed between 1970 and 1973. C_a, the age specific-probability of pregnancy among employed women, is calculated from the National

Natality Survey discussed earlier. It is assumed that employer contributions for health insurance, life insurance, pension plans, and vacations are not maintained during a leave of absence but must be maintained during when maternity leave is treated as a temporary disability. The cost of maintaining these benefits, along with the wage cost, make up the cost of providing the total compensation package and these costs are all considered in the cost estimates. The mean employer contributions for health insurance, life insurance, and pension plans, H, L, and P are available as a proportion of wages for 1970 from estimates made by Walter W. Kolodrubetz.[1] These are adjusted for 1973 using the Consumer Price Index for Services. V_i, the mean proportion of wages earned as vacation pay, is available from the Area Wage Surveys of the Bureau of Labor Statistics. Values for α_{mi}, α_{Hi}, α_{Li}, α_{Pi}, and D_i, the proportion of firms in industry i providing various fringe benefits and the number of accumulated compensated sick days allowed, are estimated from data collected in the employer survey. Table 4-3 shows these estimates.

Both w_{Fi} and N_{Fi} include part time as well as full time employees. The cost estimates are made assuming that part time employees receive fringe benefits, including compensated sick days, in proportion to hours worked. In practice it is likely that part time employees are not eligible for fringe benefits and in particular compensated sick pay. To the extent this is true the cost estimates made here are over estimates.

In practice a cost estimate is made for firms in each industry having an insured temporary disability plan and a separate estimate is made for firms having a sick leave plan which allows sick leave to be earned at some rate. This procedure is used because D_i in insured plans is substantially longer than in earned sick leave plans, because D_i is independent of prior usage of the plan for other temporary disabilities in insured plans but not in earned sick leave plans, and because the daily compensation in insured plans is generally some proportion of the full wage. In the earned sick leave plan estimate it is necessary to make some assumption about the compensated sick leave days available for maternity leave.

The correct value to use for the number of compensated sick days available for maternity leave would be the number of sick days earned each year minus the expected number of sick days used for reasons other than maternity leave each year by female employees subject to pregnancy summed over the average number of years of tenure for female employees at the beginning of a maternity leave with the maximum allowed accumulation of sick days as an upper limit. To calculate this requires data on expected number of work-loss days for employed females for all illnesses exclusive of pregnancy and the average job

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[1] Walter W. Kolodrubetz, "Two Decades of Employee-Benefit Plans, 1950-70: A Review," Soc. Sec. Bill, 34:4, April 1972, pp. 10-22.

Table 4-3

Percent of Employees Covered by Various Sick Leave Plans, by Industry, for Surveyed Industries

Industry	No Sick Leave Plan	Earned Sick Leave Plans			Insurance Plans					Having Maternity Leave
	1	2	3	4	5	6	7	8	9	10
Durable Manufacturers	9.82%	34.06%	10.27 Days	18.39 Days	54.84%	42.93%	60.62%	57.07%	$65.28	37.97%
Non-Durable Manufacturers	18.22	56.45	12.17	33.31	25.34	33.33	70.00	66.67	27.00	16.66
Wholesale Trade	29.59	33.31	27.50	27.50	37.10	100.00	60.00	-	-	-
Retail Trade	57.87	32.37	14.44	18.32	9.12	100.00	70.00	-	-	12.23
Finance, Ins. & Real Estate	12.20	87.80	11.99	24.55	-	-	-	-	-	45.45
Business & Repair Serv.	12.27	75.45	9.88	22.08	12.27	-	-	100.00	70.00	50.90
Personal Serv. Exc. Household	79.69	20.82	6.00	6.00	-	-	-	-	-	100.00
Total	27.61%	41.91%	12.82	22.06	30.24%	90.50%	65.16%	9.50%	$54.09	27.03%

Note: Columns 1, 2, and 5 sum to 100%; Columns 6 and 8 sum to 100%.
Source: Employer Survey

tenure at the time of pregnancy for employed females. The latter is not available from any source. The National Center for Health Statistics has calculated the average number of work-loss days for employed females for 1972 at 5.6 days.[2] However, this calculation includes work-loss days resulting from childbirth. Because of these data limitations it is not possible to calculate the appropriate value for number of compensated sick days available. In the absence of this value estimates are made using two assumptions. The first assumption is that the average number of sick days earned in one year is available. The assumption of maximum accumulation of sick days available implies that the average tenure for female employees is long enough to allow this accumulation. If no sick days were taken for any other temporary disability the average tenure for female employees required to accumulate the maximum number of sick days would vary from one year in wholesale trade and personal services except household to nearly three years in non-durable manufacturers and business and repair services. If sick days are used for reasons other than maternity leave the tenure required would be longer. To the extent that average tenure for female employees is less than that required to accumulated sick days are available are over-estimates. The assumption of available sick days equal to compensated sick days earned in one year assumes an average tenure long enough to have earned these sick days after allowance for use of sick days for reasons other than maternity leave. It seems reasonable to assume that on the average at least this number of sick days are available. To the extent that female employees who get pregnant have an average more than the compensated number of sick days earned in one year available for maternity leave the estimates made using this assumption are under-estimates. Together these two assumptions provide a minimum and a maximum assumption with respect to the number of compensated sick days available.

For those firms having insured temporary disability plans no such problem arises since in all cases insured plans pay at least thirteen weeks of disability compensation. This is sufficient to cover the entire maternity leave under all assumptions of the average length of maternity leaves including the maximum assumption of twelve weeks. Insured temporary disability plans frequently do not pay the entire daily wage in disability payments. Instead they pay some flat dollar amount or some proportion of wages. In making the estimate for insured plans the wage variable is modified appropriately.

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2 Current Estimates From the Health Interview Survey, U.S. Dept. of Health, Education, and Welfare, Health Resources Administration, HRA 74-1512, Sept. 1973, Table 16.

Both earned sick leave plans and insured temporary disability plans often incorporate one short period at the beginning of an illness for which compensation is not paid. This exempt period is designed to minimize the number of false sick leave claims while providing income protection for legitimate illnesses. The exempt period varies from one to eight days. Since the employer survey did not collect data on the exempt period and since there is no other source for this data, the estimates do not consider exempt days. To the extent that exempt days are found in temporary disability plans the estimates are over estimates of the cost for the assumed lengths of maternity leaves.

As Table 4-3 shows the employer survey revealed some temporary disability plans which treat maternity leave as a temporary disability. Because the cost estimate is an estimate of the maternity leave guideline a zero cost is assumed for these firms. It is assumed that treatment of maternity leave is independent of the type of sick leave plan and that reports of treatment of maternity leave as a temporary disability are not the result of the maternity leave guideline.

The cost estimates consider the cost of maintaining four other fringe benefits during an absence due to childbearing. These are vacation, health insurance, life insurance, and pension contributions. It is assumed that an average of two weeks of paid vacation[3] per year is earned which implies that 4% of wages during temporary disability is accruing in the form of vacation pay. The percent of employees by industry covered by health insurance, life insurance, and pension plans is estimated from the employer survey. Table 4-4 shows the figures used. It is assumed that the provision of these fringe benefits is independent of the type of temporary disability plan offered. Some support for this assumption is provided in the examination of hospital data in Chapter Five. It is also assumed that employer contributions for the provision of these benefits were not maintained during a maternity leave of absence but must be maintained during a maternity leave treated as a temporary disability. If the fringe benefit contributions continue during a leave of absence or if they are not continued during a temporary disability these cost estimates are over-estimates. There may be other fringe benefit contributions made which are not considered here. To the extent that these contributions are made during a temporary disability but not during a leave of absence these estimates are under-estimates.

To make the cost estimates it is necessary to assume some length for the medical disability period associated with childbirth. Although the National Natality Survey provides some data on the length of an absence from work during childbirth this data is contaminated with the prevailing institutional requirements between 1967 and 1969. Since these include

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[3]Bureau of Labor Statistics, Area Wage Surveys, Bulletin 1625-90.

Table 4-4

Percent of Employees Covered by Selected Fringe Benefits
By Industry, for Surveyed Industrues

Benefits / Industry	Health Insurance	Life Insurance	Pension Plans
Durable Manufacturers	95.6%	95.6%	88.3%
Non-durable Manuf.	84.6%	84.6%	84.6%
Wholesale Trade	53.8%	26.8%	59.7%
Retail Trade	50.7%	45.0%	55.6%
Finance, Insurance and Real Estate	94.5%	92.0%	92.0%
Business and Repair Service	63.2%	63.2%	63.2%
Personal Services except Household	61.8%	61.8%	61.8%
Total for these Industries	77.3%	73.9%	76.1%

Source: Survey Data

allowing or requiring a leave of absence of arbitrary length for maternity leave this data does not provide a good estimate of the medical disability period associated with childbirth. In the hearings preceding the adoption of both the DILHR and EEOC guidelines several doctors suggested that the medical disability period may depend on the nature of the work done, four assumptions about the required length are used in making the cost estimate. The minimum assumption of an average of four weeks of absence undoubtedly results in an under-estimate of the cost while the maximum assumption of an average twelve weeks of absence is probably an over-estimate. The two intermediate assumptions, an average of six weeks of absence and an average of eight weeks of absence, may reflect more realistic costs. It will be noted that the cost estimates do not increase proportionately with the length of absence assumed. This is because of the assymetry of the earned sick leave plans which will not pay compensation for an entire twelve week absence although it may pay for four weeks of absence.

Tables 4-5 and 4-6 show the estimated cost of the maternity leave guideline by industry assuming the maximum accumulation of sick leave days are available and assuming sick days earned in one year are available. These estimates are shown both as dollar costs and as a percent of wages and salaries. Table 4-7 shows the estimated cost per female employee in these industries. It is important to recall that the estimated dollar cost is attributable only to those firms having a temporary disability plan which pays some compensation. The percent of wages and salaries figures are calculated using all wages and salaries, however. If it is assumed that wages and salaries are independent of temporary disability policies and maternity leave policies it is possible to calculate the cost of the maternity leave guideline as a percent of wages and salaries in firms with a temporary disability that does not treat maternity leave as a temporary disability. These calculations are shown in Table 4-8 . In an earlier chapter it was argued that fringe benefits should have lower wages. If this is the case firms offering a temporary disability policy which pays compensation should have lower wages than those firms not offering a temporary disability policy, resulting in an under-statement in these calculations. Although this may be partially offset by the tendency for firms offering a temporary disability policy which does not cover maternity leave to have lower wages than firms offering temporary disability policy which includes maternity leave, these calculations remain somewhat understated. Table 4-7 shows the cost per female employee for firms offering a temporary disability policy which does not include maternity leave.

Although the cost of the maternity leave guideline for these seven industry categories under the maximum assumptions of maximum accumulation of sick leave available and a twelve week average absence exceeds $5 million, relative to total wages and salaries or female employees this cost is quite small. This is in part due to the proportion of employees not

Table 4-5

Estimated Annual Cost of Treating Maternity Leave as a Tempoary Disability, by Industry for Surveyed Industries, Assuming One Year's Earned Sick Leave[1]

	Four Week		Six Week		Eight Week		Twelve Week	
	Average Dollar Cost	Absence % of Wages	Average Dollar Cost	Absence % of Wages	Avevage Dollar Cost	Absence % of Wages	Average Dollar Cost	Absence % of Wages
Durable Manufacturers	$941,236	.036%	$1,394,136	.053%	$1,752,041	.067%	$2,824,836	.108%
Non-Durable Manufacturers	600,079	.035	711,681	.041	823,284	.048	1,046,487	.061
Wholesale Trade	196,956	.029	281,869	.041	326,084	.048	414,513	.061
Retail Trade	608,153	.041	693,788	.047	797,424	.054	986,695	.067
Finance, Ins. & Real Estate	605,421	.011	650,462	.012	695,505	.013	785,586	.015
Business and Repair Serv.	91,846	.029	109,372	.035	126,898	.040	163,551	.052
Personal Serv. Exc. Household	36,108	.019	40,024	.021	43,941	.023	51,773	.027
Total	$2,532,461	.019	$3,295,916	.025%	$4,565,177	.034%	$5,385,441	.040%

[1]For employees covered by earned day-type temporary disability plan it is assumed that one year's earned sick days are available.

Table 4-6

Annual Cost of the Maternity Leave Guideline Assuming Maximum Accumulation, By Industry for Surveyed Industries

Industry	Four Week Average Absence		Six Week Average Absence		Eight Week Average Absence		Twelve Week Average Absence	
	Dollar Cost	% of Wages & Salaries	Dollar Cost	% of Wages & Salaries	Dollar Cost	% of Wages & Salaries	Dollar Cost	% of Wages & Salaries
Durable Manufactures	$181201	.030%	$999762	.038%	$1218323	.047%	$1655446	.064%
Non-Durable Manufactures	738563	.043%	1107844	.064%	1290303	.075%	1470359	.085%
Wholesale Trade	196957	.029%	281829	.041%	326084	.048%	414513	.061%
Retail Trade	661929	.045%	736443	.050%	828957	.056%	995985	.067%
Finance, Ins. &Real Est.	518060	.010%	649308	.012%	673879	.012%	723020	.014%
Business & Repair Serv.	95332	.030%	112179	.036%	120933	.038%	140040	.048%
Personal Serv. Exc. Household	0		0		0		0	
Total	$2992042	.022%	$3887365	.029%	$4458479	.03370	$5399333	.040%

For employees covered by earned-day type temporary disability plans it is assumed that the maximum average accumulation is available.

Table 4-7

Annual Cost of the Maternity Leave Guideline per Female Employee
By Industry for Surveyed Industries

Industry	Four Week Average Absence		Six Week Average Absence		Eight Week Average Absence		Twelve Week Average Absence	
	Max. Accum.	One year Earned Sick Leave	Max. Accum.	One year Earned Sick Leave	Max. Accum.	One year Earned Sick Leave	Max. Accum.	One year Earned Sick Leave
Durable Manufactures	$10.86	$8.74	$13.89	$11.78	$16.93	$14.82	$23.00	$20.89
Non-Durable Manufactures	$14.21	$10.00	$21.31	$11.73	$24.82	$13.47	$28.29	$16.93
Wholesale Trade	$15.09	$15.09	$21.59	$21.59	$24.98	$24.98	$31.75	$31.75
Retail Trade	$5.04	$4.25	$5.61	$4.81	$6.32	$5.52	$7.59	$6.79
Finance, Ins. & Real Est.	$15.99	$10.19	$20.04	$10.95	$20.80	$11.71	$22.31	$13.22
Business & Repair Serv.	$9.62	$5.65	$11.32	$6.53	$12.20	$7.41	$14.13	$9.34
Personal Serv. Exc. Household	0	0	0	0	0	0	0	0
Total	$8.48	$6.49	$11.02	$7.91	$12.63	$9.27	$15.31	$11.94

Table 4-8

Annual Cost of the Maternity Leave Guideline as a Percent of Wages and Salaries for Those Firms Affected

Industry	Four Week Average Absence		Six Week Average Absence		Eight Week Average Absence		Twelve Week Average Absence	
	Max Accum.	One Year Earned Sick Leave	Max Accum.	One Year Earned Sick Leave	Max Accum.	One Year Earned Sick Leave	Max Accum.	One Year Earned Sick Leave
Durable Manufactures	.054%	.043%	.069%	.058%	.084%	.073%	.114%	.103%
Non-Durable Manufactures	.063%	.044%	.094%	.052%	.110%	.060%	.125%	.075%
Wholesale Trade	.041%	.041%	.059%	.059%	.068%	.068%	.086%	.086%
Retail Trade	.121%	.102%	.135%	.116%	.152%	.132%	.182%	.163%
Finance, Ins. & Real Estate	.020%	.013%	.025%	.014%	.026%	.015%	.028%	.017%
Business & Repair Serv.	.070%	.041%	.083%	.048%	.089%	.054%	.103%	.068%
Personal Serv. Exc. Household	-	-	-	-	-	---	-	-
Total	.042%	.032%	.055%	.039%	.063%	.046%	.076%	.059%

covered by a temporary disability plan or covered by a plan which includes maternity leave. Even after correction for these plans, however, the cost remains small. This is largely because of the low proportion of female employees in most of these industries and because of the low fertility rates and relatively old age distribution. If all births in these industries are single births, only 5.4% of women in these industries will experience a birth in any year. Of course, if the fertility rate increases among employed women, or if more young women enter employment in these industries, the cost will increase.

4.2 The Estimate for Employers Not Covered by Survey Data

There are 58,713 female employees in the industry categories agriculture, forestry, and fisheries, mining, construction, transportation, communications, and other public utilities, entertainment and recreation services, and public administration. This is 16.8% of the 351,936 total employment in these industry categories and 9.2% of total female employment in Wisconsin. The estimating equation shown above is used to estimate the cost for these industries. Since data on temporary disability policies and other fringe benefits are not available for these industries from survey data or other sources the values for the fringe benefit variables in these industries are assumed to be similar on average to the average values obtained on the surveyed industries. Although the cost estimates shown in the following tables are shown by industry, the assumption that the average values for the fringe benefit variables obtained for surveyed industries apply to these unsurveyed industries need not apply to each industry individually but only on average across all these industries for the estimate of the total cost for these industries to be reasonable. The age distribution for female employees and mean wage rates for these industries were used in the calculation. Tables 4-9 through 4-11 show the estimates of the cost of the maternity leave guideline for these industries.

4.3 The Estimate for the Educational Services Industry

There are 85,915 female employees in the category educational services. This is 60.0% of the total 143,218 employees in this category and 13.4% of all female employees in Wisconsin. Of the female employees in this category 70.5% are employed by elementary and secondary schools. The estimate of the cost of the maternity leave guideline for this industry is made using the data on public school systems described earlier.

Table 4-9

Estimated Cost of the Maternity Leave Guideline for Industries Not Covered by Survey Data, Assuming Sick Days for One Year Available

Industry	Four Week Average Absence		Six Week Average Absence		Eight Week Average Absence		Twelve Week Average Absence	
	Dollar Cost	%of Wages & Salaries	Dollar Cost	%of Wages & Salaries	Dollar Cost	%of Wages & Salaries	Dollar Cost	%of Wages & Salaries
Agric, Forestry & Fisheries	$68685	.008%	$85727	.010%	$95335	.011%	$136854	.016%
Mining	0		0		0		0	
Construction	$32593	.002%	$40630	.003%	$48668	.004%	$64743	.005%
Trans., Communication, and Other Pub. Util.	$133243	.002%	$168938	.003%	$206633	.004%	$280024	.005%
Entertainment & Recreation Ser.	$24263	.049%	$30290	.061%	$36317	.073%	$48371	.097%
Public Administration	$136312	.020%	$170957	.025%	$205603	.030%	$274894	.040%
Total	$395096	.014%	$496542	.017%	$592556	.021%	$804886	.029%

Table 4-10

Estimated Cost of the Maternity Leave Guideline for Industries Not Covered by Survey Data, Assuming Maximum Accumulation of Sick Days Available

Industry	Four Week Average Absence		Six Week Average Absence		Eight Week Average Absence		Twelve Week Average Absence	
	Dollar Cost	%of Wages & Salaries	Dollar Cost	%of Wages & Salaries	Dollar Cost	%of Wages & Salaries	Dollar Cost	%of Wages & Salaries
Agric, Forestry & Fisheries	$88063	.010%	$110665	.013%	$120273	.014%	$161792	.018%
Mining	0	0	0	0	0	0	0	0
Construction	$41843	.003%	$52535	.004%	$60573	.005%	$76648	.006%
Trans, Commun, & Other Pub. Ut.	$166763	.003%	$212076	.004%	$249772	.004%	$323162	.006%
Entertainment & Recreation Ser.	$31100	.063%	$39089	.079%	$45116	.091%	$57170	.115%
Public Administration	$173847	.025%	$219262	.032%	$253908	.037%	$323199	.047%
Total	$501616	.017%	$633627	.022%	$729642	.025%	$941971	.033%

Table 4-11

Annual Cost of the Maternity Leave Guideline per Female Employee by Industry
For Industries Not Covered by Survey Data

Industry	Four Week Average Absence		Six Week Average Absence		Eight Week Average Absence		Twelve Week Average Absence	
	Max Accum.	One Year Earned Sick Leave	Max Accum.	One Year Earned Sick Leave	Max Accum.	One Year Earned Sick Leave	Max Accum.	One Year Earned Sick Leave
Agric, Forestry & Fisheries	$5.83	$4.55	$7.33	$5.68	$7.96	$6.31	$10.71	$8.45
Mining	-	-	-	-	-	-	-	-
Construction	$9.16	$7.14	$11.51	$8.89	$13.26	$10.65	$16.78	$14.17
Trans, Com, & Other Pub. Ut.	$9.95	$7.95	$12.66	$10.08	$14.91	$12,33	$19.29	$16.72
Entertainment & Recreation Ser.	$7.24	$5.65	$9.10	$7.05	$10.50	$8.45	$13.31	$11.26
Public Administration	$9.77	$7.66	$12.32	$9.61	$14.27	$11.55	$18.16	$15.45
Total	$8.54	$6.73	$10.79	$8.45	$12.43	$10.09	$16.04	$13.71

Table 4-12

Estimated Annual Cost of the Maternity Leave Guideline per Female Employee in Firms With a Sick Leave Plan Not in Compliance

Industry	Four Week Average Absence		Six Week Average Absence		Eight Week Average Absence		Twelve Week Average Absence	
	Max Accum.	One Year Earned Leave	Max Accum.	One Year Earned Leave	Max Accum.	One Year Earned Leave	Max Accum.	One Year Earned Leave
Agriculture, Forestry, & Fisheries	$11.04	$8.61	$13.87	$10.75	$15.08	$11.95	$20.28	$17.16
Mining	-	-	-	-	-	-	-	-
Construction	$17.34	$13.51	$21.77	$16.84	$25.10	$20.17	$31.76	$26.83
Durable Manuf.*	$19.41	$15.63	$28.83	$21.06	$30.26	$26.49	$41.12	$37.35
Non-Dur.Manuf.	$20.85	$14.68	$31.27	$17.22	$36.42	$19.76	$41.50	$24.84
Trans., Commun & Other Pub. Ut.	$18.85	$15.06	$23.97	$19.09	$28.23	$23,35	$36.52	$31.65
Wholesale Trade*	$21.43	$21.43	$30.66	$30.66	$35.47	$35.47	$45.09	$45.09
Retail Trade*	$13.64	$11.48	$15.18	$13.02	$17.09	$14.93	$20.53	$18.37
Finance, Ins. & Real Est.	$33.38	$21.28	$41.84	$22.86	$43.42	$24.45	$46.59	$27.51
Personal Serv. Exc. Household*	-	-	-	-	-	-	-	-
Entertainment & Recreation Serv.	$13.70	$10.69	$17.23	$13.35	$19.88	$16.00	$25.19	$21.32
Public Admin.	$18.50	$14.50	$23.33	$18.19	$27.01	$21.87	$34.39	$29.25
Total	$16.07	$12.35	$20.80	$15.00	$23.87	$17.77	$29.17	$23.07

*Surveyed Industries

First, the cost is calculated for each school district reporting a temporary disability plan which pays compensation but does not cover maternity leave using the estimating equation shown in 4.1 with the appropriate wage and fringe benefit variables for each school district. It is assumed that school districts having no temporary disability plan or reporting a temporary disability plan which covers maternity leave experience no cost as a result of the maternity leave guideline. These costs are summed across all school districts. This provides a cost estimate for public school districts. To obtain an estimate for private school districts it is assumed that the distribution of wages, fringe benefits, and female employees by age is identical to that in public schools and a proportional cost is calculated. Finally, to obtain the cost for other educational services the cost per female employee subject to the risk of pregnancy in public and private school districts is calculated and applied to female employees subject to the risk of pregnancy in other educational services. This procedure implicitly assumes that the values for fringe benefits and wages in other educational services are identical to those in school districts. Since employment in other educational services includes a large number of clericals, this assumption may result in an overestimate of the cost for this group. As can be seen from Table 4-13, the cost for this group is large relative to that for school districts. This is a result of the much younger age distribution of females employed in other educational services relative to that in school districts.

The costs per female employee for female employees in school districts affected by the guideline may be taken as reasonably accurate. These estimated costs substantially exceed the estimated cost per female employee in affected firms in other industries for two reasons. First, the average wage for female employees in these school districts is twice that in the other industries. Second, the temporary disability plans in all the affected school districts are of the earned-day type, pay the full wage, and nearly all school districts allow a maximum accumulation sufficient to cover a twelve week absence. There is data available on the experience of school teachers in the school district for the affected school district. Since sick days are accumulated with experience in the school district, this data should suggest the number of sick days available for maternity leave if sick days are taken for no other reason. The average number of years of experience in these school districts is less than one year, indicating that at most the sick days earned in one year are available. Consequently the cost estimate which considers only the sick days earned in one year are available may most accurately reflect the realized cost.

Caution should be used when considering the cost estimates for the entire educational services industry. The previous chapter contains a discussion of the possible reflection of the maternity leave guideline in reports of maternity leave practices collected by survey from school districts. To the extent that maternity leave practices prior to the maternity leave guidelines are not reported accurately, these cost estimates are under-estimates for the entire industry.

Table 4-13

Estimated Annual Cost of the Maternity Leave Guidelines for School Districts and for Educational Services

	Maximum Accumulation of Sick Leave				
	One Year Earned Sick Leave	Hour Week Average Absence	Six Week Average Absence	Eight Week Average Absence	Twelve Week Average Absence
Dollar Cost, Pub. School Districts	$96322	$217983	$280197	$378704	$566060
%of Wages, Public School Districts	.018%	.041%	.052%	.071%	.106%
Cost Per Female Emp., Public School Dist.	$1.59	$3.60	$4.63	$6.26	$9.35
%of Wages, Affected Public School Dist.	.153%	.347%	.446%	.603%	.902%
Cost Per Female Emp., Affected Pub. School.Dis.	$27.17	$61.49	$79.04	$106.83	$159.68
Dollar Cost, All Other Educational Services	$137918	$312118	$401198	$542245	$810440
Total Dollar Cost All Educational Services	$234240	$530101	$681395	$920949	$1376500
%of Wages, All Educational Services	.029%	.066%	.084%	.114%	.170%
Cost per Female Emp., All Ed. Services	%2.73	%6.17	%7.93	%10.72	%16.02

4.4 The Estimate for the Health Services Industry

There are a total of 111,287 employees in the health services industry. Of these 88,532, 79.6%, are female and 13.8% of all employed females are employed in this category. Hospitals employ 66.4% of those employed in this category and 68.7% of the females employed in this category. Nearly 80% of employment in hospitals is in hospitals covered by the survey discussed earlier. The procedure for making the estimate of the cost of the maternity leave guideline for the health services industry is similar to that used for the educational services industry. First the cost for individual hospitals responding to the survey is calculated. These costs are summed across hospitals. Table 4-14 shows these estimates summed for each data set and across all hospitals. It is then assumed that non-responding hospitals and hospitals not falling under the survey definition of non-geriatric non-psychiatric hospitals experience proportional costs. Finally it is assumed that the values for fringe benefit variables and wages in other health care services are similar on average to those in hospitals. This allows the cost per female employee subject to the risk of pregnancy in hospitals to be applied to female employees subject to the risk of pregnancy in other health care services. Table 4-19 shows the estimated cost for the health care services industry.

The estimate made for the primary data set of the survey hospitals is made from the most detailed and complete data and is consequently the most accurate. For this primary data set data is available for base and maximum wages as well as average wages. Estimates were made using all three wage variables for primary data set hospitals. These estimates, shown in Tables 4-14 through 4-19, provide some bounds for the estimates. The estimate for the secondary data set hospitals is made with somewhat less detailed data for employment and wages and may be somewhat less accurate than the estimate for primary data set hospitals, although it is still reliable.

The estimate for all other health care services is the least reliable component of the cost estimate for this category. In this group are 18,230 female employees of convalescent institutions. Because these institutions employ lower skilled labor than hospitals, mean wages may be lower in these institutions. There are also 8,745 female employees in offices of physicians, dentists, and chiropractors. These may also be lower skilled and have lower mean wages than female employees of hospitals. In addition the employers of these women are likely to be small employers who are less likely to have structured temporary disability policies. To the extent these characterizations of the all other health care services group hold the cost estimate for this group is an overestimate.

Table 4-14

Estimated Annual Cost of the Maternity Leave Guideline for Hospitals[1]

	Maximum Estimate[2]			Middle Estimate[3]			Minimum Estimate[4]		
	Dollar Cost	% of Wages	Dollar Cost Per Employed Female	Dollar Cost	% of Wages	Dollar Cost Per Employed Female	Dollar Cost	% of Wages	Dollar Cost Per Employed Female
Primary Data Set[7]	$ 742,794	.285%	$25.60	$414,193	.159%	$14.27	$307,759	.118%	$10.60
Secondary Data Set[8]	$ 540,132	.333%	$24.00	$278,764	.172%	$12.43	$108,470	.067%	$ 4.84
Total, Both Data Sets	$1,289,292	.303%	$24.94	$692,963	.164%	$13.47	$416,229	.099%	$ 8.09

[1]Assuming an eight week average absence is required for childbearing
[2]Assuming that the maximum accumulation of sick days is available in earned sick day plans
[3]Assuming that sick days for one year are available in earned sick day plans
[4]Assuming that sick days for one year minus four days are available in earned sick day plans
[5]Calculated using all wages
[6]Calculated using all female employment
[7]Calculated using average wages
[8]Corrected for non-responses

Table 4-15

Estimated Annual Cost of the Maternity Leave Guideline Per Female Employee, All Hospitals

	Base Wage		Maximum Wage		Average Wage	
	One Year Earned Leave	Max. Accum.	One Year Earned Leave	Max. Accum.	One Year Earned Leave	Max. Accum.
PRIMARY DATA SET						
Four Week Average Abs.	$11.02	$12.50	$12.46	$14.99	$12.20	$13.71
Six Week Average Absen	$12.03	$18.27	$13.66	$21.73	$13.98	$19.95
Eight Week Average Abs.	$12.99	$23.49	$14.82	$27.98	$14.27	$25.60
Twelve Week Average Abs.	$14.70	$40.45	$16.88	$48.60	$16.19	$47.33
SECONDARY DATA SET						
Four Week Average Abs.	--	--	--	--	$ 9.25	$12.92
Six Week Average Abs.	--	--	--	--	$11.19	$19.35
Eight Week Average Abs.	--	--	--	--	$12.43	$24.09
Twelve Week Average Abs.	--	--	--	--	$16.77	$32.41
TOTAL, BOTH DATA SETS						
Four Week Average Abs.	--	--	--	--	$10.91	$13.37
Six Week Average Abs.	--	--	--	--	$12.32	$19.69
Eight Week Average Abs.	--	--	--	--	$13.47	$24.94
Twelve Week Average Abs.	--	--	--	--	$16.44	$40.83

Table 4-16

Estimated Annual Cost of the Maternity Leave Guideline
as a Percent of Payrolls, All Hospitals

	Base Wages		Maximum Wages		Average Wages	
	One Year Earned Sick Lv.	Max. Accum.	One Year Earned Sick Lv.	Max. Accum.	One Year Earned Sick Lv.	Max. Accum.
PRIMARY DATA SET						
Four Week Average Abs.	.123%	.139%	.139%	.167%	.136%	.152%
Six Week Average Abs.	.134%	.203%	.152%	.242%	.147%	.222%
Eight Week Average Abs.	.145%	.261%	.165%	.311%	.159%	.285%
Twelve Week Average Abs.	.164%	.450%	.188%	.541%	.180%	.526%
SECONDARY DATA SET						
Four Week Average Abs.	--	--	--	--	.128%	.178%
Six Week Average Abs.	--	--	--	--	.155%	.267%
Eight Week Average Abs.	--	--	--	--	.172%	.333%
Twelve Week Average Abs.	--	--	--	--	.232%	.448%
TOTAL, BOTH DATA SETS						
Four Week Average Abs.	--	--	--	--	.133%	.162%
Six Week Average Abs.	--	--	--	--	.150%	.239%
Eight Week Average Abs.	--	--	--	--	.164%	.303%
Twelve Week Average Abs.	--	--	--	--	.200%	.496%

Table 4-17

Estimated Annual Cost of Maternity Leave Per Female Employee, Affected Hospitals

	Base Wage		Maximum Wage		Average Wage	
	One Year Earned Leave	Max. Accum.	One Year Earned Leave	Max. Accum.	One Year Earned Leave	Max. Accum.
PRIMARY DATA SET						
Four Week Average Abs.	$15.64	$17.73	$17.68	$21.27	$17.30	$19.45
Six Week Average Abs.	$17.06	$25.92	$19.38	$30.82	$18.72	$28.31
Eight Week Average Abs.	$18.43	$33.32	$21.03	$39.69	$20.25	$36.32
Twelve Week Average Abs.	$20.86	$57.39	$23.95	$68.95	$22.97	$67.15
SECONDARY DATA SET						
Four Week Average Abs.	--	--	--	--	$18.58	$25.96
Six Week Average Abs.	--	--	--	--	$22.48	$38.86
Eight Week Average Abs.	--	--	--	--	$24.97	$48.38
Twelve Week Average Abs.	--	--	--	--	$33.68	$65.09
TOTAL, BOTH DATA SETS						
Four Week Average Abs.	--	--	--	--	$17.69	$21.40
Six Week Average Abs.	--	--	--	--	$19.85	$31.47
Eight Week Average Abs.	--	--	--	--	$21.67	$39.93
Twelve Week Average Abs.	--	--	--	--	$26.18	$66.53

Table 4-18

Estimated Annual Cost of the Maternity Leave Guideline for Hospitals as a Percent of Payrolls for Affected Hospitals

	Base Wage		Maximum Wage		Average Wage	
	One Year Earned Leave	Max. Accum.	One Year Earned Leave	Max. Accum.	One Year Earned Leave	Max. Accum.
PRIMARY DATA SET						
Four Week Average Abs.	.236%	.268%	.267%	.321%	.261%	.294%
Six Week Average Abs.	.258%	.391%	.293%	.466%	.283%	.428%
Eight Week Average Abs.	.278%	.503%	.318%	.599%	.306%	.548%
Twelve Week Average Abs.	.315%	.867%	.362%	1.041%	.347%	1.014%
SECONDARY DATA SET						
Four Week Average Abs.	--	--	--	--	.266%	.371%
Six Week Average Abs.	--	--	--	--	.321%	.555%
Eight Week Average Abs.	--	--	--	--	.357%	.691%
Twelve Week Average Abs.	--	--	--	--	.481%	.930%
TOTAL, BOTH DATA SETS						
Four Week Average Abs.	--	--	--	--	.262%	.318%
Six Week Average Abs.	--	--	--	--	.295%	.467%
Eight Week Average Abs.	--	--	--	--	.321%	.592%
Twelve Week Average Abs.	--	--	--	--	.388%	.987%

Table 4-19

Estimated Annual Cost of the Maternity Leave Guideline for the Health Care Services Industry[1]

	Maximum[2] Estimate	Middle[3] Estimate	Minimum[4] Estimate
Surveyed Hospitals	$1,282,926	$ 692,963	$ 416,229
Other Hospitals	332,925	179,827	108,013
Other Health Care Services	755,930	408,310	245,252
Total, Health Care Services	$2,371,781	$1,281,100	$ 769,484
Total as Percent of Wages[5]	.578%	.312%	.187%
Total, per Employed Female[6]	$30.18	$16.30	$ 9.79

[1]Assuming an eight week absence is necessary for childbearing
[2]Assuming that the maximum accumulation of sick days is available in earned sick day plans
[3]Assuming that sick days for one year are available in earned sick day plans
[4]Assuming that sick days for one year minus four days are available in earned sick day plans
[5]Calculated using all wages
[6]Calculated all female employment

4.5 The Estimate for the State of Wisconsin

It is now possible to sum the estimates discussed above to obtain an estimate of the cost of the maternity leave guideline to all employers in the state of Wisconsin. Table 4-20 shows the estimates. The other category contains 47,351 employees, 23,291 of these female, in the professional and related services category not covered by the health care services or educational services estimates and 83,473 employees, 35,444 of them female, whose industry of employment is not ascertained. The cost for this category is estimated under the assumption that the cost is proportional to that in all other industries.

As can be seen from Table 4-20, the estimate of the cost of the maternity leave guideline ranges from $4.4 million under the minimum assumptions about the length of compensated leave available and needed to $12.8 million under the maximum assumptions about length of compensated leave available and necessary. This is .028% to .082% of wages. To help put this in perspective consider that in 1970 employer and employee contributions for provision of temporary disability and long term disability benefits were .69% of wages and salaries in private industry.[1] The cost of maternity leave will bring this to .72% to .77% of wages and salaries or raise it 3% to 11%.

The discussion of the components of these estimates makes clear that the cost for specific industries, or firms, depends heavily on the proportion of young females employed by that industry, or firm. Consequently, hospitals where employment is 82% female, the cost is 72% of that for surveyed industries, where employment is 36% female. With this in mind we turn now to a discussion of employer response to this cost using hospital data.

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[1] Kolodrubetz, p. 17.

Table 4-20

Estimated Annual Cost of the Maternity Leave Guideline for the State of Wisconsin[1]

	Maximum[2] Estimate	Middle[3] Estimate	Minimum[4] Estimate
Surveyed Industries[5]	$4,458,479	$3,269,440	$2,843,786
Unsurveyed Industries[6]	743,307	611,221	551,808
Educational Services	370,434	179,946	124,172
Health Care Services	2,371,781	1,281,100	769,484
Other[7]	346,996	196,709	153,285
Total	$8,290,997	$4,538,416	$4,442,535
Total, as Percent of Wages	.053%	.029%	.028%

[1]Assuming eight weeks absence is required for childbearing
[2]Assuming maximum accumulation is available in earned sick day plans
[3]Assuming sick days earned in one year are available in earned sick day plans
[4]Assuming sick days earned in one year minus four days are available in earned sick day plans
[5]Includes durable manufacturers, non-durable manufacturers, wholesale trade, retail trade, finance, insurance, and real estate, business and repair services and personal services
[6]Includes agriculture, forestry, and fisheries, mining, construction, transportation, communications and other public utilities, entertainment and recreation services, and public administration.
[7]Includes professional and related services other than health or education, and industry not reported.

CHAPTER FIVE

Hospital Response to the Cost Maternity Leave

In Chapter Two three hypotheses about employer response to an additional cost of a fringe benefit like maternity leave were suggested. It was suggested that, given the fringe benefit package, firms offering maternity leave treated as a temporary disability ought to have lower wages than firms not treating maternity leave as a temporary disability, ceteris paribus. In addition or alternatively, given wages, firms offering maternity leave treated as a temporary disability ought to have smaller non-maternity fringe benefit packages than firms not treating maternity leave as a temporary disability. Finally, the age and sex composition of employees may differ between firms treating maternity leaves as a temporary disability and other firms. These hypotheses, although specifically dealing with maternity leave treated as a temporary disability, are generally concerned with relationships between components of total compensation. Because that is the case, and because as a by-product of the examination of the hospital data all the fringe benefits offered may be discussed, it is helpful to place these hypotheses in the context of other research concerned with fringe benefits.

5.1 Previous Research Concerned With Relationships Between Components of Total Compensation

Payment of compensation as wage supplements is a phenomena of the second third of this century. Although pension plans, paid vacations, and occassionally other benefits were known in the nineteenth century, their coverage was limited generally to upper and middle management, and they were viewed as rewards for long and loyal service. In the mid-1930's, however, the concept of fringe benefits changed. This was in part the result of the economic upheaval of that period and the resulting federally legislated insurance programs, e.g. social security and unemployment compensation, which provided some economic protection against income loss. Employees began to consider fringe benefits as one means to providing economic security. This was enhanced by passage of the National Labor Relations Act of 1935 which guaranteed the right to collectively bargain, and by subsequent count interpretations of that

act which required employers to bargain over pension plans[1] and health and insurance plans.[2]

While employees began to think of wage supplements as providing protection against economic haxards, employers began to view them as a method for achieving certain goals: pay for time not worked, bonuses, provision of recreational facilities, and a vanity of other benefits were viewed as a way to increase productivity. During World War II employers provided increased wage supplement, as a method of circumventing the War Labor Board's limitations on money wage increases.[3]

The change in attitude toward fringe benefits by both employers and employees has led to a high growth in their importance. In 1929 supplements to wages and salaries, including legally required social insurance and privately financed health and welfare programs,[4] was thought to be 1.4% of total compensation. By 1969 this had grown to 9.5% of total compensation. This tremendous growth has been accompanied by increased interest in the nature of fringe benefits and their component parts. The literature and research dealing with fringe benefits can be divided generally into three strands. The first strand deals with the size of the total wage supplement component of total compensation and the various benefits which make up wage supplements. The second, a literature dealing with individual benefits, is largely technical in nature aimed at suggesting how various provisions of specific fringe benefits may be implemented or may effect the nature of the benefit. The third is analytic research designed to suggest how economic firm or labor behavior may be effected by the presence of fringe benefits. The first and third strands provide some insights into the research presented here. The second strand is of little interest for this work and will not be discussed.

There are several sources of estimates of total compensation. The National Income Accounts, Office of Business Economics, U.S. Department of Commerce, has estimated employer payments for social insurance, private pension, health and welfare plans, using aggregate national data,

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[1]Inland Steel v. NLRB, 1948.

[2]W.W. Cross & Co. v. NLRB, 1949

[3]See Donna Allen, Fringe Benefits: Wages or Social Obligation Ithaca, New York: New York State School of Industrial and Labor Relations, Cornell, University, 1969, Chapter 1, 2 and 10 and Alvin Bauman, "Measuring Employee Compensation in U.S. Industry" Monthly Labor Review, Vol. 93, Oct. 1970, pp. 17-19 for a more comprehensive historical review.

[4]Bauman, p. 19. Excludes pay roll items such as paid leave, bonuses, and overtime pay.

since 1929. The American Iron and Steel Institute has collected data on hourly employment costs for total and by component for the iron and steel industry. The United States Chamber of Commerce has conducted and published surveys of employer expenditures for time worked beyond pay since 1947. The Bureau of Labor Statistics has surveyed and published data on employer expenditures for a variety of wage supplements for several industries since 1951 and for the entire private nonfarm economy since 1966. Finally, the Social Security Administration has collected and published data on employer contributions for selected wage supplement contributions for years since 1946.

Table 5-1 shows the percent of wage and salary workers covered by various benefits and the employer and employee contributions as a percent of wages and salaries. Although the source for this table is the Social Security Administration, it is compiled using data from all the sources mentioned above. As can be seen all the fringe benefits shown have grown substantially both in coverage and as a percent of wages. It is interesting to compare the coverage figures shown in this table with the ones obtained in the employer survey for Wisconsin shown in Table 4-4. Coverage for life insurance seems slightly higher in Wisconsin. Health insurance coverage seems slightly lower in Wisconsin and for retirement plans coverage seems substantially better.[5] It should be remembered that these figures are not strictly comparable. However, the comparison does suggest that coverage in Wisconsin is similar to that in the nation as a whole.

Employer and employee contributions to employee benefit plans have increased from $3,937 million in 1950 to $34,676 million in 1970. Benefits paid under these plans increased from $1,813 million in 1950 to $25,797 million in 1970. In 1950 the major fringe benefits offered were life insurance, hospitalization insurance, temporary disability, and retirement plans. By 1970 these benefits were joined by supplemental unemployment insurance, long term disability insurance, and a major expansion of health insurance to include surgical insurance, major medical insurance, dental insurance, and a variety of special medical services including out-of-hospital drugs, physicians visits, and X-ray and laboratory examinations. The figures noted above do not include pay for time not worked which in 1970 was as much as 5.5% of compensation. Although vacation has one of the longest histories of all fringe benefits, in the last two decades it has been expanded to include personal leaves, civic leaves, and a large number of holidays. All of these benefits taken together make the wage supplement portion of employee compensation nearly 20% of compensation.[6] This is a significant amount and the relationships between dif-

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[5]Coverage in Wisconsin estimated from the employer survey: health insurance, 77.3%, life insurance, 73.9%, pension plans, 76.1%.

[6]Employee Compensation in the Private Non-farm Economy, 1968, BLS Bulletin 1722, 1971.

Table 5-1

Coverage and Contributions under Selected Employee Benefit Plans,[1] 1950-70

Year	Life Insurance and Death	Accidental Death & Dismemberment	Hospitalization	Surgical	Regular Medical	Major Medical	Temporary Disability	Long-Term Disability	Supplemental Unemployment	Retirement
	Covered employees as percent of all wage and salary workers						Covered employees as percent of wage and salary workers in private industry			
1950	38.9	16.2	48.7	35.5	16.4	--	46.2	--	--	22.5
1955	50.7	28.3	60.0	54.7	37.0	4.0	49.2	--	2.1	32.2
1960	58.2	35.5	68.9	65.5	50.2	16.5	49.0	--	3.4	42.4
1965	64.2	43.5	74.3	72.0	60.3	26.8	50.4	--	3.8	46.2
1970	69.4	52.1	80.2	79.2	71.1	35.8	50.7	11.7	4.0	48.3
	Employer and employee contributions as percent of all wages and salaries						Employer and employee contributions as percent of wages and salaries in private industry			
1950	.34	.01	.04	.21	--		.40	--		1.67
1955	.44	.02	.69	.38	.02		.49	.02		2.19
1960	.54	.03	.96	.49	.18		.53	.05		2.47
1965	.64	.03	1.25	.61	.31		.54	.04		2.89
1970	.67	.04	1.45	.77	.44		.69	.03		3.28

Source: Walter W. Kolodrubetz, "Two Decades of Employee Benefit Plans, 1950-70; A Review," Social Security Bulletin 35:4, April 1972 p. 17.

[1]Excludes employer and employee contributions for social security, unemployment compensation and workman's compensation, as well as vacation, personal leaves, and other pay for time not worked.

Table 5-2

Contributions and Benefits, 1950 and 1970, Total and Selected Benefits

(in millions of dollars)

Type of Benefit	1950 Contributions	1950 Benefits	1970 Contributions	1970 Benefits
Total	$3937	$1813	$34676	$25797
Life Insurances Death Benefits	480	310	3224	2435
Total Health	856	709	13878	13323
Temporary Disability	502	408	2923	2403
Retirement	2080	307	1400	7360

Source: Social Security Bulletin 35:4, April 1972.

ferent fringe benefits and between all fringe benefits and wages may carry important implications. That elements of compensation may be interchangeable was explicitly recognized by the Bureau of Labor Statistics in 1964 when they began reporting wage supplements as a proportion of gross payroll.[7] There is, however, surprisingly little economic research dealing with these relationships.

Walter Oi[8] noted that total labor cost contains both a variable wage component and a fixed cost component incurred by the firm when it hires a specific stock of labor. Oi divided these fixed costs into training costs and hiring costs. Hiring costs include costs incurred for recruiting, processing payroll records, and for providing wage supplements. The periodic vent, which represents the amortization of these fixed costs, drives a wedge between marginal value product and wage. It forms a buffer absorbing short run variations in marginal value product causing firms to shift factor demands differentially, depending on relative fixity. Oi does not specify what sort of wage supplements he has in mind to be included in the fixed cost component except to say that they must not affect productivity. In his empirical work, he includes only unemployment compensation contributions. Other non-hour related supplements may enter as fixed costs however, including most insurance contributions. The importance of this model is that it suggests a range of indeterminancy in wages and a sluggish factor demand response to marginal falue product changes when fixed labor costs are large relative to total labor cost. This suggests that the wage effect hypothesized in Chapter Two, may not be strong in the short run when the cost of providing a non-hour-related fringe benefit is increased. Oi's work has formed the basis for further research into the employment-hours decision[9] but implications for fringe benefit mix determination or size of the fringe benefit package have not been examined in this context.

Robert Rice[10] has suggested that there are four reasons wage supplements should be expected to increase as a proportion of total compensation. The progressive income tax structure has created special markets for insurance and annuity benefits such that above some compensation level effective prices vary negatively with money income. This

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[7]Employee Compensation and Payroll Hours, 1968, BLS Reports 335-1 to 335-11.

[8]Walter Oi, "Labor as a Quasi-Fixed Factor", Journal of Political Economy, 70: December 1972, pp. 538-555.

[9]See, for example, Sherwin Rosen, "Short-Run Employment Variations on Class I Railroads in the U.S. 1947-63, Economica 37, December 1963 and Ronal Ehrenberg, Fringe Benefits and Overtime Behavior, Lexington, Mass.: D. C. Heath and Company, 1971.

[10]Rice, Robert "Skill, Earnings, and the Growth of Wage Supplements."

results in earnings elasticities which exceed income elasticities of demand for these benefits. Income growth, then, leads to an increase overtime in expenditures for these insurance benefits. Special markets have also been created for these insurance benefits through the ability of firms to group purchase them. Rice points out that differences between group and individual prices does not explain why the benefits would take the form of wage supplements rather than payroll deductions. He does suggest that this effect together with the preferential tax treatment may be reflected in combination in increased employer contributions. A third factor leading to increases in wage supplements, suggested by Rice, is the incentive for reduced turnover provided by fringe benefits. If fringe benefits in general, and specific fringe benefits in particular, are more effective in reducing turnover than wages, we would expect fringe benefits, and particular fringe benefits, to be higher where turnover costs are higher. Chapter Two discusses this point in more detail. Finally, Rice suggests that unions have exerted pressure for increased fringe benefits.

Rice examined these four possible effects in cross section using 1959 data for nineteen manufacturing industries. Simple correlations showed positive variations between wage supplements and earnings rate, firm size. and unionization, and negative correlations between wage supplements and the turnover rate. In regressions of each of four wage supplement measures, pension and retirement plans, health, accident and life insurance, pension and insurance expenditures, and all wage supplements vary positively with money earnings independently of other factors. variations in wage supplement expenditure variations can be explained largely in terms of variations in money earnings, and the relationship between wage supplements and earnings supports the preferential tax treatment hypothesis. The importance of these results for the research done here will be pointed out at a later point.

William Bailey and Albert Schwenk[11] have examined the relationship between employer expenditures for retirement or insurance ratios and employer expenditures for labor services and various firm characteristics using 1968 cross-section data for eight industries. Unlike Rice they postulate no causal relationships, but rather are looking only for descriptive relationships. In regressions of the ratio of employer retirement expenditures on employer insurance expenditures to employer expenditures for total compensation on establishment size, union status, earnings, and region they found that both ratios varied positively with earnings, unionization, and establishment size. Similar regressions using the incidence of insurance or retirement plans instead of the expenditure ratios tended to show that the existence of the plan was more closely related than expenditure levels to the independent variables. This lends some legitimacy to the binary variables to be used for the fringe benefit offerings discussed below.

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[11]William R. Bailey and Albert E. Schwenk, "Employer Expenditures for Private Retirement and Insurance Plans."

The literature discussed above together with the discussion contained in Chapter Two suggest that there are relationships between wages and fringe benefits and between various fringe benefits. In the absence of any well-developed theory of these relationships we will examine the hospital data in a descriptive way for the wage and substitution effects discussed in detail in Chapter Two. This is done with the recognition that no causal relationships are implied.

5.2 A Review of the Hospital Data

As noted earlier the hospital data is divided into two data sets on the basis of whether the hospital response was to the mailed survey or the telephoned survey. The primary data set contains 84 hospitals and includes data on base starting monthly wages, maximum monthly wages, and average monthly wages for eighteen occupation categories, and data on female employment by age, occupation, and number of hours worked for six different occupation categories, five different age categories, and full or part time employment. The secondary data set contains 79 hospitals with data on average hourly wages for three occupation categories, and data on average hourly wages for three occupation categories, and data on female employment by age and occupation for three age categories and five occupation categories. Where possible the analysis discussed in this chapter is done for both data set separately although the majority of the discussion deals with analysis of the primary data set. Differences in the results of the analysis for the two sets are noted.

Although wages for eighteen occupation categories were collected for the primary data set not all 84 hospitals provided all eighteen wages. Small hospitals often do not have personnel in some of the eighteen categories and some hospitals simply did not respond to some of the wage questions. The analyses discussed below use only six of the occupation categories where responses were most complete and where most employees are found. These are degree nurse (four years of college resulting in a bachelor's degree), diploma nurse (two years of nursing training), Licensed Practical Nurse (LPN, nine months to one year of nursing training), clerk-typist, and maid.

The data for fringe benefit variables allow formation of descriptive parameters of fringe benefit offerings, often binary variables, rather than actual premium costs. The cost of two of the fringe benefits, vacation, and number of days of sick leave, is the product of the daily wage and the number of days allowed or expected to be taken for these benefits. For these variables data allows insertion of the appropriate labor cost values into the multiple regressions used in the analyses. For the other fringe benefit variables, i.e., hospitalization, surgical, and major medical insurances, life insurance, long term dis-

Table 5-3

Coefficient of Variation of Wages by Occupation in Hospitals, Responses for Primary Data Set

Occupation	Coefficient of Variation
Nurse, degree	
Base	.076
Max.	.072
Ave.	.076
Nurse, diploma	
Base	.079
Max.	.087
Ave.	.070
Nurse, LPN	
Base	.110
Max.	.098
Ave.	.088
Nursing Asst.	
Base	.159
Max.	.124
Ave.	.156
Clerk-Typist	
Base	.148
Max.	.134
Ave.	.132
Maid	
Base	.136
Max.	.125
Ave.	.139

ability insurance, and retirement plans, the theoretically appropriate variables would be premium payments or employer contributions. However, the data does not allow use of these variables. Instead these fringe benefits are represented by binary variables taking on the value 1 if the fringe benefit is offered by the hospital, 0 otherwise. The use of these binary variables taking on the value 1 if the fringe benefits rather than benefit levels as indicated by expenditures.[12]

There is considerably more variation in the wage variables than in the fringe benefit variables. Table 5-4 shows the number of hospitals reporting various fringe benefits. For vacation and number of days of sick leave it is possible to calculate the cost of the benefit as a percent of wages. For vacation the cost ranges from 2% of wages for hospitals offering one week of vacation to 8% of wages for hospitals offering four weeks of vacation. The cost of sick leave, assuming all sick days are taken, ranges from 0 for hospitals with no compensated sick leave plan to 22% for the hospital allowing 45 days. The range of the cost of sick leave is something less than this, however, since not all employees are expected to take all compensated sick days. Thirteen hospitals indicated the percent of wages contributed by the hospital to retirement plans. These reports ranged from 1.5% of wages to 6% of wages with the mean at 3% of wages. Although the cost of the other benefits cannot be calculated, it may not be unrealistic, and it would be consistent with other estimates of the size of wage supplements, to suggest that the cost of fringe benefit offerings for hospitals range from around 10% of wages to as much as 20% of wages.

5.3 Examination of the Hospital Data for Employee Age Distribution Differences

We turn first to the third hypothesis suggested in Chapter Two, that there may be differences in the age distribution of female employees between hospitals offering maternity leave treated as a temporary disability and those not offering maternity leave treated as a temporary disability. Young females may prefer to supply labor to hospitals offering maternity leave treated as a temporary disability, tending to result in a younger labor force employed by these hospitals. At the same time hospitals who offer maternity leave treated as a temporary disability may attempt to minimize the cost of providing this fringe benefit by adjusting its labor force to include a lower proportion of female employees subject to pregnancy. A priori it is not possible to determine which of these forces predominate.

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[12]It will be recalled that Bailey and Schwenk found relationships between the incidence of benefits and wages to be stronger than those between expenditures on benefits and wages.

Table 5-4

Vacation and Sick Leave Offered by Hospitals, Responses for Hospitals in the Primary Data Set

	No Response	Range of Responses	Median	Mean	Cost of % of Wages for Mean Value
Weeks of Vacation	9	1-4 wk.	2 wk.	2 wk.	4%
Days of Sick Leave Per Yr.	11	0-45 da.	12 da.	12.17 da.	4.9%*

*Assuming all days are taken

Table 5-4A

Other Fringe Benefits Offered by Hospitals, Responses for Hospitals in the Primary Data Set

	No Response	Hospitals Offering Benefit		Hospitals Not Offering Benefit	
		No.	%	No.	%
Life Ins.	1	56	67%	27	33%
Health Ins.					
Hospitalization	0	81	96%	3	4%
Surgical	0	81	96%	3	4%
Maj. Medical	0	66	79%	18	21%
Pension	0	55	77%	19	23%
Long-term Disability	1	46	55%	37	45%

To examine the hospital data for the effect of these two forces on the age distribution of female employees a variable defined as the nursing personnel ages 17 to 39 as a proportion of all nursing personnel has been created. Since this age range captures the main childbearing years, the influence of maternity leave treated as a temporary disability ought to be observed on this proportion. The mean value of this proportion across hospitals in the primary data set is .604 and it ranges from .800 to .250. This distribution variable was regressed against the fringe benefit variables, including number of weeks of vacation, number of days of sick leave, and the binary variables representing the presence or absence of long term disability, hospitalization insurance, major medical insurance, pension, and maternity leave, and a wage variable. This regression estimates the relationships between the distribution variable and each of the components of total compensation. Because it is not possible to determine which of the forces noted above predominates the estimated coefficient on the maternity leave variable when nurses ages 17 to 39 as a proportion of all nurses is regressed against the fringe benefit variables may be of either sign, or may be insignificant. If it is positive it is an indication that the labor supply effect predominates. If it is negative it suggests the labor demand effect predominates. If it is not significantly different from zero the two effects may be offsetting.

Table 5-5 shows the estimated regression coefficients when the age variable is regressed on the fringe benefit variables, and when either degree nurse, average wage or diploma nurse, average wage is added to the equation. As can be seen from the table the maternity leave variable is significant and negative in two of the three cases. This suggests that the hospital labor demand effect tends to outweigh the labor supply effect. The size of the estimated coefficient suggests that when maternity leave is treated as a temporary disability the proportion of nursing personnel ages 17 to 39 is .063 smaller than when maternity leave is not treated as a temporary disability. Since the mean number of nursing personnel across these hospitals is 188, a hospital with the mean number of nursing personnel and offering maternity leave as a temporary disability is expected to have twelve fewer female nursing personnel between ages 17 and 39. This implies that such a hospital may expect up to one birth less per year than a hospital not offering maternity leave treated as a temporary disability. This result may not be too surprising. Hospital administrators have indicated that they are quite aware that maternity leave treated as a temporary disability increases the cost of temporary disability plans and the increase in cost is a function of the age of their female employees. The Wisconsin Hospital Association is among the opponents to the maternity leave guideline.

The estimated coefficients on the other fringe benefit variables bear some discussion. Although we had no a priori expectations for any of these coefficients, the supply and demand effects postulated for the case of maternity leave would be present for other fringe benefits as well, particularly when collection of the benefits may be affected by

Table 5-5

Estimated Regression Coefficients, Examining Hospital Coefficients for Age Differences

Dependent Variable	Constant	Vacation	Long Term Disability	Sick Days	Pension	Hospitalization	Major Medical	Maternity Leave	Wage Variables: Degree Nurse, Average Wage	Wage Variables: Diploma Nurse, Average Wage	R^2	F-Statistic
Nurses Age 17-39 as Proportion of All Nurses	* .260 (1.94	.009 (.53)	.055 (1.63)	-.001 (-.56)	.044 (.99)	* .247 (1.93)	** .100 (2.37)	* -.063 (-1.86)	—	—	.32	3.5[9]
	.496 (1.56)	.004 (.07)	.066 (1.46)	-.0003 (-.28)	* -.116 (-1.67	—	.045 (.73)	-.058 (-1.38)	.0003 (.69)	—	.28	1.64
	-.113 (-.38)	.020 (.34)	.032 (.72)	.0002 (.16)	-.025 (-.43)	* .251 (1.89)	.037 (.57)	** -.096 (-2.40)	—	.001 (1.49)	.38	2.5[9]

Numbers in parenthesis are t-statistics
*Significant at 10% level
**Significant at 5% level

the age of the employee. The age distribution variable used in the regressions was defined specifically to be appropriate for the effect of maternity leave. However, it does provide a gross measure for other effects. Hospitalization and major medical insurances carry positive coefficients. Younger employees may be less likely to use both of these insurances. Employers would then prefer to hire young employees when offering these insurances while older employees would prefer to work where these insurances are offered. The positive coefficients on these variables indicate that hospitals offering hospitalization and major medical insurance have a higher proportion of nursing personnel ages 17 to 39, again suggesting that the demand effect dominates.

Pension, the other variable in these regressions which has a coefficient significantly different from zero, has a negative coefficient. This suggests that hospitals offering a pension plan have a lower proportion of nursing personnel ages 17 to 39. Hospitals offering pension plans may prefer to hire young employees who may have a lower probability of continuing employment long enough to collect pension benefits while older employees who may have a higher probability of collecting pensions benefits may prefer to work for hospitals having pension plans. If the supply and demand effect alone is at work, the negative coefficient with the pension variable suggests that the supply effect dominates. These effects, however, may be moderated by the presence of vesting provisions in pension plans which would mitigate the age-related difference in the probability of collecting pension benefits. In addition pension plans may carry provisions which require some length of employment before collection of benefits is possible. To the extent that such provisions are found in pension plans in hospitals, hospitals may prefer to hire workers who are old enough to preclude their eligibility for pension benefits. Finally, pension plans are thought of as a means of reducing turnover. The negative coefficient estimated with the pension variable may indicate that they have been successful in reducing turnover, if the age distribution variable is associated with job tenure. Although it is not possible to investigate this relationship further with the hospital data available here, the relationship is suggestive.

None of the other fringe benefit variables have estimated coefficients which are significantly different from zero. This does not necessarily imply that supply and demand effects are not operating with respect to these variables. It may indicate that the effects are offsetting. Both the number of sick days and the presence of long term disability insurance may be benefits where the probability of collection increases with age. To the extent that supply and demand effects are operating, however, they appear to be offsetting.

The discussion presented here is based on regressions using the primary data set. A similar examination of the secondary data set was not possible due to the limited age distribution available for it.

5.4 Examination of the Hospital Data for a Substitution Effect

We turn now to an examination of the hospital data for the substitution effect discussed in Chapter Two. There it was hypothesized that an additional cost in a fringe benefit, specifically in the temporary disability policy resulting from treating maternity leave as a temporary disability, may result in a decrease in other fringe benefits. The examination of the data reported here is descriptive in nature, designed to suggest some of the relationships existing between the fringe benefit offerings. As noted earlier, the preferred data is data on the cost of provision of benefits. In the absence of cost data, however, it is at least possible to identify relationships with respect to the gross provision of fringe benefits.

We begin this discussion with an examination of the simple correlation coefficients. Table 5-6 shows these coefficients. Making use of the fact that a variable Z defined as

$$Z = 1/2 \log_e \frac{1+r}{1-r}$$

where r = calculated correlation coefficient is distributed approximately normally with mean and standard deviation:

$$u_Z = 1/2 \log_e \frac{1+p}{p}$$

$$\sigma = \frac{1}{\sqrt{n-3}}$$

where p = true correlation coefficient
n = number of observation

It is possible to construct a test under the null hypothesis that the true correlation coefficients, p, is equal to zero opposed to the alternate hypothesis that it is not equal to zero.[13] This was done for each calculated correlation coefficient and the results are indicated in Table 5-6. It is possible to reject the null hypothesis only for the correlation coefficients between pension and sick days, pension and hospitalization, pension and long-term disability insurance, hospitalization and life insurances, surgical insurance and life insurance, and long term disability and life insurance; except for pension and sick days these calculated correlation coefficients are all positive. Although it is a substitution effect we have postulated here, these results indicate that some of the fringe benefits may be complements. Only pension and sick leave appear to be substitutes.

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[13] Paul Hoel, Introduction to Mathematical Statistics, New York: John Wiley and Sons, 1962, p. 166.

Table 5-6

Simple Correlation Coefficients Between Fringe Benefit Variables

	Vacation	Sick Days	Hosp.	Surg.	Maj. Med.	L-T Disabil.	Life	Pension	Maternity Leave
Vacation	1.0000	-.0318	.0179	.0179	.1621	-.0742	.1666	.1627	-.0540
Sick Days		1.0000	.0373	.0373	-.0178	.1623	-.0896	-.2729	-.0897
Hosp.			1.0000	1.0000	-.0653	.1512	.2236	.2588	-.1890
Surg.				1.0000	-.0653	.1512	.2236	.2588	-.1890
Maj. Med.					1.0000	.1949	.1116	-.0344	.1572
L-T Disability						1.0000	.2747	.2373	-.1250
Life							1.0000	.1800	-.1690
Pension								1.0000	.0000
Maternity Leave									1.0000

Fringe benefits may be related to each other in ways which are not captured in these simple correlation coefficients. This could occur if groups of fringe benefits tend to be substituted for other groups of fringe benefits. To examine this more directly each of the fringe benefits were regressed on all of the others. Table 5-7 shows the results of these regressions. For maternity leave, the fringe benefit of interest, no fringe benefit carries an estimated coefficient significantly different from zero, suggesting that maternity leave treated as a temporary disability is not offset by any other benefit and no other benefit is offset by maternity leave. Of the other fringe benefits vacation and life insurance also seem not to be related to provision of other fringe benefits.

The number of sick days is negatively related to pension and hospitalization and long-term disability insurances are positively related to pension plan. These relationships are the same direction as those indicated by the simple correlation coefficients. The hospitalization insurance-pension plan relationship appears to be the strongest of the three, indicating a strong tendency for these two benefits to be offered together. The size of the other two coefficients indicates a less strong relationship. In addition to being positively related to retirement benefits, long term disability insurance is positively related to provision of major medical insurance. Again, this relationship is similar to that noted by the simple correlation coefficient. These results suggest that in general fringe benefits do not substitute for one another nor do they have a complementary relationship. It does appear, however, that retirement benefits, hospitalization insurance, and long term disability insurance tend to be offered as a package. Long term disability insurance tends to be offered as a package with major medical insurance.

The relationships seen in these regressions confirms the complementary relationships indicated by the simple correlation coefficients. These complementary relationships may be the consequence of providing different fringe benefits to insure against different phases of the same economic hazard. This may be the case with the complementary relationship between major medical insurance and long-term disability insurance. The major medical insurance provides protection against medical problems generally of a severe and serious nature sufficient to cause extensive medical expense. Long-term disability insurance provides income protection in the event of illness or injury which requires an extensive absence from work. These two insurances taken together provide relatively complete protection in the case of serious and debilitating illness or injury. The provision of other fringe benefits may be viewed as a social obligation. Donna Allen has suggested that the growth in health and pension plans has been partly the result of a growing belief that the employer incurs a social obligation for the welfare of his employees.[14] To the extent such a belief exists substitution possi-

[14]Allen, p.26.

Table 5-7

Estimated Coefficients From a Multiple Regression in which Fringe Benefit Variables are Regressed Against All Others

Dependent Variable / Independent Variable	Vacation	Sick Days	Maternity Leave	Life Insurance	Hospitalization	Major Medical	Long Term Disability	Pension	Constant	
Vacation	___	.004	-.145	.303	-.328	.447	-.329	.470	1.649	R^2 = .1018
		(.6657)	(.5747)	(.2859)	(.7358)	(.1525)	(.1925)	(.1506)	(.0930)	Sign of F = .5210
Sick Days	.863	___	-1.565	-3.798	10.750	-2.333	6.719	-12.06	14.17	R^2 = .1567
	(.6657)		(.6753)	(.6385)	(.5457)	(.6202)	(.0643)	(.0101)*	(.6673)	Sign of F = .2005
Maternity Leave	-.041	-.002	___	-.209	-.516	.228	-.051	.097	.879	R^2 = .1047
	(.5747)	(.6753)		(.1628)	(.3202)	(.1718)	(.7093)	(.5908)	(.0933)*	Sign of F = .5003
Life Ins.	.068	-.004	-.165	___	.533	.100	.173	.043	-.023	R^2 = .1678
	(.2859)	(.6385)	(.1628)		(.2455)	(.5136)	(.1487)	(.7812)	(.9609)	Sign of F = .1591
Hosp. Ins.	-.006	.001	-.035	.046	___	-.017	.008	.083*	.902*	R^2 = .1370
	(.7358)	(.5457)	(.3202)	(.2455)		(.7097)	(.8133)	(.0639)	(.0001)	Sign of F = .2931
Maj. Med.	.081	-.002	.145	.080	-.155	___	.184*	-.116	.716*	R^2 = .121
	(.1525)	(.6202)	(.1718)	(.5136)	(.7097)		(.0836)	(.5825)	(.0865)	Sign of F = .3900
L-T Disabil.	-.092	.009	-.050	.214	.118	.284	___	.363	-.155	R^2 = .2031
	(.1975)	(.0643)*	(.7093)	(.1487)	(.8133)	(.0836)*		(.0333)*	(.7671	Sign of F = .0708*
Pension	.078	-.009*	.056	.032	.715*	-.106	.215*	___	.007	R^2 = .2491
	(.1506)	(.0101)	(.5908)	(.7812)	(.0639)	(.5825)	(.0333)		(.9844)	Sign of F = .0211*

N=63

Values in parentheses are significance of t-statistics

bilities between these fringe benefits are limited, and the positive correlation is spurious.

In addition to these regressions which simply estimate the relationships among fringe benefit offerings with no controls for outside influences, a series of regressions using each of the fringe benefit variables as the dependent variable and the other fringe benefits, wages, and the control variables discussed earlier as independent variables. The results of these regressions are identical to the results of the fringe benefit regressions discussed above. Provision of retirement benefits appear to be complementary to provision hospitalization insurance and long-term disability insurance and substitutes for the number of sick days. Provision of long-term disability insurance tends to be offered as a package with major medical insurance as well. Other fringe benefits appear to be unrelated to each other.

These regressions were duplicated with the secondary data set. Results are shown in Appendix D. They do not differ from results of regressions using the primary data set.

5.5 Examination of the Hospital Data for a Wage Effect

We turn finally to an examination of the hospital data for a wage effect. The hypothesis is that, given fringe benefit offerings, hospitals offering maternity leave treated as a temporary disability ought to offer lower wages than hospitals not treating maternity leave as a temporary disability. Earlier the annual cost of maternity leave per employed female for hospitals having a compensated temporary disability plan not treating maternity leave as a temporary disability was calculated at between $17 and $67 for an eight week average absence from work due to childbearing, and depending on the assumption about the length of compensated absence available. If the full cost is offset in wages, then the average difference in monthly wages between hospitals treating maternity leave as a temporary disability and hospitals not treating maternity leave as a temporary disability ought to be between $1.42 and $2.08.

Multiple regression analysis is used to examine the hospital data for a wage effect. The hypothesized relationship is:

$$w = \beta_0 + \beta F + \gamma C + \Sigma$$

where:

w = wage variable

F = vector of fringe benefit variables

C = vector of control variables

As in the previous sections there is no causal relationships implied by this specificaiton. It simply estimates descriptive relationships. Life insurance, surgical insurance, major medical insurance, long-term disability, and retirement plan enter as binary variables taking on the value 1 if the benefit is offered and the value 0 if the benefit is not offered. Because in the primary data set hospitalization insurance is perfectly correlated with surgical insurance it is not entered in the equation. The vacation variable enters as the number of weeks offered after one year of service. Employees exempt from overtime payments, including all nurses and clerk-typists, often receive more vacation than employees eligible for overtime payments, including nursing assistants and maids. The appropriate number of weeks of vacation is defined as the number of days of paid sick leave granted per year. The maternity leave variable, the variable of interest, enters as a binary variable taking on the value 1 if maternity leave is treated as a temporary disability and the value 0 if it is not treated as a temporary disability.

There are four control variables used. The natural population of the city in which the hospital is located is used to control four conditions such as transportation costs, disamenities (or amenities) of large cities, and cost of living differences. The median housing rent is used to control differences arising from cost of living differences. A union variable entering as a binary variable taking on the value 1 if a union is present in the hospital and the value 0 if a union is not present in the hospital is used to control for the possible effect of unions on wages. Finally, a variable defined as the proportion of full time nursing personnel who are between the ages of 17 and 39, the main childbearing years, is used. This variable is entered by itself and interacted with the maternity leave. Entered by itself this age distribution variable should control for wage differences resulting from productivity differences which vary with age in hospitals. In the discussion of the firm reaction to maternity leave in Chapter Two it was suggested that firms with a low proportion of female employees subject to the risk of pregnancy can offer maternity leave treated as a temporary disability while experiencing a very small increase in the cost of the temporary disability policy. The interaction between maternity leave and the age distribution variable is an attempt to capture this effect.

If the cost of maternity leave is reflected in wages the sign on the coefficient estimated with the maternity leave variable ought to be negative. Because the cost of maternity leave increases as the proportion of females of childbearing age increases the interaction term for maternity leave and the age distribution variable ought to have an estimated coefficient that has a negative sign. However, since the nomthly cost of maternity leave is small the estimated coefficients should be small.

These are the variables of interest for an examination of hospital wage relationships to maternity leave, but it is also possible and of interest to examine signs of the other fringe benefit variables. If the cost of the other fringe benefits is reflected in wages the signs on the estimated coefficients on all the fringe benefit variables ought to be negative. To be consistent with the Rice conclusions, however, we might

expect a positive relationship between wages and fringe benefits which are subject to preferential tax treatment, i.e., health, life and long-term disability insurances, and pension or retirement plans. The turnover effect noted by Rice is not explicitly controlled for here. However, to the extent that turnover is related to skill level[15] we implicitly control for skill level by estimating the regression equations separately for each occupation.

Regression equations were estimated separately for each of the six occupations using the base, maximum, and average monthly wages as the dependent variables. All the estimated equations are reported in Appendix D. Here the discussion of the results will be limited to two of the estimated regression equations, one using degree nurses average monthly wages as the dependent variable and one using diploma nurses average monthly wages as the dependent variable. The results using these two variables as the dependent variable are typical of all the regression results.

Table 5-8 shows the estimated coefficients and statistics for these equations. As can be seen from the table none of the fringe benefit variables have estimated coefficients significantly different from zero except the binary maternity leave variable and the maternity leave-age distribution interaction variable. The sign on the estimated coefficient with the binary maternity leave variable is negative which implies that in the presence of maternity leave the wage is lower. This is in accordance with expectations. However, the sign on the estimated coefficient with the maternity leave-age interaction term is positive. The estimated coefficient with the maternity leave-age distribution interaction variable and the estimated coefficient for the age variable should be summed to obtain the age distribution coefficient in the presence of maternity leave treated as a temporary disability while the age distribution coefficient alone is appropriate in the absence of maternity leave treated as a temporary disability. The estimate of the age distribution coefficient alone is negative but the estimate of the maternity leave-age interaction coefficient is sufficiently positive to make the age coefficient positive in the presence of maternity leave. This suggests that although wages decline as the proportion of young female employees increases when maternity leave is not treated as a temporary disability. This relationship is the reverse of that expected.

The size of the coefficients on the maternity leave variable and the maternity leave-age distribution interaction variable imply that when maternity leave is treated as a temporary disability, a hospital with the proportion of nurses ages 17 to 39 equal to the mean proportion pays an average of $16.01 per month more to degree nurses and $5.04 per month to diploma nurses. Although these are not large differences, they are opposite of the expected relationship.

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[15] See Jacob Mincer, "On the Job Training: Costs, Returns and Implication," Journal of Political Economy, Oct. 1962, Supp.

Table 5-8

Estimated Regression Coefficients and Statistics, Wage Effect, for Primary Hospital Data Set

INDEPENDENT VARIABLES

Dependent Variable	Intercept	Fringe Benefit Variables: Vacation	Long-term Disability	Pension	Surgical	Major Medical	Life	Sick Days	Maternity Leave	Maternity Age, Inter.	Control Variables: Age	Pop	Median Rent	Union	N	R^2	F-Value
Degree Nurse Ave. Wage	$654.97**	-24.77	-15.13	-5.25	--	14.45	14.97	.51	-127.36*	238.95*	-154.59*	12.90*	.87*	-3.62	98	.56	4.05
t-values	12.81	-1.29	-1.03	-.23	--	.71	.97	1.13	-1.99	2.49	-2.65	2.67	2.00	-.24			
Diploma Nurse Ave. Wage	615.33**	-28.17	-15.05	5.99	34.97	12.14	11.97	.67	-139.94**	225.11**	-182.33**	11.69**	1.20**	-6.33	42	.68	4.65
t-values	9.53	-1.53	-1.16	.35	.76	.65	.84	1.58	-2.58	2.89	-3.25	2.74	2.35	-.49			

* Significant at 5% level
** Significant at 1% level

Because the results with respect to the maternity leave-age distribution action variable are contrary to expectations further examination of the relationship between wages and maternity leave and age of employees seems warranted. The values for the age distribution and maternity leave variables can be thought of as defining four categories of hospitals: 1) hospitals treating maternity leave as a temporary disability and with the proportion of nurses ages 17-39 less than the mean proportion of nurses ages 17-39 for all hospitals; 2) hospitals treating maternity leave as a temporary disability and with the proportion of nurses ages 17-39 greater than the mean proportion: 3) hospitals not treating maternity leave as a temporary disability and with the proportion of nurses ages 17-39 less than the mean proportion; 4) hospitals not treating maternity leave as a temporary disability and with the proportion of nurses ages 17-39 greater than the mean proportion. An alternative specification which is simply the formation of three binary variables, one for each age category in the presence of maternity leave and one for hospitals not treating maternity leave as a temporary disability and with the proportion of nurses ages 17-39 greater than the mean proportion. Coefficients estimated with these binary variables are deviations from the estimated constant term, which represents the fourth category estimated on this data. This specification allows separate estimation of mean wage relationships for each of the four categories. In this specification we expect wages to be higher among hospitals not treating maternity leave as a temporary disability. Among hospitals who do offer maternity leave as a temporary disability we expect wages to be higher when the proportion of nurses ages 17 to 39 is less than the mean.

Table 5-9 shows the estimated coefficients for this specification using degree nurse, average wage, and diploma nurse, average wage. For comparison purposes the original specification estimates are shown as well. As can be seen the only estimated coefficient that is significant, i.e., a significant deviation from the estimated constant, is the one estimated for the binary variable representing the case when maternity leave is not treated as a temporary disability for hospitals have a proportion of nurses ages 17 to 39 greater than the mean proportion. The relative magnitudes of the effects are not as expected. Wages appear to be highest in hospitals having a relatively young labor force and also offering maternity leave treated as a temporary disability and lowest among hospitals having a relatively young labor force but not offering maternity leave treated as a temporary disability. This is the reverse of expected relationships.

Several possible explanations can be offered here for this anomolous result. The wage differentials between hospitals may be in the process of narrowing but equilibrium has not yet been achieved. This explanation requires time series data to be thoroughly examined. It is possible that the observed relationship is the result of productivity differences between young nurses and older nurses. Young nurses may have higher productivity, thus commanding higher wages and fringe benefits, including maternity leave treated as a temporary disability. To accept this explanation it is neces-

Table 5-9

Estimated Alternative Wage Relationships

	Constant	Proportion of Nurses 17-39	A-Maternity Interaction	Maternity Leave	$P < \bar{P}$; No Maternity Leave[1]	$P > \bar{P}$; No Maternity Leave[2]	$P < \bar{P}$ Maternity Leave[3]	$P > \bar{P}$ Maternity Leave[4]
Degree Nurse, Average Wage								
Original Specification Four Intercepts	654.97	-154.59*	238.95*	-127.36*	624.39	-33.48**	10.23	-8.54
Diploma Nurse, Average Wage								
Original Specification Four Intercepts	615.33	-182.33**	225.11**	-182.33	549.29	-52.38*	-17.49	-20.77

*Significant at 10% level
**Significant at 5% level
Significance levels are for deviations

[1]Estimated Constant

[2]For degree nurses = 580.91, for diploma nurses = 496.91

[3]For degree nurses = 615.85, for diploma nurses = 528.52

[4]For degree nurses = 634.62, for diploma nurses = 531.80

sary to assume that the greater productivity normally thought to be the result of experience and therefore more likely to be present in older nurses is more than offset by improved training and therefore higher productivity of young nurses.

One final possible explanation is that high wages, offering maternity leave treated as a temporary disability, and a young labor force could all be indications of an expanding labor force. If this is the case some indication of expansion may be given by employment growth rates in hospitals. We would expect hospitals offering maternity leave and having a relatively young labor force to have the highest employment growth rate over the five year period 1968-1972. Table 5-10 shows the rate of growth in employment in hospitals falling into each of the four cases noted above. As can be seen, the lowest growth rate is seen among hospitals offering maternity leave treated as a temporary disability and having a relatively young labor force. This suggests that if the expansion effect is working, it is not seen in the employment growth rates.

In fact, all of the explanations offered here may be working together. The available data do not allow further investigation of this relationship. It remains a puzzle.

In this section the discussion has dealt exclusively with the relationships between maternity leave treated as a temporary disability. The regressions also estimated the relationships between other fringe benefits and wages. None of the other fringe benefits have significant estimated coefficients. This is surprising since maternity leave is not the most costly of the fringe benefits. Rice and Bailey and Schwenk found significant positive relationships between wages and fringe benefits. These results are immediately suspect because of the possibility of multicollinearity between the fringe benefit variables. If multicollinearity exists the significance levels of the fringe benefit coefficients would be low but taken as a whole the fringe benefit variables would be significant.

The discussion of the relationships between fringe benefits presented earlier indicates that most of the fringe benefits are not related to each other. In these wage regressions it is possible to examine this possibility by constructing a statistic:

$$m = \left\{\frac{SSR_u - SSR_c}{SSE_u}\right\} \left\{\frac{n - U}{U - c}\right\}$$

where SSR_u is the sum of the squared residuals in the original regression, which includes all the fringe benefit variables; SSR_c is the sum of the squared residuals in a regression which excludes all the fringe benefit variables; SSE_u is the total sum of squares in the original regression; n is the number of observations; U is the number of fringe benefits in the original regression; and C is the number of fringe bene-

Table 5-10

Rate of Employment Growth in Hospitals, 1968-1973

Type of Hospital		Employment Growth, 1968-1973
Absence of Maternity Leave	Proportion of Nurses 17-39 Less Than Mean	20.76%
	Proportion of Nurses 17-39 Greater Than Mean	29.43%
Presence of Maternity Leave	Proportion of Nurses 17-39 Less Than Mean	25.82%
	Proportion of Nurses 17-39 Greater Than Mean	14.23%

fits excluded in the constrained regression. This statistic is distributed $F_{u-c,\ n-u}$.[16] Using this statistic, under the null hypothesis that the coefficients on the fringe benefits are jointly equal to zero and the alternative hypothesis that they are not jointly equal to zero, it is not possible to reject the null hypothesis at the 20% level. Table 5-11 shows this test for the two regressions with degree nurse, average wage, and diploma nurse, average wage. A similar test was conducted also excluding union variable with similar results.

Data in the secondary data set is less detailed for age distributions and wages. This lack of detail requires that the regressions be specified slightly differently and precludes the examination of the age-maternity leave relationship to wages. The fringe benefit variables used in regressions on this data are specified as before. The control variables are specified as before except that the age variable is not used. A new control variable is specified as the number of beds per nurse. No interaction term between age and maternity leave is used. There are two different wage rates used as dependent variables. They are average hourly wage for nursing personnel, and average hourly wage for clerical personnel. None of the estimated coefficients for the fringe benefit variables are statistically different from zero. Both the median rent variable and the beds per nurses variable have positive coefficients which are significant. F-tests similar to those described above were performed. The F-statistics do not allow rejection of the hypothesis that the excluded fringe benefits have zero coefficients. The regression results and F-statistics for this data set are shown in Appendix D.

5.6 Summary of Results of the Examination of Hospital Data

Three hypotheses about relationships between maternity leave treated as a temporary disability, other fringe benefits, and wages have been examined in this chapter using hospital data. It was suggested in Chapter Two that the age distribution of female employees in hospitals offering maternity leave treated as a temporary disability may differ from that in hospitals not offering maternity leave treated as a temporary disability. The way the age distributions differ depends on whether the labor supply effect or the labor demand effect predominate. The analysis of the hospital data suggests that when maternity leave is treated as a temporary disability the proportion of nurses who are ages 17 to 39 is lower than when maternity leave is not treated as a temporary disability. This result suggests that among these hospitals the labor demand effect overwhelms the labor supply effect.

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[16] Jan Kmenta, Elements of Econometrics, New York: MacMillan Company, 1971, p. 370.

Table 5-11

F-Test Results[1]

	R^2 with fringes	R^2 without fringes	R^2 without fringes and union	F-value without fringes	F-value without fringes and union
Degree Nurse Average Wage	.617	.383	.370	1.037	1.01
Diploma Nurse Average Wage	.629	.390	.383	1.24	1.15

[1]Under null hypothesis $b_1 = b_2 = b_3 = b_4 = b_5 = b_6 = b_7 = b_8 = 0$

$F_{6,46}$ at the 5% level = 2.29

Finally, the hospital data was examined for a wage effect. It was found that wages vary directly with the age distribution when maternity leave is treated as a temporary disability. Wages vary inversely with the age distribution among hospitals who do not treat maternity leave as a temporary disability, although this relationship is at least in part the result of extreme values on the age and wage variables among a few hospitals. This estimated behavior is contrary to expectations and remains a puzzle.

This chapter also looked at relationships between other fringe benefits and wages. Generally, fringe benefits tend not to be complements or substitutes with each other, although there are some expectations. In addition, wages and fringe benefits do not seem to be related.

CHAPTER SIX

Union Behavior With Respect To Fringe Benefits

The examination of union behavior with respect to fringe benefits and women is undertaken for three reasons. First, labor organizations are specifically covered by both the Equal Pay Act and Title VII of the Civil Rights Act of 1964. Where a union acts as an employer it must not violate any of the prohibitions imposed on employers generally. Beyond that, in its capacity as a union it may not exclude or expel from membership or otherwise discriminate on the basis of sex. It must not limit, segregate or classify membership or applicants for memberhsip, or classify or refuse to refer any individual for employment so as to jeopardize an individual's employment opportunities, employer status or job applicant status on the basis of sex.[1] It must not influence or put pressure on an employer to discriminate unlawfully. Pressure has been interpreted to include strike or picketing activities aimed at inducing an employer to institute or maintain a prohibited wage differential or other terms and conditions of employment, demanding terms or interpretations of terms of a union contract with an employer which would require the employer to discriminate in payment of wages or other terms and conditions of employment contrary to legal requirements and negotiating with a wage differential or terms and conditions of employment with an employer that are unlawful.[2] It may not influence or attempt to influence to discriminate on the basis of sex in admission to, or employment in any program established to provide apprenticeship or other training.[3] In addition to this specific coverage in the legislation Revised Order No. 4[4] requires a union must cooperate with the employer in revising its collective bargaining agreement if the employer must do so to comply. Because of this coverage it is useful to examine the extent to which unions are behaving in ways consistent with equal rights legislation. Beyond this where there are unions their presence as the collective representatives of employees in

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[1] Civil Rights Act of 1964, Title VII U.S.C. 200e-2(b) P3053.

[2] "Wages & Hour Division Interpretive Bulletin on Equal Pay For Equal Work" 29 CFR 800.106 P4750.106.

[3] Civil Rights Act of 1964 and Equal Pay Act of 1963, 29 U.S.C. 206(d) (2), P3213 (d) (2).

[4] Federal Register, Vol. 36, No. 234, Saturday, December 4, 1974.

matters concerning terms and conditions of employment can be a potent force both in determining those terms and conditions through the collective bargaining process and in the day to day administration of the contract through the grievance procedure. Since in 1970 women made up 20.7% of union membership it is useful to examine the extent to which this has been a positive force in the area of equal rights for women. Finally union contracts and policies can provide some further indications of the status of maternity leave in practice, and can help identify other fringe benefits which may embody differential treatment on the basis of sex.

6.1 Union Negotiated Contracts

The first point where unions may exert an influence is in union negotiated contracts. Theoretically discrimination can occur in virtually any sort of contract clause. However, the Wage and Hour Division and EEOC have pointed out several areas frequently covered by union contracts where discrimination on the basis of sex often occurs. Seniority systems separated explicitly by sex or by "light" and "heavy" jobs where "light" jobs are normally women's jobs are forbidden. Provision of health insurance where females are not permitted to avail themselves of the insurance plan or some portion of it or are only allowed single coverage is viewed as discrimination. In addition any health insurance plan available completely or in part only to "heads of households" or "principal wage-earner" is viewed as having the effect of discrimination on the basis of sex. Similar restrictions in the availability of other fringe benefits are forbidden. Restrictions on the availability of training opportunities based on sex are outlawed. This is not an exhaustive list but it does provide some guidelines in the examination of union contracts discussed below.

A number of factors affect whether or not a contract contains clauses that discriminate on the basis of sex. Unions which contain few or no women may have contracts with no evidence of discrimination simply because this distinction is irrelevant. As women begin to enter non-traditional occupations and consequently become employees and members of some of these unions circumstances may arise where the distinction on the basis of sex becomes relevant. In the absence of the civil rights legislation and as long as women are a minority of the membership this is a cheap thing for a union to bargain away in return for a gain in an area affecting all its members. The presence of the legislation should inhibit this tendency, since it takes only a single female employee who feels discriminated against to bring suit against both the union and the employer. Where women make up a larger portion of employees and union membership discriminatory clauses may be more likely to have been embodied in contracts historically.

Separate seniority clauses reflected state protective legislation forbidding women from lifting certain weights and working excessive overtime, thus limiting women's eligibility for certain jobs.

They also reflected traditional view of men's and women's work and male union members' desires to protect their jobs. Access to overtime based on sex reflected similar considerations as well as the view that women "needed" less income. Discriminatory provision of fringe benefits reflected cost differences to the employer as well as the notion that since women were generally married fringe benefits were somehow less important to them. Health insurance need only be made available to single women, or, at best, only single coverage should be made available to female members. Retired female employees have a husband's pension, so a smaller pension could be given to women. Wage differentials could be justified on the same grounds. All of these represent some reduction in the total cost of the compensation package as well. From a bargaining strategy point of view the union might be willing to concede these discriminatory clauses if it meant the employer would be willing to improve the benefits. As long as there was no legal sanction against discriminatory provisions and as long as female union membership either agreed with the union rationalizations noted above or had little power in the union one or more of these discriminatory clauses would likely appear in a contract. As legislation which outlawed these discriminatory clauses began to appear, and as women began to become more sensitive to the discriminatory nature of these clauses, they should begin to disappear. In some cases employers would request elimination of the discriminatory portions of clauses. Elimination of separate seniority systems was in general costless to the employer but experience with racial discrimination showed that if legal means were required to eliminate the separate system it could be expensive to the employer. In other cases a complaint brought against the employer caused the contract to be amended. Unions where females make up close to a majority of membership may attempt to change discriminatory clauses through bargaining. However, if removing a discriminatory clause implies the loss of a benefit or failure to gain an improvement the union is unlikely to make this demand, since it has legal means available to it to insure that the discriminatory clause is removed. Unions are unlikely to expend much bargaining capital to make gains which should legally exist. All of this suggests that discriminatory clauses are removed from contracts very slowly and we should see some such clauses even ten years after the passage of legislation.

A separate but important development in contracts is the insertion of an anti-discrimination clause that includes sex. Clauses forbidding discrimination on the basis of race, religion, or national origin began to appear in the early 1960's. Occassionally other characteristics, including sex, were included, usually because union membership included some members of these groups. These clauses required anti-discrimination in administration of the contract and sometimes included anti-discrimination in hiring practices of the firm. They were included prior to civil

rights legislation to emphasize anti-discrimination to both union and firm and to encourage union members to more actively pursue their rights under the contract. After civil rights legislation was enacted these clauses became more pervasive. Under legislation they not only serve to emphasize the rights of minority group employees, they also serve to indicate the intent of the union and firm and protect the anti-discriminatory sections of contract in case of litigation. Groups which had not been included before but were covered by legislation were added to the clauses. This includes sex. I discussed this possibility with Leon E. Lunden, Division of Industrial Relations, Bureau of Labor Statistics. He pointed out that it was virtually costless to both union and firm to include the anti-discrimination clause and was not a controversial area. Administration of the clause was often a more difficult problem, but since the clauses were general and vague, they were often included. In my examination of union contracts below I found a number of these clauses.

The provision of a separate maternity leave clause, distinct from the temporary disability plan, bears separate discussion. Pregnancy occurs only in females and has traditionally not been viewed as a temporary disability by employers. Where employers have female employees a policy for pregnancy and childbirth, generally separate from the temporary disability policy, has been developed. If that policy was dismissal, unions often negotiated the right to return to work for their female members. But if the policy was a leave without pay of specified length unions often agreed or even participated in the development of the policy. Because of the current nature of the guideline, because of the differences in nature between childbirth and illnesses or injuries, and because provision of temporary disability benefits involve a cost, I found a number of separate maternity leave policies specified in contracts.

There is some evidence bearing on contract clauses which distinguish on the basis of sex in a published examination of union contracts by Bureau of Labor Statistics (BLS). A 1972 BLS study of the administration of seniority in major collective bargaining agreements covering 1000 workers or more showed that in the 349 agreements in the sample only two were found to have separate seniority provision.[5] This indicates that by 1972 seniority lists separated by sex were not numerous. In a 1970 BLS study of characteristics of agreements covering 5000 workers or more in a sample of 252 contracts 74 provided for a leave of al ence with out pay for maternity. The same study

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[5] Bureau of Labor Statistics, Administration of Seniority, Bulletin 1425-14, 1972, p. 9.

showed 82 contracts with provision for paid sick leave.[6] In a similar study of agreements covering 2000 workers or more done in 1972 an examination of 620 agreements showed 198 with an unpaid leave of absence for maternity and 195 with a paid sick leave provision.[7] These studies do not indicate how many contracts provide for both an unpaid maternity leave and a paid sick leave, but surely some do.

In 1961 BLS examined 1717 major collective bargaining agreements covering 1000 or more workers for anti-discrimination clauses. It found that 307 (18% of all contracts) contracts had anti-discrimination clauses mentioning race, creed, or national origin and of these, 179 (10% of all contracts) included sex.[8] Since the study was aimed specifically at clauses including race, creed, and national origin, it did not include clauses not mentioning one of these three. There may have been a few clauses including sex that were missed. In 1972 BLS in its examination of 620 agreements covering 2000 or more workers 528 (85%) had some sort of anti-discrimination clause and 331 (53%) included sex.[9] These samples are not strictly comparable, but they do indicate a growth in anti-discrimination clauses in general, and anti-discrimination clauses covering sex in particular.

These sources provide some hints about how union contracts reflect equal rights legislation. To get a better picture, however, I examined 100 agreements covering private sector employment in Wisconsin. These contracts were obtained by request to a random selection of 1486 locals listed in the Register of Reporting Labor Organizations.[10] Table 6-1 shows the unions whose agreements I examined. In many cases I received only the main agreement, not including the detailed benefit descriptions so some of the benefit plans may include discriminatory provisions not noted in my examination. I examined these agreements in their entirety noting specific references to distinctions made on the basis of sex. Of course, a distinction occurring in the administration of the provisions but not specifically mentioned in the provision will not be noted. I found 43 of the 100 contracts

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[6]Bureau of Labor Statistics, Characteristics of Agreements Covering 5000 Workers or More, Bulletin 1686, 1970, pp. 44,48.

[7]Bureau of Labor Statistics, Characteristics of Agreements Covering 2000 Workers or More, Bulletin 1729, 1972, pp. 45,51.

[8]Bureau of Labor Statistics, Anti-discrimination Provisions in Major Contracts, Bulletin 1336, 1961, p. 5.

[9]Bureau of Labor Statistics, Characteristics of Agreements Covering 2000 Workers or More, Bulletin 1729, pp. 17-18.

[10]Register of Reporting Labor Organizations, 1971, U.S. Department of Labor, Office of Labor Management and Welfare-Pension Reports, 1971.

TABLE 6-1

AGREEMENTS [illegible] BY UNION

UNION	NO. CONTRACTS	APPROXIMATE [illegible]	NO. FOR DISCRIMINATION CLAUSES INCLUDING SEX	SEPARATE MATERNITY LEAVE CLAUSE
UAW	3	193,130	2	3
Bakery W. [illegible]	2	60,650	1	2
Boilermakers	2	1,380	1	
Bookbinders	1	31,240	1	
Brewery Workers	1	4,730	1	
CWA	1	231,860	1	1
IUE	2	105,000	1	1
Operating Engineers	1	N/A	1	
Ladies Garment	2	353,850	1	2
Hotel & Restaurant	8	N/A[1]	0	
Independent Group	1	1,130	1	
AIW	1	30,800	1	
Insurance Agents	1	N/A	0	
Lithographers & Photoengravers	2	300	2	
Meat Cutters	2	61,710	1	
Office & Prof.	9	57,790	4	8
Oil Chemical & Atomic Workers	1	7,010	0	
Painters	3	N/A	0	
Pulp & Paper Workers Pulp, Sulfite & Paper Mill	25	N/A[1]	12	3
Railway Clerks	1	110,000	0	
Retail Clerks	2	N/A[1]	0	2
Rubber Workers	1	N/A[1]	0	1
Steelworkers	1	120,000	1	1
Teamsters	15	255,000	5	
Textile Workers	1	71,200	0	
Typographers	1	N/A	0	
Upholsterers	1	21,450	0	
Service Employees	6	152,250	3	3
Bakery [illegible]	1	N/A	1	
Transit	1	N/A	0	
Telegraphers	1	12,650	0	1

1 Thought to be more than 5% of membership

Source of [illegible]: Directory of National Unions and Employee Associations, 1971, BLS Bulletin 1750

contained an anti-discrimination clause and 42 of these included sex. Two of the contracts had a second clause pledging adherences to the Equal Pay Act and Title VII in addition to an anti-discrimination clause. This is important since, as discussed below, the simple existence of an anti-discrimination clause may not be enough to allow an arbitrator to strike discriminatory contract clauses. Four had special provisions aimed at assuring equal opportunity. Two of these noted that where the male pronoun was used it was to be construed to mean both genders. One pledged the company to examine promotional lines in an effort to assure equal opportunity. One pledged the company to study contract provisions to assure that no distinction was made on the basis of sex, particularly in job classification.

Despite these assurances of anti-discrimination there are some discriminatory clauses. In the 100 contracts, three provided some sex or marriage qualification on the availability of family coverage health insurance for wives of employees only, and one made a distinction on the basis of sex in pension provision. There were 33 contracts which specifically mentioned maternity leave. Of these 28 provided for an unpaid leave of absence of a specified length and also had a paid temporary disability plan. Five maternity leave policies were identical to the temporary disability plan. Of those agreements not specifically mentioning maternity leave it is impossible to know now maternity is treated.

I could not obtain any information about the number of women covered by these agreements. Table 6-1 indicates the approximate national female membership by union. While this does not give the relative number of females by union[11] it does provide some hint about distribution of anti-discrimination clauses and separate maternity leave clauses. Table 6-2 shows the number of anti-discrimination clauses and maternity leave clauses by size of female membership nationally in unions. The unions with more female members are more likely to have anti-discrimination clauses including sex and a separate maternity leave clause.

TABLE 6-2

Provisions of Contracts by National Female Membership

No. of Females	No. of Unions	No. of Contracts	Anti-disc.	Maternity
100,000	8	31	14	11
10,000-100,000	8	18	8	11
10,000	5	7	5	0

[11] I was unsuccessful in locating total membership by union.

While this examination of Wisconsin agreements is not definitive, it does provide some indications of how agreements reflect a bias of sex. Provisions which make a distinction on the basis of sex are not unknown, but they are rare except in the area of maternity leave. Special provision for maternity leave appear frequently where female union membership nationally is highest.

6.2 The Influence of Arbitration Decisions and Court Cases

The examination of union contracts provides some evidence for occasions when unions have been party to negotiated and therefore stated discriminatory practices. But the existence of an anti-discriminatory contract does not guarantee that discrimination on the basis of sex is not taking place. The day to day administration of a contract can embody the range of discriminatory practices. These may be in direct contravention of the contract or, more frequently, they may be practices not directly dealt with in the contract. If informal discrimination occurs the affected employee has two courses open to her. She may file a grievance through her union and/or she may file a complaint with EEOC and/or the relevant state equal rights agency.[12] Easy correction of informal discriminatory practices through the union grievance procedure presupposes that the union processes the grievance. A local may choose not to do so for several reasons. Females may be a politically unimportant group in the local so that other grievances are viewed as more substantive from the point of view of the local as a whole. Thus grievances affecting females only may be viewed as a nuisance and pushed to the end of the grievance list. This may occur frequently where local union leadership is male and relatively insensitive to employment problems of females. Female union members have legal recourse, if the local refuses to process the grievance, either under the civil rights legislation or under the Labor Management Relations Act, as a union breach of contract, failure to represent fairly, although this may be a difficult step for a "good" union member since it implies bringing a suit against the union as well as the employer. It has happened, however, and remains an option. In Dorothy Peterson et al. v. Rath Packing Company et al.,[13] two women employees filed a suit against both the company and the union. The case

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[12] In Wisconsin, the Equal Rights Division, Department of Industry, Labor and Human Relations.

[13] Dorothy Peterson et al., Appellees v. Rath Packing Company et al., Appellants. No. 71-1364. U.S. Court of Appeals, Eighth Circuit, June 7, 1972.

against the union arose out of the union's refusal to carry a grievance over reclassification of "men's" jobs into jobs available to both sexes beyond the second step. The court found that the union had indeed failed to represent these women fairly in the grievance and the union shared responsibility for damages under the Labor Management Relations Act.

Unions may also choose not to push a grievance if it feels that the issue is a major one and involves questions of law that should be resolved in court. Arbitrators have at times been reluctant to deal with questions of law when it can be avoided in the context of the contract, a point which will be discussed in more detail below. At the same time the courts have at times held that employees must choose whether to pursue action in court or in arbitration.[14] This is by no means a settled issue[15] but a union or individual union member may prefer the court procedure alone to settle a major issue. These considerations suggest that an examination of arbitration and court decisions will not provide a perfect catalog of discrimination occurring beyond the written contract and the way such discrimination has been handled by third parties.

Prior to the Civil Rights Act of 1964 arbitrators had a few cases involving problems of discrimination on the basis of sex. In cases where there was a conflict between the contract and the mandate of legislation arbitrators most frequently adhered to the principle that an arbitrator should not require conduct contrary to law even though sanctioned by contract.[16] Since most state legislation was protective legislation which required special treatment for female employees[17] this principle most often

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[14]See, for example, Dewey v. Reynolds Metal Co., 6th Cir. 1970, 2FEP Cases 687 or Corey v. AVCO Corp., No. 137-318, May 28, 1970. Connecticut Superior Court, Fairfield County. 2FEP Cases 738. In both cases the complaintant had lost in arbitration. Upon bringing suit in court the court ruled that to overturn the arbitrator would destroy the arbitration process.

[15]See Bowe v. Colgate-Palmolive Company, 416 F. 2d 711 (7th Cir. 1969), reversing 272 F. Supp. 332 (S.D. Ind. 1967) and Hutchings v. U.S. Industries 2 FEP Cases 725 (5th Cir., 1970), rev. U.S. D. Ct. E. Dist. of Tenn., 309 F. Supp. 691 2 FEP Cases 599 for two examples of courts ruling that both arbitration and court procedure ought to be available for remedy.

[16]See Ford Motor Co., 1 LA 462 (1945), Harry Shillman or Pittsburgh Corning Corp., 3 LA 364 (1964), C.W. Lillibridge.

[17]For example, state legislation often forbade female employees from lifting over 40 pounds. Any job requiring lifting of over 40 pounds was thus not available to women.

denied women access to certain jobs, regardless of contract provisions. The passage of the Civil Rights Act of 1964 made arbitration decisions in this area more difficult. State legislation often was in conflict with the Civil Rights Act. Initially EEOC accepted adherence to protective state legislation as a bonafide occupational qualification (BFOQ) for discrimination on the basis of sex. Consequently arbitrators continued making awards in favor of state law. However, in 1969, after some vacilation, EEOC issued a statement of policy that state laws regulating hours and weight lifting would no longer be accepted as a BFOQ. The response in arbitration awards has been mixed. Some arbitrators have taken this into account[18] while others have maintained that it is not within the scope of the arbitration process to repeal state laws.[19,20]

A related issue among arbitrators is to what extent arbitrators should take into account the civil rights legislation, whether or not a BFOQ is involved. This is a particularly thorny problem when the contract contains a standard anti-discriminatory clause or the administration of the contract has been done in a discriminatory way not specifically covered by the contract. Alfred W. Blumrosen, in an article examining arbitration on equal rights issues particularly after 1970, suggests that arbitrators have handled routine cases, i.e., discharge cases or cases of senior employees not being promoted, relatively responsibly. But in cases not specifically covered by the contract or where the contract embodies discriminatory clauses, the arbitrator will feel bound by the contract. The standard anti-discrimination clause is not sufficient to allow the arbitrator to interpret the contract to avoid discrimination, determine whether the contract as applied violates Title VII, advise parties of their duty to renegotiate the contract to eliminate discrimination, or reform the contract if parties fail to do so to eliminate discrimination.[21] On this issue the Fifth Circuit Court has stated:

> We hold that the federal district court in the exercise of its power as the final arbiter under Title VII may follow a like procedure of deferral under the following limitations.

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[18]Braniff Airways, Inc., 48 LA 769 (1965) Weyer Haeuser Co. 54 LA 857 (1970).

[19]Dayton Tire and Rubber Co., 55 LA 357 (1970).

[20]See Jean T. McKelvey, "Sex and the Single Arbitrator," Ind. and Lab. Rel. Rev. 24:30, April 1971, pp. 335-353 for an excellent review of arbitration cases, particularly those dealing with the BFOQ issue, from 1950 to 1970.

[21]Alfred W. Blumrosen, "Labor Arbitration and Discrimination" Arbitration Journal, 28:3 Sept. 1973, pp. 145-158.

> First, there may be no deference to the decision of the arbitrator unless the contractual right coincides with rights under Title VII. Second, it must be plain that the arbitrator's decision is no way violative of the private rights guaranteed by Title VII, nor of the public policy which inheres in Title VII. In addition, before deferring, the district court must be satisfied that (1) the factual issues before it are identical to those decided by the arbitrator; (2) the arbitrator had power under the collective agreement to decide the ultimate issue of discrimination; (3) the evidence presented at the arbitral hearing dealt adequately with all factual issues; (4) the arbitrator actually decided the factual issues presented to the court; (5) the arbitration proceding was fair and regular and free of procedural infirmities. The burden of proof in establishing these conditions of limitation will be upon the respondent as distinguished from the claimant.
>
> In essence, this procedure will amount to a review of the arbitration proceeding in cases involving Title VII rights. It is not as broad as the procedure followed in general grievance-arbitration cases where the court looks only to the question whether under the terms of the collective bargaining agreement the arbitrator had power to decide the issues he decided. United Steelworkers, supera 363 U.S. at 596. Neither is it as broad as the policy of deferral under res judicata principles which we have applied in cases where facts previously determined by the Labor Board are presented in collateral proceedings in federal court.[22]

The main conclusion from this arbitration history is that the arbitrator's award is most likely to reflect his view of his role unless he is specifically mandated by the anti-discrimination clause to consider questions of law. Meanwhile, the courts have reserved a role for themselves in equal right contract disputes which is greater than that normally reserved for the courts in cases involving arbitration.

The role of the courts has included examination of union behavior as well as employer behavior. Under certain conditions, then, unions can be held jointly responsible with employers for discriminatory behavior. In addition, given the restrictions on internal behavior of the union itself, the union may be held solely responsible for discriminatory behavior. In fact a number of sex discrimination cases have arisen under federal legislation where a labor union was a co-respondent. In Department of Labor

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[22]Rios v. Reynolds Metals Co. 5 FEP 1 (5th Cir. 1972).

v. Sapner, Inc. and Local 604, Clothing Worker,[23] the union noticed that between 1966 and 1968 the company paid female cutters and markers .40/hr. less than male cutters and markers, in violation of the Equal Pay Act. With this knowledge the union demanded in collective bargaining negotiations that the company pay the back pay due 22 female employees to 100 employees in the shop in the form of a .18/hr. wage increase. The union adhered to this position and finally the company agreed. The female employees involved then brought a complaint against the firm. The court ruled that the union must be included as a respondent and the company and union were jointly liable for back pay to these employees--the company because it had agreed to the demand; the union because it had made the demand.

The test of union responsibility is the extent to which it has negotiated, or otherwise acted in violation. In the above case it was clear that the union, with full knowledge of the company's discriminatory behavior, had itself negotiated in a discriminatory way. In other instances responsibility is not so clear. In Josephine Juninko v. Edwin Wiegan Co., et al.,[24] two women had been fired by the company in 1953 in accord with a company policy of firing married women in order to make jobs available for returning veterans. After passage of the Civil Rights Act of 1963 they had reapplied for jobs, but were not rehired although the company was hiring. The complaint was brought against Local 1020, UAW, as well as the company but the court dismissed the case against the union on the grounds that the union did not participate with the company in formulating hiring decisions. In Joanne Glus et al. v. G.C. Murphy Co., et al.[25] a labor union entered in a collective bargaining agreement prior to 1964 establishing seniority and compensation plans which limited promotions and pay because of sex. This arrangement was perpetuated to 1971. The union was found solely responsible on the grounds that it had not attempted to bargain for equal rights. These cases are too few and too tentative to make any real generalization about the extent to which and the precise circumstances under which labor unions bear responsibility for discriminatory employment practices.

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[23] James D. Hodgson, Secretary of Labor, United States Department of Labor, Plaintiff v. Sagner, Inc. et al., Defendents, United States District Court, District of Maryland. Civil No. 19906. April 8, 1971. 3 EDP P. 8214.

[24] Josephine Jurinko et al., Plaintiffs v. Edwin L. Weigand Company et al., Defendents, United States District Court, Western District of Pennsylvania. Civil No. 69-225. Aug. 18, 1971. 4 EPD P. 7516.

[25] Joanne Glus et al., Plaintiffs v. G.C. Murphy Company et al., Defendents United States District Court, Western District of Pennsylvania. Civil No. 71-264. July 29, 1971. 4 EDP P. 7548.

However, it is clear that where discriminatory practices are embodied in a collectively bargained labor agreement unions at least run the risk of being found jointly responsible for the practice. A much more systematic and complete study must be done to draw firm conclusions about union behavior with respect to equal rights for women. However, the discussion here indicates that union contracts do contain some discriminatory clauses, with the most prevalent one being a maternity leave policy differing from the temporary disability policy. There have been a number of grievances and court cases involving discrimination on the basis of sex. The union has participated both as a respondent and a claimant. The information presented here does not allow classification of unions as either a strong force in favor of equal rights for women or a major obstacle to equal rights for women, but as an institution which has behaved as both.

CHAPTER SEVEN

Summary and Conclusions

The specific goal of this study has been to examine the economic implications of the Equal Employment Opportunity Commission and Wisconsin Department of Industry, Labor, and Human Relations guidelines requiring employers to treat maternity leave as a temporary disability. More generally this study has attempted to evaluate a policy which imposes an increase in the cost of providing fringe benefits. While maternity leave treated as a temporary disability has been an example of such a policy, much of the framework developed here could be used, perhaps in modified forms, for examination of other fringe benefits. Finally, some attempt has been made to identify other fringe benefits, at least among unionized industries, which may be offered differentially depending on the sex of the employee.

7.1 Summary of Findings with respect to Maternity Leave

In chapter two a general economic framework was set out for the examination of the economic implications of maternity leave treated as a temporary disability. First a labor cost function which specifically takes into account the cost of provision of fringe benefits as part of total compensation was developed. The cost of providing compensation for absences from work due to temporary disabilities and the cost of treating maternity leave as a temporary disability were specifically recognized as part of the labor cost function. The size of the cost of treating maternity leave as a temporary disability to the firm was shown to depend on the number of female employees and their age distribution, the age specific probability of pregnancy among employed females and the parameters of the temporary disability plan. This function for the cost of treating maternity leave as a temporary disability was used in chapter four to estimate the static cost of the maternity leave guideline for all employers in Wisconsin. It should be emphasized that the cost estimates presented in chapter four are estimates of the maternity leave guideline, not estimates of the cost of treating maternity leave as a temporary disability. The difference between the two concepts is crucial. There were approximately 27% of all employees covered by a temporary disability plan which paid some compensation who were covered by a temporary disability plan which treated maternity leave as a temporary disability before the guidelines were adopted. For these

employees the estimates in chapter three attribute a zero cost to the maternity leave guideline. The provision of maternity leave treated as a temporary disability is not costless for these employees, but none of the cost should be attributed to the maternity leave guideline.

The estimates of the cost of the maternity leave guideline ranges from $4.4 million to $12.8 million annually in Wisconsin, depending on the assumptions about the amount of compensated temporary disability leave which is available and required for maternity leaves. Perhaps the cost estimate assuming an eight week absence from work which is required and available can be taken as representative. This estimate, $9.3 million is .06% of wages and salaries and may increase the cost of providing compensated temporary disability leaves by as much as 9%. It should be remembered that these are aggregate estimates for the entire state of Wisconsin. Any individual firm may experience a larger or smaller cost depending on the age and sex composition of its labor force and the actual fertility rate experienced. Although this is a rather small percent of wages and salaries, it represents an increase in the cost of the provision of a fringe benefit by enough to be noticed by firms. This together with the knowledge that the benefit provided is of practical value only to female employees who are subject to the risk of pregnancy may be sufficient to explain vocal employer opposition to the maternity leave guideline.

The second part of the analysis of maternity leave treated as a temporary disability dealt with three possible responses to the increase in the cost of the temporary disability policy. Two of the responses are adjustments in the total compensation function. A wage effect may be seen if employers, in equilibrium, pay lower wages when they offer maternity leave as a temporary disability and higher wages when maternity leave is not treated as a temporary disability. This effect may be mitigated among employers offering maternity leave treated as a temporary disability but who employ few young females. A substitution effect can occur if employers treating maternity leave as a temporary disability offer fewer other fringe benefits, or lower levels of fringe benefits, than employers not treating maternity leave as a temporary disability. These two propositions were tested using hospital data. In the hospital data there is an inverse relationship between wages and age when maternity leave is not treated as a temporary disability which seems to be the result of a few hospitals with extreme values for wages and age. Hospitals display consistent direct relationship between wages and age when maternity leave is treated as a temporary disability. This surprising result remains a puzzle. The third and final possible response combines labor supply and demand behavior. Employers, in an effort to minimize the cost of maternity leave, may be expected to attempt to adjust their labor force to minimize the number of employees subject to pregnancy. Simultaneously, young females may be expected to supply their labor to firms offering maternity leave treated as a temporary disability. The net result of this behavior is estimated using a reduced form of the labor supply and

demand system. It is found that employer labor demand behavior overwhelms labor supply behavior.

7.2 The Implication of These Findings for the Maternity Leave Guideline

The controversy that arose when the EEOC and DILHR guidelines were issued has remained alive over the past two years. In the recent decision Cleveland Board of Education v. LeFleur the Supreme Court affirmed the section of the guideline forbidding employers to set arbitrary lengths of time which female employees must be absent from work for childbearing. But in a second decision, Geduldig v. AIELLO the Supreme Court ruled that compensation need not be paid during an absence from work due to childbearing. These two cases taken together leave the legal status of the guideline in a state of confusion.

At least part of the controversy generated by the guideline, as well as the second Supreme Court decision noted above, center on the issue of the cost of the guideline. Although employers may have calculated a cost figure for their individual firms, the estimates provided here are the first aggregate estimates. There is a cost to the maternity leave guideline which is small on average across all employers in Wisconsin, but which may be of some consequence for specific individual employers.

Because there is a cost involved in the maternity leave guideline it is not unreasonable to expect adjustments to the cost. Although analysis of hospital data in search of some possible adjustments has yielded puzzling results with respect to the wage effect and shown no adjustment with respect to the substitution effect, other industries may adjust in the expected way. The hospital data did show that when maternity leave is treated as a temporary disability there are fewer young women employed. If this result is displayed in other industries as well, the maternity leave guideline may be a deterent to employment for women of childbearing ages. These implications of the maternity leave guideline are important to understand when the guideline is being evaluated as a vehicle for producing equal rights for women.

7.3 Maternity Leave as an Example of Fringe Benefit Behavior

Most of the discussion of maternity leave in chapter two can be generalized to fringe benefits. There is very little literature dealing with economic behavior with respect to fringe benefits. In chapter five the analysis of hospital data for wage and substitution effects indicates that

in general these effects do not occur with respect to fringe benefits. Furthermore, fringe benefits do not appear to be multicollinear. This suggests that the classical microeconomic theory which assumes fringe benefits to be part of wages needs to be reexamined and empirically tested. Empirical work on fringe benefits should be done with data which allows use of employer costs or contributions for fringe benefits. It should be done on a variety of industries. Theoretical consideration needs to be given to the relationship between wages and fringe benefits and the labor supply response to fringe benefits. The method used in this study for the examination of maternity leave may be helpful in examination of other fringe benefits.

Chapter seven deals specifically with a discussion of union behavior with respect to fringe benefit administration depending on sex, as evidenced in court cases and arbitration procedures as well as written contracts in Wisconsin. This chapter does not in any way represent a complete analysis of union behavior in this area. It does, however, suggest that while written union contracts do not generally provide fringe benefits differentially on the basis of sex, unions may administer contract provisions differentially depending on sex. Actual contract administration is a difficult area to study since it often depends on personalities rather than stated policy. It should be examined more thoroughly, however, particularly with respect to administration of health insurance benefits.

7.4 Conclusion

It is hoped that this study will provide some insights into the implications of the maternity leave guideline which will be useful to both the proponents and opponents. The maternity leave guideline is but one of a number of EEOC guidelines. All the guidelines carry economic implications, many of which have not been determined. This study may be helpful in suggesting what some of those implications are and in providing an impetus for examination of them. Beyond that, this study suggests that further inquiry into fringe benefit behavior is merited.

APPENDIX A

Surveys of Employers, School Districts, and Hospitals

The employer survey was administered by mail questionaire to 300 employers with 125 responses. A description of the sampling procedure is contained in chapter two. The school district survey was administered by mail questionaire to the 440 Wisconsin school districts with 342 responses. The maternity leave and fringe benefit portions of the hospital survey were administered by mail questionaire to 189 non-psychiatric, non-geriatric hospitals in Wisconsin. There were 84 responses. The fringe benefit portion was initially administered as part of a fringe benefit survey conducted by Wisconsin Society of Hospital Personnel Administrators and the Wisconsin Hospital Association. There were 109 responses to this survey. Hospitals not responding to this survey were resurveyed with 18 responses. Hospitals not responding to the three parts of the mailed survey were contacted in a telephone survey. There are 79 responses to the telephone survey. All survey forms are shown here along with cover letters.

State of Wisconsin \ DEPARTMENT OF INDUSTRY, LABOR and HUMAN RELATIONS

P.O. BOX 2209

MADISON, WISCONSIN 53701

PLEASE REPLY TO

Bureau of Community Services

Dear Sir:

A year ago the Equal Employment Opportunity Commission and the State of Wisconsin issued a guideline requiring employers to treat maternity leave as any other temporary disability. This guideline is likely to impose a cost on employers. I am currently engaged in a study which will try to estimate the cost to employers of complying to this guideline. The study, entitled "Wisconsin Maternity Leave and Fringe Benefits: Policies, Practices, and Problems", is funded by the United States Department of Labor, Manpower and Administration.

The enclosed survey, when completed, will allow me to estimate the costs of the new policy to Wisconsin employers. The information you provide will be strictly confidential. My report will not identify any firm, nor will the information I gather be released to or used by any other individual or group or agency.

Your firm has been selected as one of a random sample of 200 employers. Using the results of this sample I will estimate the extent to which different sick leave programs are followed in Wisconsin and thereby estimate the costs to employers of conforming to the guideline. May I emphasize that there shall be absolutely no attempt to estimate the costs to any employer participating in the survey. The survey results shall be used only to project the practices of Wisconsin employers on a state wide level. Neither you nor your firm will be identified in my final report. Nor will I release to anyone the names of the firms participating in the survey.

I would appreciate your cooperation in completing the enclosed survey. The completed form may be returned in the envelope provided. Please try to complete the survey by July 30. Should you have any questions, I shall be happy to provide additional information. My telephone number is 608-266-3636.

Thank you for your cooperation.

Sincerely,

Jennifer Gerner

Jennifer Gerner
Principle Investigator

JG/jck

Enc. - 2

EMPLOYER FRINGE BENEFIT SURVEY

NAME OF EMPLOYER _____

ADDRESS _____

NO. EMPLOYEES _____

NO. OF FEMALE EMPLOYEES _____

I. Sick Pay

1. At what rate do employees earn sick leave?

2. If sick days are granted, what is the maximum accumulation allowed?

3. What percentage of the wage is paid during sick leave? (If a flat dollar amount is paid, note that)

4. Is a doctor's certification of illness required to collect sick pay?

_____Yes _____No

5. What is your policy for illness lasting longer than the sick leave accumulated by the employee?

6. Do you grant sick pay for illness lost due to pregnancy?

_____Yes _____No

7. If yes, what are the limits of coverage?

8. In addition to your sick leave plan do you have an insured temporary disability or income continuation?

_____Yes _____No

9. If so what percent of the premium do you pay for each employee?

II. Leave of Absence

1. Does your firm grant leaves of absence? _____Yes _____No

2. What is the maximum time an employee may be on a leave of absence?

3. Is the right to return to your job guaranteed?

_____Yes, unconditionally to same job

_____No, but attempt to find same or similar job

_____No, but if nothing available, 1st on waiting list

_____No.

4. What are reasons an employee may request a leave of absence?

_____extended illness

_____pregnancy

_____vacation

_____other, please specify

5. Does the employee retain seniority during a leave of absence?

6. Does the employee retain health insurance, life insurance, and pension benefits during a leave of absence? (If you do not provide all the benefits mentioned, please circle the ones offered.)

_____Yes, the firm maintains the premiums

_____No.

_____Not applicable, we do not offer any of the above benefits

III. Maternity Leave

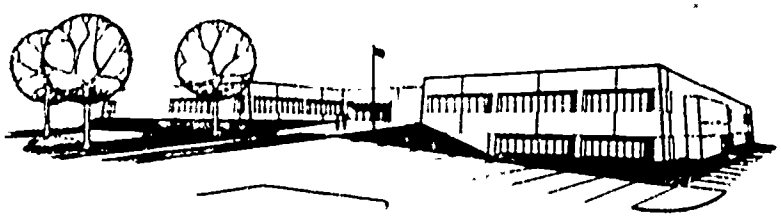
1. Do you have a special policy for maternity leave? _____Yes

_____No

2. If yes, please describe it.

IV. Miscellaneous

1. If you have any special provisions with regard to sick leave, leave of absence, or maternity leave, please describe them below.



Wisconsin Hospital Association

P. O Box 4387
5721 Odana Road
MADISON, WISCONSIN 53711
Phone: Area Code 608 274-1820

MEMORANDUM

GENERAL 41-73

July 6, 1973

TO: Institutional Members

FROM: Warren R. Von Ehren
President

SUBJECT: Wisconsin Maternity Leave and Fringe Benefit Policies, Practices and Problems

The attached survey form has been prepared by Mrs. Jennifer Gerner, Director of the captioned project. Her group has received a federal grant to perform this study which includes the cost impact of the maternity leave rulings which were proposed in 1972.

We urge your cooperation in this survey and have been assured that the information you provide will be held in strict confidence and used only for completion of this project. Copies of the study will be made available to the membership as well as a special report containing an analysis of the information provided by the hospitals plus an equation which will allow an individual hospital to calculate its own cost if the rulings are reinstated.

Thank you in advance for your cooperation and assistance. Please return the survey forms to the Association office no later than July 23. If you have any questions concerning any portion of the survey, Mrs. Gerner can be reached at 608-266-3636.

WRVE/ah
Enclosure

Hospital Maternity Leave Survey

1. Total number of employees _____.

2. Total number of female employees _____.

3. Number of full time and part time female employees in each of the following job categories and age groups:

   (The specific jobs for each category are listed on the next page of this questionnaire)

Age	15-19		20-24		25-29		30-39		40 & Over	
	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time	Full time	Part time
a. Nursing Personnel										
b. Office Personnel										
c. Technical Personnel										
d. Service Personnel										
e. Professional Personnel										
f. Miscellaneous Personnel										

4. If the hospital pays fringe benefits (premiums on policies or payments to funds) during sick leaves and leaves of absence, please check the appropriate box. If no payments are made, leave the box blank:

	Pension	Life Ins.	Health Ins.
Sick Leave			
Leave of Absence			

Exact Job Classifications:

a. Nursing Personnel includes:

Registered Nurse Degree
Registered Nurse Diploma
Licensed Practical Nurse
Nursing Assistant
Operating Room Technician - Scrub
Operating Room Supervisor
Director of Nursing Service

b. Office Personnel includes:

Controller
Finance Director
Office Manager
Clerk-Typist-General
Personnel Director

c. Technical Personnel includes:

Medical Technologist ASCP
X-Ray Technician Registered
Occupational Therapist OTR
Inhalation Therapist AAIT
Certified Inhalation Therapist
Non-certified O.T. Assistant
Certified Lab Assistant
Chief Lab Technologist
Chief Med. Rec. Technician
Chief Radiologic Technician

d. Service Personnel includes:

Janitor
Maid

e. Professional Personnel includes:

Dietician
Pharmacist
Physical Therapist
Director of Pharmacy
Director of Physical Therapy
Director of O.T.
Director of Dietetics
Director of Social Services

f. Miscellaneous Personnel

Director of Purchasing
Chief Engineer
Executive Housekeeping & Laundry
Director of Volunteer Services

5. Does seniority continue to accrue during

Sick Leave

_____Yes

_____No

Leave of Absence

_____Yes

_____No

6. When an employee takes sick leave or leave of absence do you hire replacement workers for the absent employee? The information needed is whether that position stays vacant or whether someone fills it regardless of whether the replacement is another employee or a new worker hired for the purpose. Please check the appropriate box. If the hiring of a replacement depends upon the expected length of absence, please provide the number of weeks where appropriate. (If there is no exact policy, please provide whatever "rule of thumb" policy you use.)

	Yes	No	
Nursing Personnel	____	____	if absent at least ____weeks
Office Personnel	____	____	if absent at least ____weeks
Technical Personnel	____	____	if absent at least ____weeks
Service Personnel	____	____	if absent at least ____weeks
Professional Personnel	____	____	if absent at least ____weeks
Miscellaneous Personnel	____	____	if absent at least ____weeks

7. How many quits have you had in the past two years (June 1971-June 1973) when the reason given was pregnancy? _____

8. How many maternity leaves have you had in the two year period June 1971-June 1973?

1971-1972_____ 1972-1973 _____

a) How many said they would return to work but actually did not?

1971-1972 _____ 1972-1973 _____ Leave not over _____

b) Average <u>length</u> of the leave for those returning? _____

c) How many workers returned only temporarily? (Worked one month or less) ____

9. If a health insurance plan is available through your hospital, does it provide maternity coverage?

_____Yes

_____Yes, but optional

_____No

_____Health insurance not available through the hospital

10. If a temporary disability policy, is available through your hospital does it cover absence due to pregnancy?

_____Yes

_____No

_____ Temporary disability not available through the hospital

Fringe Benefit Information

Please complete the following fringe benefit information. This information is vital to provide you with accurate and complete information about the cost of maternity leave.

A. Vacation

1. How many weeks vacation do the following classes of employees receive after one year of service?

Non-exempt _____weeks

Exempt _____weeks

Department Heads _____weeks

Administrators _____weeks

2. How much can he take at one time? _____

3. How long must the following classes of employees work before they are eligible for an increase in vacation benefits?

	Non-exempt	Exempt	Dept. Heads	Administrators
One week				
Two weeks				
Three weeks				
Four weeks				
Over five weeks				

4. Do part time employees receive vacation benefits?

Full_____ Pro-rated_____ None_____

If yes, how many hours per week must they work to receive benefits?

5. Are employees allowed to accumulate their vacation benefits? _____

_____Yes _____No

If yes, what is the maximum accumulation allowed? _____

6. Are employees allowed to receive pay in lieu of taking vacation time?

   For all accumulated vacation time _____for part_____None_____

7. May an employee take vacation benefits during an extended illness or leave of absence?

   _____Yes

   _____No

B. Life Insurance

1. Is your life insurance coverage for employees

   _____paid in full by the hospital

   _____paid in full by the employee

   _____cost shared by the hospital and the employee

   _____no program

2. If cost is shared, what percent of the cost does the hospital pay?

   Non exempt _____

   Exempt _____

   Department Heads _____

   Administrators _____

3. How long must an employee work before he is eligible for life insurance coverage? _____

4. Are part time employees eligible for life insurance? _____Yes _____No

   If yes, how many hours per week must they work to be eligible? _____

C. Health Insurance

1. Check the health insurance coverage carried:

_____Hospitalization

_____Surgical

_____Major Medical

2. How long must an employee be employed before he is eligible for health insurance coverage? _____

3. Are part time employees eligible for health insurance coverage?

_____Yes _____No

If yes, what is the minimum number of hours worked required to receive health insurance coverage? _____

4. What percent contribution does the hospital make toward employee coverage?

_____% toward single coverage

_____% toward family coverage

5. Please check insurance carrier:

	Blue Cross	Blue Shield	WPS	Other
Hospitalization				
Surgical				
Major Medical				

D. Disability Insurance Coverage

1. Do you provide disability insurance coverage? _____Yes _____No

2. What percentage of cost is paid?

_____by hospital

_____by employee

3. How long must an employee be employed before he is eligible for disability insurance coverage? _____

4. Are part time employees eligible insurance coverage?

_____Yes _____No

If yes, how many hours per week must they work to be eligible? _____

5. What percent of employee salary does the plan provide?

Non-exempt _____%

Exempt _____%

Department Heads _____%

Administrators _____%

6. How long may an employee collect disability benefits per incident?

Non-exempt _____

Exempt _____

Department Heads _____

Administrators _____

7. On what day of her injury or illness does disability insurance take effect?

_____First day _____Third day

_____Second day _____Fourth day

Other, please state when _____

E. Sick Pay

1. Please describe briefly your sick plan:

2. If sick days are granted, what is the maximum accumulation allowed?

Non-exempt _____

Exempt _____

Department Heads _____

Administrators _____

3. Do part time employees receive paid sick days? _____Yes _____No
If yes, what is the minimum number of hours worked required to receive paid sick days? _____

4. Can employees receive pay for any accumulated sick days not used? _____Yes

_____No
If yes, please explain system:

5. Does the hospital grant sick pay for days lost due to pregnancy?

_____Yes _____No

If yes, what are the limits of coverage?

F. Leave of Absence

1. How long must an employee be employed before he can request a leave of absence? _____

2. What is the maximum time an employee may be on leave of absence?

Non-exempt _____

Exempt _____

Department Heads _____

Administrators _____

3. Is the right to return to your job guaranteed upon return to work?

_____Yes _____No

If no, what is your procedure?

4. Please list any special leave of absence allowed and the maximum time off allowed:

G. Pension

1. Do you have an employee pension plan? _____Yes _____No

2. What percent of employees wage does the hospital contribute? _____%

Wage Information

Please complete the following table using monthly wages for each group, rounded to the nearest dollar. If there is a salary range for the position, please provide the base and maximum salary. If there is no range enter the monthly salary in the base column and omit the maximum. Finally, for positions with a salary range, please enter an "average" salary for the position. An exact average is desirable but a reasonable estimate is sufficient.

	Base Monthly Salary In Whole Dollars	Maximum	Average
1. Registered Nurse - Degree			
2. Registered Nurse - Diploma			
3. Licensed Practical Nurse			
4. Medical Technologist (ASCP)			
5. Dietician (ADA)			
6. X-Ray Technician-Registered			
7. Pharmacist			
8. Physical Therapist			
9. Nursing Assistant			
10. Operating Room Technician - Scrub			
11. Occupational Therapist (OTR)			
12. Respiratory Therapist (ARRT)			
13. Respiratory Therapist Asst. (Trainee)			
14. Certified Occupational Therapy Assistant			
15. Certified Laboratory Assistant (CLA)			
16. Clerk-Typist-General			
17. Janitor			
18. Maid			
19. Minimum (Hourly) Hire Rate			

State of Wisconsin \ DEPARTMENT OF INDUSTRY, LABOR and HUMAN RELATIONS

P.O. BOX 2209

MADISON, WISCONSIN 53701

PLEASE REPLY TO

Bureau of Community Services

Dear Sir:

A project entitled "Wisconsin Maternity Leave and Fringe Benefits: Policies, Practices and Problems" has been funded by the United States Department of Labor, Manpower Administration. A part of the project is the estimation of costs to Wisconsin employers of conforming to recent guidelines requiring the treatment of maternity leave to be no different from any other temporary disability.

To increase the accuracy of the cost estimate, special attention is being given to school districts within the state. The enclosed survey form is intended to provide the necessary information concerning existing maternity leave policies in order that the extent of policy change, and cost, required by the guideline may be known. The data collected on this survey will be held in strict confidence and will be used only to construct the aggregate cost estimate for school districts. No individual district will be identified in the final report of the project, nor will the project attempt to estimate the costs by individual school district.

The Directors of the Wisconsin Association of School Boards are cooperating with the study and urge your participation. The results of the study will be supplied to the Association of School Boards for distribution to you. This special report will include an analysis of the data from the survey plus an equation, with necessary explanation of appropriate procedure, which will allow each school district to calculate individually the costs of the guideline.

Please complete the questionnaire and return it by August 6 in the envelope provided.

Should you have any questions please feel free to contact me at 608-266-3636.

Thank you for your cooperation.

Sincerely,

Jennifer Gerner

Jennifer Gerner
Principal Investigator

JG/jck
Enc. - 2

MATERNITY LEAVE SURVEY

To complete the study of the costs of maternity leave, information concerning the school districts' policy with respect to maternity leaves is needed. Please complete the following questions to describe the policy of your district. Describe the policy currently in effect. Should you be in the process of changing that policy and unable to state completely the new policy, describe the old policy and answer question # 13.

NAME OF SCHOOL DISTRICT _____

1. Pregnancy leave is treated:

   _____according to sick leave policy

   _____according to sick leave policy for the period of medical disability only

   _____as a leave of absence

2. Does the school district require that a pregnant teacher take a leave of absence?

   _____Yes

   _____No

3. Must the leave of absence begin at a specified time during the pregnancy?

   _____Yes, during _____month of pregnancy

   _____No

4. Alternately, does the school district require that a teacher not begin any semester if she is pregnant?

   _____Yes, may not begin a semester if_____months pregnant

   _____No

5. Does the district require the teacher to wait a given period following delivery before resuming her duties?

   _____Yes, must wait at least _____ weeks after delivery to resume duties

5. (continued)

_____No, but medical certification of fitness is needed.

_____No requirement

6. Does the district require the teacher to wait until the beginning of the semester following delivery to resume duties?

_____Yes

_____No

7. Is there a maximum period for which a leave of absence maternity is granted?

_____Yes, _____months

_____Yes, a maximum of _____semesters may be taken

_____No

8. Is there a maximum period following delivery (or following certification of physical fitness) for a leave of absence to terminate?

_____Yes, must return no later than _____months after delivery

_____Yes, must return no later than the start of the_____semester following delivery

_____No upper limit

9. During a leave of absence does the school district: (Check appropriate answers)

_____allow accumulation of seniority

_____pay _____% of premium for group health insurance

10. Must the teacher be employed a stated length of time to qualify for maternity leave?

_____Yes, the requirement is _____previous employment

_____No

11. Does your temporary disability insurance policy, if you have one, cover extended absences due to pregnancy?

_____Yes

_____No

_____Do not have temporary disability insurance coverage

12. Please describe any additional significant aspects of maternity leave policy not treated in the above questions.

13. If you are in the process of changing your policy, please describe the changes you expect.

APPENDIX B

Tabulation of Responses to the Hospital Surveys

This appendix contains the tabulation of responses to the hospital surveys. All hospitals responding to the mailed fringe benefit survey are tabulated together. Responses to telephoned surveys are shown separately from responses to mailed surveys.

June

Maternity Leave Survey

Hospital Name: _____ No. Beds: _____

Survey Completed by: _____

Address: _____

City: _____ State: _____ Zip: _____

I. Tabulation of Fringe Benefit Survey: Responses to Mailed Questionaire

Note: This survey was done at two different times. The first was in March, 1973 and was a fringe benefit survey conducted by WHA and WSHPD. There were 84 responses to this questionaire. A second mailing of selected sections of the same questionaire was made only to the non-respondents from the initial survey. An additional 43 hospitals responded to the second mailing. This tabulation presents responses to both surveys. There are a total of 127 responses.

A. Vacation

1. How many weeks of vacation do the following classes of employees receive after one year of service?

No. of weeks	0	1	2	3	4	No Response
Non-exempt	1	12	108	2	-	4
Exempt	-	11	91	11	1	13
Department Heads	1	12	80	28	4	2
Administrators	-	9	57	33	23	5

2. How much can he take at one time?

No. of weeks	0	1	2	3	4	All	No Response
Non-exempt	1	2	28	1	6	80	9
Exempt	-	3	25	2	6	79	12
Department Heads	-	3	27	3	5	80	9
Administrators	-	3	26	3	7	79	9

3. How long must an employee work to earn an additional week of vacation?

No. of years	2	3	4	5	6	7	8	10	more than 10	earns no more	No Response
Non-exempt	11	5	3	69	4	6	5	14	1	3	6
Exempt	11	9	4	63	2	3	5	14	2	3	11
Department Heads	10	10	3	63	4	3	4	14	5	5	6
Administrators	9	8	2	47	1	3	4	11	5	24	13

4. Do part time employees receive vacation benefits?

None	7
Pro-rated	120

5. If yes, how many hours per week must they work to receive benefits?

Hours/week	1-10	16	18-20	21-25	more than 25	no minimum or no benefits	No Response
No. of Hosp.	8	6	56	18	1	33	5

6. Are employees allowed to accumulate vacation benefits? If so, what is the maximum accumulation allowed?

No Accumulation Allowed	4-6 Weeks Accumulation	Unlimited or at Supervisor's Discretion	No Response
106	10	7	3

7. Are employees allowed to receive pay in lieu of taking vacation time?

No	Full Pay	Partial Pay	No Response
104	10	11	2

B. Life Insurance

1. Is there life insurance coverage for employees?

No Program or Paid in Full by Employee	Paid in Full by Hospital	Shared by Hospital and Employee	No Response
38	76	12	1

2. If cost is shared, what percent of the cost does the hospital pay?

% of Cost	20-40	50	60-90	100	No Program or Paid by Employee	No Response
Non-exempt	5	3	3	65	50	1
Exempt	5	3	3	65	50	1
Department Heads	4	3	3	71	44	2
Administrators	4	3	4	71	44	1

3. How long must an employee work before he is eligible for life insurance?

No. of weeks	2-10	12	18-26	52	52+	No Program	No Response
No. of hospitals	16	32	18	10	5	44	2

4. Are part time employees eligible for life insurance, and if so, what is the minimum number of hours per week they must work to be eligible?

Hours/week	8-10	20	23-36	Not Eligible or No Minimum	No Response
No. of Hosp.	3	28	12	82	2

C. Health Insurance

1. Is there health insurance coverage available?

	Yes	No
Hospitalization	124	3
Surgical	124	3
Major Medical	104	23

2. How long must an employee be employed to be eligible for coverage?

No. of weeks	4-10	12	18-24	52	Immediate Eligibility
No. of Hosp.	60	33	7	1	26

3. Are part-time employees eligible, and if so how many hours per week must they work to be eligible?

Hours/week	6-10	20	21-25	30 and over	Immediately or Not Eligible	No Response
No. of Hosp.	9	58	30	8	19	3

4. What percent contribution does the hospital make toward employee coverage?

% Toward Single	0	3-45	50	55-70	75	79-90	100	No Response
No. of Hospitals	8	11	26	16	8	11	45	2
% Toward Family	0	3-45	50	55-72	75	80-90	100	
No. of Hospitals	23	26	22	18	4	6	7	5

$ Amount toward Family coverage=$ Amount toward Single coverage
16 Hospitals responded.

D. Disability Insurance Coverage

1. Does the hospital provide disability coverage?

No	Yes	No Response
52	74	1

2. What percentage of the cost is paid by the hospital?

% of Cost	0 or Not Available	50	66-70	100	No Response
No. of Hosp.	65	2	4	51	5

3. How long must an employee be employed before he is eligible?

No. of Weeks	No Requirement or Not Available	4-12	18-24	26-36	52	More Than 52	No Response
No. of Hosp.	66	36	11	2	7	2	3

4. Are part time employees eligible and if so, how many hours per week must they work?

No. of Hours/Week	Not Eligible or No Minimum	1-16	20	21-32
No. of Hospitals	97	3	19	8

5. What percent of salary does the plan provide?

% of Salary	Less Than 50	50	60	65-90	100	Not Based on Salary	0, or No Plan	No Response
Non-exempt	1	7	16	11	2	5	74	11
Exempt	1	5	22	11	3	6	70	9
Department Heads	1	8	23	21	7	6	54	7
Administrators	1	6	21	23	8	6	56	6

6. How long may an employee collect benefits per incident?

No. of Weeks	No Plan	20 or less	24-26	52	more than 52	rest of life	No Response
Non-exempt	75	9	8	9	4	13	9
Exempt	71	9	6	9	5	20	7
Department Heads	54	7	7	9	6	39	5
Administrators	56	7	4	7	7	41	5

7. On what day of injury or illness does disability take effect?

Day	No Plan	1	2	3	4	5-23	30-61	90 or more	No Response
Illness	56	3	2	5	15	9	13	22	2
Injury	54	17	-	5	7	6	13	23	2

E. Sick Pay

1. What day of illness does sick pay begin?

Day	0, or No Plan	1	2	3	4	No Response
No. of Hospitals	11	79	20	2	7	8

2. What percent of salary is provided?

% of Salary	0, or No Plan	60	75	100	No Response
No. of Hospitals	12	3	2	98	12

3. How many sick days per year are earned?

Days/Year	0	2-7	9-10	12-13	14-15	18-20	20+	No Response
No. of Hosp.	11	8	8	81	2	2	5	10

4. If sick days are granted what is the maximum accumulation allowed?

No. of Days	No Accumulation or No Minimum	4-10	15-20	21-30	31-40	40+	No Max.	No Resp.
Non-exempt	16	3	3	28	12	44	15	4
Exempt	18	3	2	25	29	25	18	6
Department Heads	18	3	3	26	11	42	19	5
Administrators	19	3	3	25	11	38	20	8

5. Do part time employees receive paid sick days, and if so, what is the minimum number of hours they must work to be eligible?

No. of Hours	Not Eligible or No Minimum	1-8	15-16	20-30	No Weekly Minimum	No Response
No. of Hosp.	59	6	4	40	2	6

6. Can employees receive pay for any accumulated sick days not used?

No	106
Yes, all	2
Yes, part	6
Yes, upon retirement	12
No Response	1

7. Does the hospital grant sick pay for days lost due to pregnancy?

No	83
Accumulated Sick Leave Only	37
Medical Disability Only	2
Specified No. of Days	3
No Limit	1
No Response	1

F. Leave of Absence

1. How long must an employee be employed before he can request a leave of absence?

No. of Months	No Min.	1-3	6	12	12+	No Policy	Supervisor's Discretion	No Response
No. of Hosp.	19	30	27	36	4	3	7	1

2. What is the maximum time an employee may be on a leave of absence?

No. of Months	No Policy	1-3	4-6	10-12	12+	No Limit	Discretion	No Resp.
Non-exempt	1	23	33	27	7	4	30	2
Exempt	1	19	30	30	7	5	30	5

3. Is the right to return to your job guaranteed?

No	Yes
9	118

G. Pension

1. Is there an employee pension plan?

No	Yes
24	103

II. Tabulation of Fringe Benefit Survey: Responses to Telephone Follow-Up

Note: Those hospitals not responding to the mailed questionaire were contacted by telephone. The telephone follow-up was somewhat abbreviated. There are 36 responses to this survey, tabulated below.

A. Vacation

1. How many weeks of vacation are granted to the average employee after one year of service?

No. of Weeks	1	2	No Response
No. of Hospitals	9	21	6

2. Do part time employees receive vacation, and if so, how many hours per week must they work to be eligible?

Hours/ Week	Not Eligible or No Minimum	4	20-26	No Response
No. of Hospitals	25	1	4	6

3. Is pay in lieu of vacation granted?

	Yes, full	Yes, part	No	No Response
No. of Hospitals	4	3	19	10

4. May vacation time be used for an extended illness?

	Yes	No	No Response
No. of Hospitals	24	5	7

B. Life Insurance

1. Is life insurance available?

	No	Full Cost Paid by Hospital	Shared Cost	No Response
No. of Hospitals	17	7	6	6

2. How long must an employee work to be eligible?

No. of Months	No Plan or No Minimum	2-6	12	24	No Response
No. of Hospitals	22	2	4	2	6

3. Are part time employees eligible for life insurance, and if so, how many hours per week must they work to be eligible?

No Minimum, or Not Eligible	29
20 Hours/Week	1
No Response	6

C. Health Insurance

1. Is health insurance available?

	No	Yes	No Response
Hospitalization	5	20	11
Surgical	7	18	11
Major Medical	5	20	11

2. What percent of cost is paid by the hospital?

% for Single Coverage	100% or Not Available	40-50	66-82	No Response
No. of Hospitals	18	7	3	8

% for Family Coverage	100% or Not Available	22-50	54-66	No Response
No. of Hospitals	19	7	3	7

D. Disability Insurance

1. Is disability insurance available, and if so, what percent of cost is paid by the hospital?

0, or Not Available	24
Less than 100%	3
100%	3
No Response	6

2. What percent of the salary is maintained?

0, or Not Available	6
60%-90%	6
90%	17
No Response	6

E. Sick Pay

1. How many sick days per year are earned?

Days/ Year	0	10-11	20	more than 20	No Response
No. of Hospitals	2	11	2	15	6

2. Is sick pay granted for days lost due to pregnancy?

No	Yes	No Resp.
9	10	17

F. Leave of Absence

1. What is the maximum time allowed for a leave of absence?

No. of Months	0 or No Policy	3	6	12	Supervisor's Discretion	No Response
No. of Hospitals	2	3	5	11	9	6

III. Hospital Maternity Leave Survey: Mailed Questionnaire

Note: This survey was conducted in August 1973. There were 84 hospitals responding to the mail questionnaire. Tabulations are shown below.

1. Total number of hospital employees:

No. of Employees	1-100	101-200	201-300	301-500	501-800	801 and above	No Response
No. of Hospitals	11	29	9	9	10	17	2

Mean Number of Employees: 446
Median Number of Employees: 211

2. Total number of female employees:

No. of Female Employees	1-100	101-200	201-300	301-500	501-800	801 and above	No Response
No. of Hospitals	15	28	10	4	13	10	4

Mean Number of Female Employees: 354
Median Number of Female Employees: 190

3. Number of full and part time female employees in each of the following job categories and agegroups:

	No. of Female Employees							
Nursing Personnel Age	0	1-10	11-20	21-40	41-60	Over 60	No Response	Mean No. of Female Employees
15-19, Full Time	19	47	7	-	-	-	11	4
15-19, Part Time	17	52	5	2	-	-	11	4
20-24, Full Time	4	24	15	11	4	15	11	28
20-24, Part Time	6	41	14	9	3	1	11	12
25-29, Full Time	3	43	10	6	7	4	11	16
25-29, Part Time	3	43	11	12	3	1	11	13
30-39, Full Time	1	36	18	11	2	3	11	15
30-39, Part Time	1	36	11	16	5	4	11	18
40 and over, Full Time	-	8	20	21	9	15	11	37
40 and over, Part Time	1	20	20	20	10	2	11	23
Office Personnel								
15-19, Full Time	39	34	-	-	-	-	11	1
15-19, Part Time	41	31	1	-	-	-	11	1
20-24, Full Time	12	47	5	3	1	-	11	7
20-24, Part Time	31	39	3	-	-	-	11	3

	0	1-10	11-20	21-40	41-60	Over 60	No Response	Mean No. of Female Employees
Office Personnel (cont.)								
25-29, Full Time	25	36	5	2	-	-	11	5
25-29, Part Time	33	38	2	-	-	-	11	2
30-39, Full Time	17	49	7	-	-	-	11	4
30-39, Part Time	28	40	5	-	-	-	11	4
40 and over, Full Time	4	44	11	11	4	-	11	12
40 and over, Part Time	22	41	9	1	-	-	11	5
Technical Personnel								
15-19, Full Time	55	17	-	-	-	-	12	1
15-19, Part Time	62	10	-	-	-	-	12	0
20-24, Full Time	17	42	8	3	2	-	12	6
20-24, Part Time	43	28	1	-	-	-	12	1
25-29, Full Time	1[illegible]	40	10	3	-	-	12	4
25-29, Part Time	2[illegible]	43	1	-	-	-	12	1
30-39, Full Time	21	48	2	1	-	-	12	3
30-39, Part Time	28	44	-	-	-	-	12	2
40 and over, Full Time	14	11	4	3	-	-	12	4
40 and over, Part Time	39	33	-	-	-	-	12	2
Service Personnel								
15-19, Full Time	37	34	1	-	-	-	12	1
15-19, Part Time	21	39	7	4	1	-	12	6
20-24, Full Time	25	43	4	-	-	-	12	3
20-24, Part Time	36	31	5	-	-	-	12	2
25-29, Full Time	38	31	3	-	-	-	12	2
25-29, Part Time	50	22	-	-	-	-	12	1
30-39, Full Time	20	48	4	-	-	-	12	3
30-39, Part Time	35	37	-	-	-	-	12	1
40 and over, Full Time	1	29	19	12	60	5	12	20
40 and over, Part Time	15	42	11	4	-	-	12	7
Professional Personnel								
15-19, Full Time	71	2	-	-	-	-	11	0
15-19, Part Time	71	2	-	-	-	-	11	0
20-24, Full Time	50	23	-	-	-	-	11	1
20-24, Part Time	67	6	-	-	-	-	11	0
25-29, Full Time	50	23	-	-	-	-	11	1
25-29, Part Time	61	12	-	-	-	-	11	0
30-29, Full Time	49	[illegible]4	-	-	-	-	11	1
30-29, Part Time	52	21	-	-	-	-	11	1
40 and over, Full Time	30	42	-	-	-	-	11	2
40 and over, Part Time	41	31	-	-	-	-	12	1

	0	1-10	11-20	21-40	41-60	Over 60	No Response	Mean No. of Female Employees
Miscellaneous Personnel								
15-19, Full Time	66	6	-	-	-	-	12	0
15-19, Part Time	61	10	-	1	-	-	12	1
20-24, Full Time	59	12	1	-	-	-	12	1
20-24, Part Time	60	4	2	-	-	-	12	1
25-29, Full Time	58	13	1	-	-	-	12	1
25-29, Part Time	63	9	-		-	-	12	1
30-39, Full Time	52	19	1		-	-	12	1
30-39, Part Time	58	13	1	-	-	-	12	1
40 and over, Full Time	24	43	4	2	-	-	11	4
40 and over, Part Time	55	18	-	-	-	-	11	1

4. Does the hospital maintain the following benefits during a sick leave?

	Yes	No	No Response
Pension	45	37	2
Life Insurance	46	36	2
Health Insurance	49	33	2

...during a leave of absence?

Pension	18	64	2
Life Insurance	25	57	2
Health Insurance	13	69	2

5. Does seniority continue to accrue during a sick leave or leave of absence?

	Yes	No	No Response
Sick Leave	72	11	1
Leave of Absence	28	55	1

6. How many quits have you had in the past two years (June 1971-June 1973) when the reason given was pregnancy?

No. of Quits	0	1-5	6-10	11-15	16-25	Over 25	No Response
No. of Hospitals	16	24	17	10	5	5	7

Mean Number of Quits = 7
Median Number of Quits = 6

7. How many maternity leaves have you had in the two year period June 1971-June 1973?

No. of Leaves	0	1-5	6-10	11-15	16-20	21-30	Over 30	No Response
June 1971-June 1972	7	33	10	6	6	8	6	8
June 1972-June 1973	6	20	11	6	9	8	5	8

Mean, 1971-1972 = 12
Mean, 1972-1973 = 12
Median, 1971-1972 = 6
Median, 1972-1973 = 7

8. How many said they would return but actually did not?

No.	0	1-5	6-10	11-15	Over 15	No Response
June 1971-June 1972	34	28	16	3	1	8
June 1972-June 1973	29	43	4	1	1	6

Mean, 1971-1972 = 2
Mean, 1972-1973 = 2
Median, 1971-1972 = 1
Median, 1972-1973 = 1

9. What is the average length of the leave for those returning?

No. of Weeks	No Leaves	3-6	8-12	14-18	19-24	Over 24	No Response
No. of Hospitals	7	11	25	28	14	2	7

Mean No. of weeks = 12
Median No. of weeks = 12

10. How many returned only temporarily (one month or less)?

No.	0	1	2	3	4	6	9	No Response
No. of Hospitals	51	8	9	1	3	1	1	10

11. If a health insurance plan is available through your hospital, does it cover maternity?

No plan	1
No	1
Yes	63
Optional	15
No Response	4

There may be some confusion in this response. Hospitals may have responded positively if maternity coverage is available at an additional cost to the employer.

12. If a temporary disability insurance policy is available through your hospital does it cover absences due to pregnancy?

No	38
Yes	4
Not Available	36
No Response	6

IV. Maternity Leave Survey Tabulation: Telephone Follow-up

Note: Hospitals not responding to the mail questionnaire were contacted by telephone. There were 79 hospitals responding to the abbreviated telephone follow-up survey. Tabulations are shown below.

1. Total number of hospital employees:

Total number	1-100	101-200	201-300	301-500	501-800	Over 800	No Response
No. of Hospitals	19	19	8	6	6	10	11

Mean = 337
Median = 231

2. Total number of female employees

No. of Female Employees	1-100	101-200	201-300	301-500	501-800	Over 800	No Response
No. of Hospitals	20	19	8	5	8	3	16

Mean number of female employees = 267
Median number of female employees = 204

3 Number of full and part time employees in the following age and occupation groups.

No. of Female Employees	0	1-10	11-20	21-40	41-60	Over 60	No Response	Mean No. of Female Employees
Nursing Personnel								
Under 25	1	9	7	7	4	7	44	43
25-40	-	7	6	2	6	14	44	63
40 and over	2	8	6	6	6	7	44	35
Office Personnel								
Under 25	25	6	4	-	-	-	44	2
25-40	24	7	2	1	-	1	44	4
40 and over	25	2	7	2	1	-	44	3

No. of Female Employees	0	1-10	11-12	21-40	41-60	Over 60	No Response	Mean No. of Female Employees
Technical Personnel								
Under 25	33	2	-	-	-	-	44	0
25-40	31	3	1	-	-	-	44	1
40 and over	31	4	-	-	-	-	44	0
Service Personnel								
Under 25	30	4	1	-	-	-	44	1
25-40	17	2	1	-	-	-	59	2
40 and over	29	4	2	-	-	-	44	2
Professional Personnel								
Under 25	30	4	-	-	-	-	45	0
25-40	30	3	-	1	-	-	45	1
40 and over	31	2	1	-	-	-	45	1

4. Does the hospital maintain the following benefits during a sick leave?

	Yes	No	No Response
Pension	31	36	12
Life Insurance	29	38	12
Health Insurance	47	20	12
...during a leave of absence?			
Pension	11	56	12
Life Insurance	18	49	12
Health Insurance	28	38	13

5. Does seniority continue to accrue during a sick leave or leave of absence?

	Yes	No	No Response
Sick Leave	55	10	14
Leave of Absence	33	30	16

6. How many quits have you had in the past two years (June 1971-June 1973) when the reason given was pregnancy?

No. of Quits	0	1-5	6-10	11-15	16-25	Over 25	No Response
No. of Hospitals	17	25	7	1	2	3	23

Mean No. of Quits = 5
Median No. of Quits = 2

V. Wage Coefficient of Variation by Occupation

Available from mailed survey, returned by 84 hospitals, as of August, 1973.

Occupation	Coefficient of Variation
Nurse, degree	
Base	.076
Max.	.072
Ave.	.076
Nurse, Diploma	
Base	.079
Max.	.087
Ave.	.070
Nurse, LPN	
Base	.110
Max.	.098
Ave.	.088
Med. Technician	
Base	.126
Max.	.118
Ave.	.098
Dietician	
Base	.166
Max.	.087
Ave.	.119
X-Ray Technician	
Base	.153
Max.	.108
Ave.	.129
Pharmacist	
Base	.112
Max.	.099
Ave.	.068
Physical Therapist	
Base	117
Max.	.128
Ave.	.117
Nursing Assistant	
Base	.159
Max.	.124
Ave.	.156
Operating Rm. Tech.	
Base	.140
Max.	.134
Ave.	.142

Occupation	Coefficient of Variation
Occuaptional Therapist	
Base	.170
Max.	.146
Ave.	.148
Respiration Therapist	
Base	.214
Max.	.199
Ave.	.179
Respiration Therapist Assistant	
Base	.167
Max.	.162
Ave.	.146
Cert. Occupational Therapi Assistant	
Base	.208
Max.	.180
Ave.	.170
Cert. Lab. Assistant	
Base	.178
Max.	.129
Ave.	.138
Clerk-Typist	
Base	.148
Max.	.134
Ave.	.132
Janitor	
Base	.207
Max.	.194
Ave.	.194
Maid	
Base	.136
Max.	.125
Ave.	.139

VI. Wage Coefficient of Variation by Occupation

Available from phoned survey, 79 hospitals.

Occupation	Coefficient of Variation
Nurses	.114
Technicians	.186
Office	.175

APPENDIX C

Data Used in Calculating the Age and Education Specific Probabilities of Pregnancy

Tables C-1 through C-3 show the number of births by age and education for 1967, 1968, an 1969 estimated from the National Natality Survey. These estimates were calculated by weighting each cell by the proportion of all births in that cell sampled in the survey. These estimates were corrected for illegitimate births using the correction factors shown in the tables. Tables C-4 through C-6 show the number of employed women by age and education for 1967, 1968, and 1969 as reported by the Bureau of Labor Statistics. Tables C-7 through C-9 show the number of births to employed women by age and education in the samples collected in the National Natality Survey for the years 1967, 1968, and 1969. Tables C-10 through C-12 show the estimated probability of pregnancy among employed women by age and education for the years 1967, 1968, and 1969. These probabilities were calculated as follows:

$$p(B/W)_{ij} = \left(\frac{BWS_{ij}}{BS_{ij}}\right)\left(\frac{B_{ij}}{F_{ij}}\right)\left(\frac{F_{ij}}{W_{ij}}\right)$$

Where:

$p(B/W)_{ij}$ = Probability of a birth given employed for age i, education j

BWS_{ij} = Number of births to employed women of age i and education j in the sample

BS_{ij} = Number of births to women of age i, education j in the sample

B_{ij} = Number of births to women of age i, education j in the population

F_{ij} = Number of women of age i, education j in the population

W_{ij} = Number of employed women of age i, education j in the population

The probabilities shown in chapter two are connected for the secular decline in fertility between 1968 and 1973.

Table C-1

Births by Age and Education, 1967*

	Education					
Age	0-8	9-11	12	13-15	16-17	Total
14-19	57320	244980	163199	29206	-	494706
20-24	103333	290271	665761	215144	53056	1327566
25-29	70272	140516	420477	152530	132388	916183
30-34	61762	106528	190835	63799	45438	468361
35-39	42900	45351	106863	19618	20672	235403
40-44	17007	15218	30762	6511	3582	73080
45 +	2441	-	1221	1953	-	5615
Total	355035	842864	1579117	488761	255136	3520959

*These are estimates from the National Natality Survey, corrected for illegitimate births as follows:

$$\frac{\text{Actual Births 1967} - \text{Estimated Births 1967}}{\text{Estimated Births 1967}} = .1035$$

Table C-2

Total Births by Age and Education, 1968*

	Education					
Age	0-8	9-11	12	13-15	16-17	Total
14-19	57321	236726	178972	24694	620	503333
20-24	93033	273956	671942	216045	60451	1315426
25-29	67955	144318	442607	146856	157172	958913
30-34	50939	93473	170343	66715	60523	441992
35-39	29028	35361	84553	23597	20888	193428
40-44	17426	14473	31028	14853	7098	84878
45 +	1233	1125	1233	-	-	3590
Total	316934	799431	1580678	497771	306750	3501564

*These are estimates from the National Natality Survey corrected for illegitimate births, using a correction factor of .1025.

Table C-3

Births by Age and Education, 1969*

	Education					
Age	0-8	9-11	12	13-15	16-17	Total
14-19	62194	220859	180173	11496	-	474721
20-24	94817	293734	670381	240912	72588	1372432
25-29	62802	142519	429724	192393	186613	1014055
30-34	56993	78591	189159	58641	66891	450276
35-39	33942	44287	77723	22215	25795	203961
40-44	14309	9126	17051	3964	5553	50003
45 +	2580	-	990	1982	-	5552
Total	327636	789116	1565201	531603	357444	3571000

*Estimated from the National Natality Survey, correcting for illegitimate births using a factor of .1015.

Table C-4

Female Employment by Age and Education, 1967

Age	Education 0-8	9-11	12	13-15	16 +	Total 18 & over
18-19	57575	396960	1013320	179305	-	1645000
20-24	299364	487126	1972732	817494	419666	3838000
25-34	427230	868701	2254858	569640	631351	4747000
35-44	873000	1187280	2630640	570360	209520	5829000
45-54	1287880	1106406	2376724	544422	544422	5854000
55-64	1270490	71630	1006590	373230	403390	3770000
65 +	422282	166383	191681	94381	96227	973000
Total 18 +	4476696	4929695	1143156.	3144346	2664700	26647000

Source: Special Labor Force Report No. 92, "Educational Attainment of Workers," Monthly Labor Review, March 1967.

Table C-5

Female Employment by Age and Education, 1968

	Education					
Age	0-8	9-11	12	13-15	16 +	Total 18 & over
18-19	78430	368280	1074150	177320	1705	1705000
20-24	160563	415817	2103787	955144	485806	4117000
25-34	415002	926163	2358426	647808	713601	5061000
35-44	843843	1197903	2661351	584199	613704	5901000
45-54	1295956	1094227	2598025	556282	568509	6113000
55-64	1212372	740894	1160866	392238	451668	3962000
65 +	432306	143115	217140	106596	86856	987000
Total 18 +	4455360	4900896	12168702	3425058	2923830	27846000

Source: Special Labor Force Report No. 103, "Educational Attainment of Workers, March 1968," Monthly Labor Review, February 1969.

Table C-6

Female Employment by Age and Education, 1969

	Education					
Age	0-8	9-11	12	13-15	16 +	Total 18 & over
18-19	38065	395545	1004585	215150	1655	1655000
20-24	182160	469062	2377188	1042866	491832	4554000
25-34	341312	954607	2554507	661292	821282	5333000
35-44	823760	1165032	2712524	570748	611936	5884000
45-54	1177726	1152534	2802610	604608	554224	6298000
55-64	1245806	697976	1306676	373336	434206	4058000
65 +	491064	150416	248850	119448	95116	1106000
Total 18 +	4304312	4997624	12999600	3582112	3004352	28888000

Source: Special Labor Force Report 125, "Educational Attainment, March, 1969" Monthly Labor Review, 1970.

Table C-7

Number of Births to Employed Women in Sample by Age and Education, National Natality Survey, 1967

	Education					
Age	0-8	9-11	12	13-15	16-17	Total
14-19	13	79	83	17	0	192
20-24	26	101	336	117	44	624
25-29	18	43	134	66	65	326
30-34	19	44	62	22	20	167
35-39	13	16	26	8	9	72
40-44	6	5	10	1	0	22
45 and over	1	0	0	2	0	3
Total	96	288	651	233	138	1406

Source: National Natality Survey

Table C-8

Number of Births to Employed Women in Sample by Age and Education, National Natality Survey, 1968

	Education					
Age	0-8	9-11	12	13-15	16-17	Total
14-19	9	87	103	18	1	218
20-24	26	98	320	121	40	605
25-29	29	58	175	88	100	450
30-34	17	42	62	24	23	168
35-39	11	17	27	10	6	71
40-44	4	8	11	3	5	31
45 and over	0	0	1	0	0	1
Total	96	310	699	264	175	1544

Table C-9

Number of Births to Employed Women in Sample by Age and Education, National Natality Survey, 1969

	Education					
Age	0-8	9-11	12	13-15	16-17	Total
14-19	8	68	88	6	0	170
20-24	33	121	343	148	43	688
25-29	15	56	174	77	89	411
30-34	18	34	62	15	22	151
35-39	15	22	23	14	12	86
40-44	10	5	9	1	1	26
45 and over	0	0	0	1	0	1
Total	99	306	699	262	167	1533

Source: National Natality Survey

Table C-10

Probability of Pregnancy Among Employed Women, 1967

Age	Education 0-8	9-11	12	13-15	16-17	Total
20-24	.0787	.1928	.1705	.1495	.1115	.1601
25-34	.0789	.0906	.0898	.1622	.1408	.0827
35-44	.0210	.0166	.0141	.0153	.0417	.0159
45-54	.0009	-	-	.0036	-	.0006
Total (20-54)	.0281	.0527	.0627	.0901	.0661	.0594
Total (20 +)	.0034	.0425	.0555	.0759	.0537	.0482

Table C-11

Probability of Pregnancy Among Employed Women, 1968

	Education					
Age	0-8	9-11	12	13-15	16-17	Total
20-24	.0607	.2219	.1582	.2008	.0905	.1500
25-34	.1030	.0962	.0188	.1663	.0125	.1172
35-44	.0176	.0193	.0151	.0244	.0173	.0411
45-54	-	-	.0005	-	-	.0002
Total (20-54)	.0304	.0587	.0635	.0924	.0723	.0620
Total (20 +)	.0199	.0452	.0548	.0828	.0590	.0356

Table C-12

Probability of Pregnancy Among Employed Women, 1969

	Education					
Age	0-8	9-11	12	13-15	16-17	Total
20-24	.1847	.2534	.1439	.1407	.0920	.1504
25-34	.0858	.0814	.0919	.1403	.1393	.1023
35-44	.0680	.0196	.0112	.0246	.0196	.0171
45-54	-	-	-	.0008	-	.000002
Total (20-54)	.0228	.0583	.0581	.0887	.0692	.0603
Total (20 +)	.0197	.0476	.0506	.0758	.0570	.0489

APPENDIX D

Additional Regression Results Using Hospital Data

The discussion in Chapter Five uses the regression results involving degree nurse, average monthly wage, and diploma nurse, average monthly wage, from the primary data set of hospital data as its focal point. All of the analyses discussed there was also performed on four other wage rates available in the primary data set. They are: 1) LPN, average monthly wage; 2) nursing assistant, average monthly wage; 3) clerk-typist, average monthly wage; 4) maid, average monthly wage. In general, the discussion in Chapter Five is applicable to these regressions as well.

In addition to the average monthly wages, starting monthly wages and maximum monthly wages are also available for the primary data set. The wage-effect analysis was also performed for these wages. Results are similar to those using average monthly wages. Results are not shown here, but simple correlation coefficients between wages within occupations are shown.

Finally, the results of the analysis using the secondary data set are shown in this appendix. There are two wage rates used: 1) average hourly wages for clerical personnel and 2) average hourly wages for nursing assistants. Results of the wage effect and substitution effect analysis are shown.

Table D-1

Definition of Independent Variables

I = Intercept

Fringe Benefit Variables (F)

VAC = Number of weeks of vacation

SD = Number of days of compensated sick days

HOS = Hospitalization insurance: 1 if provided, 0 otherwise

MM = Major medical insurance: 1 if provided, 0 otherwise

LIFE = Life insurance: 1 if provided, 0 otherwise

LTD = Long-term disability insurance: 1 if provided, 0 otherwise

PEN = Pension plan: 1 if provided, 0 otherwise

Maternity Leave Variables

MAT = Maternity leave treated as a temporary disability: 1 if provided, 0 otherwise

MATP = Maternity leave-age distribution interaction term: MAT * P

P = Age distribution term: proportion of nurses ages 17 to 39

Control Variables (C)

POP = Natural logarithm of population of city in which hospital is located

RENT = Median rental value of housing in city in which hospital is located

U = Union variable: 1 if present, 0 otherwise

BEDS = Beds per nursing personnel (used in secondary data set only)

Table D-2

Simple Correlation Coefficients Between Wage Rates by Occupation Group, Primary Hospital Data Set

		Base Monthly Wage	Maximum Monthly Wage	Average Monthly Wage
Degree Nurse	Base	1.000	.238	.532
	Max.		1.000	.861
	Ave.			1.000
Diploma Nurse	Base	1.000	.586	.777
	Max.		1.000	.863
	Ave.			1.000
LPN Nurse	Base	1.000	.759	.915
	Max.		1.000	.895
	Ave.			1.000
Nursing Asst.	Base	1.000	.842	.937
	Max.		1.000	.921
	Ave.			1.000
Clerk-Typist	Base	1.000	.705	.910
	Max.		1.000	.807
	Ave.			1.000
Maid	Base	1.000	.897	.949
	Max.		1.000	.945
	Ave.			1.000

Table 5-3

Estimated Regression Coefficients, Wage Effect, Hospitals, Primary Data Set[1]

Dependent Variable[2]	I	MAC	SY	TOS	TEI	LIFE	LTD	PEN	MAT	MATP	P_{17-39}	POP	RENT	U	N	R^2	F-Value
LPN	488.90	-22.03 (-3.93)**	.06 (.14)	7.37 (.17)	14.56 (.79)	15.67 (1.15)*	-9.70 (.78)	-5.63 (.35)	-142.84 (-2.89)**	237.09 (3.10)**	-184.19 (3.33)**	7.30 (1.79)*	1.16 (2.94)**	11.19 (.88)	43	.68	4.97
Nursing Asst.	257.94	-9.54 (1.40)	.50 (1.00)	-21.15 (.39)	-3.33 (.15)	17.86 (1.08)	-2.14 (.24)	-17.21 (.37)	-84.32 (1.41)	158.99 (1.71)*	-59.13 (.88)	6.23 (1.26)	1.34 (2.79)**	2.29 (.14)	43	.62	3.59
Clerk-Typist	281.71	-2.69 (.36)	-.06 (.18)	31.70 (.44)	-7.87 (.32)	-14.92 (.78)	29.15 (1.59)	-4.65 (.18)	-42.58 (.53)	81.45 (.67)	-139.16 (1.76)*	5.56 (1.02)	1.19 (2.25)**	22.14 (1.29)	43	.46	1.87
Paid	227.55	-7.56 (.94)	.11 (.13)	10.48 (.14)	-.62 (.02)	23.44 (1.10)	-16.80 (.81)	8.22 (.29)	-57.02 (.66)	125.83 (.97)	-74.06 (.89)	7.58 (1.30)	.01 (2.32)**	11.32 (.73)	40	.54	2.39

[1]Equation Estimated: $I = \beta_0 + \beta F + \gamma C + \varepsilon$

[2]Average Monthly Wages

Table D-4

Estimated Regression Coefficients, Wage Effect, Secondary Data Set

	I	VAC	SO	HOS	SOR	MM	LIFE	PEN	MAT	POP	RENT	U	BED	N	R^2	F
Nursing Personnel	3.05	.09 (1.30)	-.01 (.21)	-.14 (.49)	.29 (1.06)	.06 (.37)	.16 (.98)	-.07 (.49)	.06 (.42)	.01 (.13)	.01 (1.52)	-.08 (.42)	.23 (3.45)**	55	.45	2.99
Office Personnel	1.13	.13 (2.37)**	-.01 (.95)	.07 (.27)	-.01 (.06)	.03 (.53)	.03 (.22)	.13 (1.13)	.07 (.63)	-.01 (1.39)	.01 (2.67)**	-.19 (1.24)	.27 (4.29)	55	.51	3.60

**Significant at 5% level

Table D-5

Simple Correlation Coefficients Between Fringe Benefits Secondary Hospital Data Set

	VAC	SD	HOS	SUR	MM	LIFE	DEN	MAT
VAC	1.000	.026	.006	.008	.064	-.165	.21[illegible]	-.137
SD		1.000	.172	.203*	-.074	.097	.304*	-.212*
HOS			1.000	.638*	.049	-.052	.012	-.207*
SUR				1 000	.152	.208*	-.234*	-.075
MM					1.000	-.021	-.008	.081
LIFE						1.000	.196	.335*
DEN							1.000	-.005
MAT								1.000

*Significantly different from zero at 5% level

Table D-6

Estimated Regression Coefficients, Substitution Effect,
Secondary Hospital Data Set

Independent Variables

Dependent Variable	I	VAC	SD	HOS	SUR	MM	LIFE	PEN	MAT	R^2	F
VAC	2.027	-	-.002 (.82)	.182 (.76)	-.343 (.54)	.212 (.57)	-.386 (1.16)	.505 (1.79)*	-.156 (.53)	.10	.78
SD	-2.143	-.459 (.83)	-	-.339 (.04)	9.29 (1.15)	-3.17 (.58)	6.54 (1.34)	7.64 (1.83)*	-7.59 (1.80)*	.201	.69
HOS	.402	.010 (.30)	-.000 (.04)	-	.598 (6.01)**	-.031 (.35)	.130 (1.66)*	-.071 (1.04)	-.124 (1.83)*	.47	6.03
SUR	.186	-.024 (.62)	.003 (1.15)	.728 (6.01)**	-	.110 (1.14)	-.219 (2.65)**	.103 (1.37)	.108 (1.43)	.5[illegible]	7.35
MM	.641	.033 (.58)	-.002 (.58)	-.084 (.35)	.246 (1.14)	-	.028 (.21)	-.025 (.22)	.046 (.40)	.05	.35
LIFE	.687	-.073 (1.16)	.006 (1.34)	.429 (1.66)*	-.595 (2.65)**	.034 (.21)	-	.137 (1.10)	.335 (2.84)**	.27	2.52
PEN	.150	.127 (1.79)*	.009 (1.83)*	-.314 (1.04)	.373 (1.37)	-.040 (.22)	.183 (1.10)	-	.010 (.07)	.19	1.53
MAT	.385	-.0[illegible] (.53)	-.009 (1.80)*	-.540 (1.84)*	.385 (1.43)	.073 (.40)	.438 (2.84)**	.010 (.06)	-	.24	2.15

*Significant at 10% level
**Significant at 5% level

BIBLIOGRAPHY

Allen, Donna, Fringe Benefits: Wages or Social Obligation, Ithaca, New York, New York School of Industrial and Labor Relations, 1969.

American Hospital Association, Guide to Hospitals, various issues.

_____ Hospital Statistics, 1971, Chicago (1972).

Baens, Maria, "Women Workers & Home Responsibilities", International Labor Review, 69: 338-355 (1954).

Bailley, William R. and Schwenk, Albert E., "Employer Expenditures for Private Retirement and Insurance Plans", Monthly Labor Review, 95: 17-19 (July, 1972).

Bauman, Alvin, "Measuring Employee Compensation in U.S. Industry", Monthly Labor Review, 93: 17-19 (October, 1970).

Becker, Gary S., Human Capital, New York, Columbia University Press, 1964.

Belloc, N. B., "Labor Force Participation & Employment Opportunities for Women", Journal of the American Statistical Associations 45 (September, 1950).

Bressenden, P.F., "Labor Mobility and Employee Benefits", Labor Law Journal, 6: 726-768 (November, 1955).

Brittain, John A., "The Incidence of Social Security Payroll Taxes", American Economic Review (March, 1971).

Bowen, William G. and Finegan, T. A., The Economics of Labor Force Participation, Princeton, Princeton University Press, 1969, Chapters 5-7.

Bureau of Labor Statistics, Area Wage Surveys, various issues.

_____ "Educational Attainment of Workers", Special Labor Force Reports, Nos. 92, 103, 125.

_____ Employee Compensation and Payroll Hours, 1968, Reports 335-1 to 335-11.

_____ Employee Compensation in the Private Non-farm Economy, Ball .1722, 1971.

Cohen, Malcolm S., "Married Women in the Labor Force: An Analysis of Participation Rates", Monthly Labor Review, (October, 1969).

Current Estimates From the Health Interview Survey, Health Resources Administration, HRA 74-1512, September, 1973.

Ehrenberg, Ronald, Fringe Benefits and Overtime Behavior, Lexington, Mass., D.C. Heath and Co., 1971.

Greenwald, Carol, "Maternity Leave Policy," New England Economic Review, Federal Reserve Bank of Boston, (January/February, 1973).

Gutwillig, Jacqueline G., Address before the Conference of Interstate Association of Commissions on the Status of Women, St. Louis, June 19, 1971.

Hayden, Trudy, Punishing Pregnancy: Discrimination in Education, Employment and Credit, ACLU Reports, Women's Rights Project, October, 1973.

Hoel, Paul, Introduction to Mathematical Statistics, New York, John Wiley and Sons, 1962.

Kiser, Clyde V., Grabell, Wilson H. and Campbell, Arthur A., Trends and Variations in Fertility in the United States, Cambridge, Harvard University.

Kmenta, Jan, Elements of Econometrics, New York, MacMillan Co., 1971.

Kolodrubetz, Walter W., "Two Decades of Employee-Benefit Plans, 1950-70: A Review," Social Security Bulletin 35: 10-22, (April, 1972).

Kurzyrowski, Adam, Continuity of Employment and Maternity, Panstwowe Wydawncito Ekonomiozne, Central School of Planning and Statistics in Warsaw, Warsaw, Poland, 1967.

Lebergott, Stanley, "Population Change and the Supply of Labor," in Demographic and Economic Change, National Bureau of Economic Research, Princeton: Princeton University Press, 1960.

Mabry, Bevars, "The Economics of Fringe Benefits", Industrial Relations 12:1. February, 1973, pp. 95-106.

Mincer, Jacob, "The Labor Force Participation of Married Women", in Aspects of Labor Economics, a conference of the universities--National Bureau Committee for Economic Research Princeton: Princeton University Press, 1962.

_____ "On the Job Training: Costs, Returns and Implications," Journal of Political Economy, Supp. (October, 1962).

National Manpower Council, Womenpower, New York, 1957.

Oi, Walter, "Labor as a Quasi-Fixed Factor," Journal of Political Economy, 70: 538-555 (December, 1972).

Piotrowski, Jerzy, Family Needs Resulting from an Increased Employment of Married Women; Adequacy of Existing Resource to Meet These Needs, Katedra Socjologic Pracy Instytutu Gospodarstwa Spolecznego, Institute of Social Economy, Warsaw, Poland, January 1969.

Rees, Albert, "On Equilibrium in Labor Markets", Journal of Political Economy, 78: 306-310, (March/April, 1970).

Rice, Robert G., "Skill, Earnings and the Growth of Wage Supplements," American Economic Review, 56: 583-593 (May, 1966).

Ridley, Jeanne Clare, "Number of Children Expected in Relation to Non-Failial Activities of the Wife," Milbank Memorial Fund Quarterly, July 1959, Vol. 37, pp. 227-296.

Rosen, Sherwin, "Short-Run Employment Variations on Class I Railroads in the U.S. 1947-63," Economica 37 (December, 1963).

Shister, J., "Labor Mobility, Some Institutional Aspects," Industrial Relations Research Association, Proceedings of the Third Annual Meeting, Chicago 1950, 42-59.

Sweet, James A., "Labor Force Reentry by Mothers of Young Children", Social Science Research, 1:2 (June, 1972).

Talbot, Joseph E., "An Analysis of 1968 Changes in Wages and Benefits," Monthly Labor Review, 92: 43-48 (July, 1969).

Westoff, Charles F., Potter, Robert G, Sagi, Phillip C., and Mishler, Elliot G., Family Growth in Metropolitan America, Princeton: Princeton University Press, 1961.

Willis, E. S., and Kaimer, F. R., "Employee Benefit Options," Industrial Relations Research Associations Procedures, 1968.