

Predicting the Effects of Comparable Worth Programs on Female Labor Supply

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Economists have devoted considerable effort to analyzing wage effects on labor supply behavior. This research has broad policy implications since many government tax and transfer programs alter the wage rates that workers receive, or alter their perception of the value of the wages received. Comparable worth programs are explicitly intended to alter the wage rates of working women. Accepted theories in labor economics of how the female labor supply is affected by the wage offers that women receive are surveyed in this paper, and the implications concerning expected effects of comparable worth wage adjustments on female labor supply are summarized. Then available empirical evidence bearing on the theory of female labor supply is examined, and the stated implications for comparable worth programs are qualified.

Economists view labor markets in terms of supply and demand effects, much as they view the markets for commodities. The demand for labor is seen as originating with employers in response to the price of labor (wage rates) and other factors of production as well as the demand for the goods produced. Individuals are seen as offering, or supplying, their labor in varying amounts depending on the wage offers received from employers as well as various factors affecting their individual valuations of time spent in activities other than market work.

In this paper, the theoretical consideration of labor supply effects is limited to theories advanced by economists, but we have tried to present this material in

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a manner that will be helpful to noneconomists. Also, this paper ignores possible effects of comparable worth programs other than changes in female labor supply behavior (for a discussion of some of these other possible effects, see Nakamura & Nakamura, 1989a). Nevertheless, the theoretical concepts and empirical results discussed should be useful to those who wish to broaden the analysis to include other possible effects, or those who wish to consider the labor supply effects of comparable worth programs from other theoretical perspectives.

Comparable Worth Programs

Critics and advocates of comparable worth programs have differing views as to the extent and nature of the wage changes that can be brought about in this way. The jobs for which wage rates are set in a comparable worth program are sometimes referred to as covered jobs. There is general agreement that comparable worth programs, by design, will raise the wage rates of women in those historically low-paying, female-dominated jobs that are covered. Some supporters of the comparable worth approach such as Bergmann argue that, due to competitive pressures in labor markets, these programs will also raise the wage rates of women in similar sorts of uncovered jobs. Bergmann (1986, p. 188) claims the following:

If wages are realigned for a significant proportion of employees in the public sector, there will be an effect, through the labor market, on private employers, even if they are legally immune from forced realignment. If private employers fail to raise wages in the women's occupations, they will lose the best women workers to the public sector, which is sizable enough to absorb a considerable proportion of them. In all likelihood there would be some upward readjustment of wages in female occupations by private employers to avoid this.

On the other hand, critics note that standard economic arguments imply that raising wage rates for female workers in certain sorts of jobs in certain occupations should lead to reductions in the demand for these types of labor. Employers are expected to substitute more labor of other types and more capital for the types of labor rendered more expensive by comparable worth wage adjustments.

In an attempt to address these latter concerns, both advocates and critics of comparable worth have sought to learn from the Australian experience. Both sides cite an important study by Gregory and Duncan (1981). These authors concluded that, despite large increases in female wage rates brought about by equal pay and comparable worth legislation, the employment of Australian women has continued to grow faster than for men and the unemployment of women has continued to fall relative to male unemployment. They claim that equal pay legislation in the U.K. has also yielded large increases in female pay with little employment loss. Critics of comparable worth draw different conclusions from the Gregory and Duncan study. For instance, Killingsworth (1985, p. 106) concluded that "the cumulative effects of the [Australian comparable worth]

policy served to reduce the rate of growth of women's employment, relative to that of men, by almost one-third."

The differences in the conclusions drawn from the Gregory and Duncan study come from differences in the emphasis placed on various aspects of the empirical evidence presented. Despite these differing views, however, there is general agreement that *wage changes are the primary expected effect* of comparable worth programs.

Against this background, this paper explores economic theories and empirical evidence concerning changes in female labor supply that might result from comparable worth wage changes, ignoring or apart from possible effects on the general patterns of demand for female labor. The dimensions of labor supply considered are the probability that a woman will be employed during a year, and her hours of employment in the year if she is employed.

Hypothesized Wage Effects on the Labor Supply of Women

The Theoretical Context

Most mainstream economists view the labor supply behavior of women within the factual context that the majority of women marry and bear and rear children, and within the theoretical context of the "new home economics." (For an introduction to the "new home economics" see Gunderson & Riddell, 1988, chap. 3. Seminal studies in this area include Becker, 1965, Lancaster, 1966, and Michael & Becker, 1973.) A family is viewed as a small factory producing a single final output called family utility. The "raw materials" and "intermediate products" used in this production process include time, purchased goods and services, and children. It is explicitly recognized that time can be consumed as pure leisure, used to generate money income through market work, combined with market goods and services to produce intermediate products consumed at home (well-behaved children, home-cooked meals, the aesthetic and health benefits of a clean house, and so forth), or combined with market goods and services to enhance future market or home productivity (time spent in taking job-related courses, for instance).

How quickly and well a person can mow a lawn depends in part on the quality of his/her capital equipment—that is, his/her lawn mower. Likewise both market and home productivity also depend on a person's *human capital*: a person's innate abilities, and the knowledge and skills accumulated through formal training and experience. The wage rate a person does or could command (the *market wage*) is viewed by economists as an indicator of (actual or potential) labor market productivity. Market wage rates are observed for those who are employed, but not for those who have no job. The value a person attaches to home-oriented (nonmarket) activities is summarized by the person's *reservation*

wage schedule, defined as the minimum amount, for each possible number of hours of work, that the person would have to be paid to be willing to work one more hour. A person's reservation wage schedule is determined in part by needs for the income the person could earn from a job vs. the needs for the person's services at home. Reservation wage rates cannot be directly observed.

It is presumed a person will be employed if the person's market wage exceeds his/her reservation wage evaluated at zero hours of work. It is presumed that the reservation wage is an increasing function of hours of work. That is, it is presumed that the more hours a person works, the more financial compensation that person will require to be willing to work one more hour. Economic theory predicts that (as nearly as circumstances permit) a person who is employed will choose the number of hours of work at which the person's reservation wage and market wage are equated.

Early Investments in Job-Related Human Capital

Even in childhood, years of schooling, performance at school, the choice of courses, extracurricular activities, and training provided by parents all help build human capital that can lead to higher future productivity on the job or as a homemaker. The actual return on these investments is realized through their use. If the maternal roles of women mean that they usually devote more time to homemaking and less time to market work than most men, the expected cash returns on investments in job-related human capital will be lower for girls than for boys. For this reason, Becker (1981, p. 24) argues that rational parents, and others in society as well, will invest less in the job-related education of girls than of boys. For similar reasons, girls and young women may not be as interested in acquiring job skills as their male counterparts. Mincer and Polachek (1974, p. 404) suggest that

Prospective discontinuity may well influence many young women during their prematernal employment . . . to acquire less job training than men with comparable education If behavior of this sort is widespread, many women will start out their marriages with a comparative disadvantage for market work in terms of the market wage rates they can command versus the market wage rates of their husbands.

Gains From Specialization Within Families

Becker and other economists argue that there are potential gains from intra-family specialization. According to Becker (1981), in an "efficient" husband-wife household, the spouse who can command the higher market wage will be viewed as the primary breadwinner, and most or all of the housework will be done by the other spouse. Job-related training investments that the family chooses to make will usually yield higher returns if the primary breadwinner

receives this training. The relative productivity of the breadwinner will also tend to increase over time because the spouse who does the housework has less time and energy for market work, and hence accumulates less on-the-job experience. Following this line of reasoning, in a family where the husband has the higher market wage at the start of the marriage, it would be expected that he would be the primary breadwinner. Moreover, the gap between the market wage rates of the husband and wife would be expected to widen over time as a result of their time allocation decisions. This is predicted to be the case even if the couple remains childless throughout their marriage.

Reservation Wage Effects on Labor Supply

The reservation wage schedule of a woman is expected to be higher when the needs and desires of her family for her child-related and homemaking services are greater, and when the family's standard of living is higher (the costs of the woman's hometime being her forgone earnings). For example, it is expected that a woman's reservation schedule will tend to be higher the more children she has and the younger they are. As a woman's children mature, the wife's reservation wage schedule is expected to fall again, since older children are more self-sufficient and may also require more purchased goods such as food and clothing and purchased services such as education and entertainment. (See, for instance, Becker, 1981, pp. 26-27, and Heckman, 1974.)

Almost by definition, the higher a woman's reservation wage schedule is relative to her market wage, the less likely she is to be employed, and the lower her expected hours of work will be if she does work outside the home. However, comparable worth programs are not intended to affect the reservation wage schedules of women directly.

Market Wage Effects on Labor Supply

Comparable worth programs are intended to raise the market wage rates of some women. The hypothesized labor supply effects of market wage changes are complex. For a person who is employed, an increase in the market wage rate is thought to have both income and substitution effects. A *substitution effect* is a change in consumption behavior in response to a change in relative prices. If other factors including income could be held fixed, in most cases economic theory predicts that a rise (fall) in the price of a good or service relative to other goods and services will lead a person to consume less (more) of it and to "substitute" increased (decreased) consumption of other goods and services which are now relatively less (more) expensive. An *income effect* is a change in consumption behavior in response to a change in income. If other factors including relative prices could be held fixed, economic theory predicts that an increase

(decrease) in income will lead to increases (decreases) in the consumption of desirable (sometimes called "normal") goods and services.

Labor economists assume that individuals value their off-the-job time, and they often refer generically to all off-the-job time as "leisure." A person's market wage is the per-hour price of this so-called leisure, since this is presumed to be what the person could earn by giving up an hour of off-the-job time to work an extra hour. Thus, increases in a person's market wage are hypothesized to have substitution effects on the person's allocation of time between market work and leisure (increasing the amount of market work). But increases in the market wage will also increase what the person earns for any given number of hours of work, resulting in income effects, which normally are expected to increase the "consumption of leisure" and hence decrease the amount of time devoted to market work (since, by definition, time allocated to leisure represents a reduction in time allocated to market work).

The total change in labor supply in response to a market wage change necessarily involves both substitution and income effects, and the sign and magnitude of this total change will depend on the relative strengths of these substitution and income effects. Because of the way these effects are estimated statistically, the total effect is often referred to as the *uncompensated substitution effect*. The *compensated substitution effect* means the (pure) substitution effect alone.¹

Earnings evaluated at zero hours of work are still zero no matter what a person's market wage is. Hence for a person who is not employed, a market wage change will have only a substitution effect. Hence the labor supply effect of an increase (a decrease) in the market wage of a person who is not employed is expected to be unambiguously positive (negative).

The quality of an estimate of the compensated substitution effect depends on the quality of the estimates of both the uncompensated substitution effect and the income effect. This is one reason why empirical researchers often concentrate on estimates of the uncompensated, rather than the compensated, substitution effect. Another reason for concentrating on estimates of the uncompensated effect

¹There is no way of directly observing either an uncompensated or a compensated substitution effect as these terms are defined theoretically. However, if the effects on hours of work of factors affecting the reservation wage schedule are controlled for statistically in a multiple regression framework, the estimated coefficient of the observed wage rate for a person who is employed can be used as the basis for an estimate of the uncompensated substitution effect. In order to obtain an estimate of the compensated substitution effect, economists often assume the income effect from a market wage change will be the same as the effect of an equivalent change in income not tied definitionally to the amount a person works. For example, the income of a married woman's husband is not definitionally related to her hours of work. Then the wife's estimated labor response to a change in her husband's income may be used to estimate the income effect of a change in her market wage, and the estimated income effect is then used to adjust the total labor supply response so as to obtain an estimate of the compensated substitution effect.

is that the total effect of a market wage change is often what is of interest from a policy perspective. The conceptual decomposition of the total effect of a market wage change (into a compensated substitution effect and an income effect) may be helpful, however, for thinking about why the total effect (the uncompensated substitution effect) may differ systematically in magnitude, or even sign, for different sorts of individuals.

Hypotheses Concerning the Uncompensated Substitution Effect for Married Women

Two lines of argument have been presented to suggest why the uncompensated substitution effect of a market wage change should be positive, and possibly large in magnitude, for a married woman. These same arguments can also be viewed as explaining, in an indirect manner, why estimates of the uncompensated substitution effect for men have typically been close to zero, and often negative in sign.

In the first line of argument, Mincer (1962) suggested that it may be reasonable to view men as dividing their time between market work and leisure, whereas married women divide their time between work in the market, leisure, and work at home (and most women do not desire more work at home, contrary to the case for "leisure"). For a man, Mincer argues that a rise in income will result (through an income effect) in increased consumption of leisure, with a corresponding reduction in labor supply. If a married woman's income increases and she chooses to consume more leisure, however, she can do this either by reducing her hours of market work or by reducing her hours of work in the home by using the extra income to pay for goods and services that are substitutes for her own home production.

According to Mincer, the extent to which women respond to an increase in income by reducing their hours of work inside vs. outside the home will depend on the substitutability between the wife's services in the home and purchased goods and services. The extent of substitutability will differ among families due to differences in preferences and circumstances. For example, day care cannot be substituted for maternal child care if there are no day care centers or if existing centers are full. Such a substitution will also be less feasible if the parents believe maternal care is far superior to other forms of child care. Nor is such a substitution likely to be made if the hourly cost of caring for a woman's children outside the home exceeds her after-tax market wage rate. (This is particularly relevant in a country like the U.S. where many married couples file joint tax returns, and wives often view the tax rate on the first dollar of their earnings as the marginal rate on the last dollar of the husband's earnings.) To the extent that it is not seen as feasible or desirable to substitute purchased goods and services for home

production, a married woman can only increase her leisure by reducing her hours of market work—just as is assumed to be the case for a man. Thus Mincer argued that the negative income effect of a market wage change on the labor supply of married women will be stronger the less the possibilities are for substituting purchased goods and services for home production.

The second line of argument concerning the strength of the income effect for employed wives is much simpler. The dollar value of the change in earned income associated with any given wage change will be larger (smaller) the longer (shorter) the hours of employment are. Following this line of reasoning, when wives are employed less than full time or full year because of child-care and household responsibilities, the income effects associated with any given wage change should be weaker for them than for their husbands, most of whom are employed for longer hours. As already stated, the total effect of a market wage change on the hours of work of an employed person is viewed as the sum of a positive compensated substitution effect and a negative income effect. The weaker the income effect is, the more positive the overall effect is expected to be.

Theoretically Implied Effects of Comparable Worth Wage Adjustments

The theories summarized suggest that comparable worth wage adjustments could substantially affect the female labor supply. Suppose that comparable worth programs lead to upward adjustments in the wage rates for both covered and uncovered jobs in those occupations that have traditionally provided employment for the bulk of the female labor force, and that these wage changes take place in the context of expanding employment opportunities for women. Some of the consequences that might be expected are the following:

1. Employed women who have received wage increases may be less likely to quit for family-related reasons. More specifically, it should take larger upward adjustments in the values these women place on their hometime to cause them to drop out of the work force.
2. Some employed women may choose to invest more in job-related training, since they can expect to receive higher rates of return on these investments in years to come.
3. Some women who have not been employed may enter the labor force because the wage offers they expect to receive now exceed the values they place on their home time.
4. Girls may be more inclined to take job-related courses, and they and their families may decide they should stay in school longer, because of the increased returns on their job-related education that these girls can expect to receive as adults.

5. Some of the employed married women whose wages are adjusted upward may choose to devote more hours in the year to market work.
6. Increases in labor supply may lead to increases in job experience. Increases in job experience and in job-related training should lead, in turn, to further wage increases for women.
7. Higher wages for employed women, coupled with increases in female labor supply, should lead to a rise in the earnings distribution for women. This, in turn, should lead to decreases in the incidence and severity of poverty among women and among children in female-headed households. It may also lead to a general rise in the decision-making power of women, both within their families and more generally within society in reflection of the increased economic power of women. Because of their cumulative nature, these effects should be most pronounced for middle-aged and older women.

Empirical Evidence Concerning Wage Effects on the Labor Supply of Women

The comparable worth programs that have been instituted so far are quite recent and fairly limited in scope, in the U.S. at least. Thus, limited data are available for directly checking whether these programs have had the effects on female labor supply implied by the economic theories summarized in the previous section. However, the vast empirical literature on the general responsiveness of female labor supply to wage changes may provide some evidence on this issue.

It should be noted at the outset that the manner in which women alter their labor supply in response to wage changes may differ depending on the reasons for the wage changes. Thus the empirical results summarized in this section may not apply in all respects to a consideration of expected labor supply adjustments due to comparable worth wage changes. Also, there are serious mismatches between the theoretical and empirical sides of the economics literature on female labor supply, as well as between the literature as a whole and the reality of the subject. For instance, much of the theoretical work treats young women as though they inevitably plan on being married and treats marriages as though they are "till death do us part." Yet the proportion of marriages begun in each year that end in divorce has been rising all century, and the rate of increase has been rising as well (Cherlin, 1981, pp. 21-25). As a result, the number of female-headed families (families consisting of women with their children) has been rising as well. Examining the income sources for female-headed families in the year following marital dissolution, Duncan and Hoffman (1986) reported that on average only one-tenth was contributed by fathers and one-twentieth came from

welfare. Most of the income of these families came from the earnings of the mothers.

Following the theoretical assumptions of the literature, most empirical studies of the wage responsiveness of female labor supply have dealt only with women who are currently married. In fact, some of the more recent panel data studies consider only women who have been continuously married over a period of several years (e.g., Heckman, 1981; Heckman & MaCurdy, 1980; Nakamura & Nakamura, 1985a). Accepting the potential limitations on the applicability of the results from these studies, empirical evidence concerning wage effects on the probability of employment is examined next. Then evidence is reviewed concerning wage effects on the expected hours of work for employed women.

Wage Effects on the Probability of Employment

Individuals who are employed are presumed to choose their hours of work so as to equate their reservation and market wage rates. This implies that the observed wage rates for those who are employed can be viewed as observations on both their market wage rates and on their reservation wage rates evaluated at their actual hours of work. However, few data sets contain any information on wage offers for those who are looking for jobs but are not employed, or the wage offers that those who are not employed or looking for work could command if they did enter the labor market. Without information on the wage rates that women who are not employed could command, it is not possible to estimate directly the impact of a change in the market wage on the probability that a woman will be employed. Indirect approaches to estimating this effect include the use of aggregate (macro) data rather than individual (micro) data, the use of reduced-form expressions or instrumental variables in place of the wage variable, and analysis of evidence concerning the continuity of individual employment behavior. These indirect approaches are briefly considered in the order listed.

Aggregate data are facts that are added up, averaged, or in some other way summarized for groups of individuals. For instance, the average wage rate for women is an aggregate variable. Smith and Ward (1985) examined how the female employment rate, and average hours of work for employed women, have been related over time to the average female wage rate. On the basis of this analysis of aggregate cohort data, they concluded that increases in the real wages of women "do indeed explain a considerable part of the postwar increase in female labor supply" (p. S83). These findings are consistent with the theoretical prediction that increases in an individual's market wage will unambiguously increase that individual's probability of employment.

However, there are many potential problems with studies of employment behavior based on aggregate data. For instance, changes over time in the average

female wage could be due to changes in the mix of the job qualifications of women who work, rather than to changes in the market wage rates for women with any given qualifications.

A second approach to estimating wage effects on the probability of employment is to use data for individuals, and to substitute observable indicators or proxy variables for the wage rate, which is unobservable for women who are not employed. For example, it might be hypothesized that the market wage rates of women are a function of their years of schooling, their years of job experience, and measures of labor market conditions such as the state or local unemployment rate. In some early studies, such a wage function was estimated for employed women, and then was used to calculate predicted wage rates for all women including those not currently employed. This use of a predicted, or instrumental, wage variable has been criticized on the grounds that the coefficient estimates of the instrumental wage function may be subject to selection biases (see, for example, Heckman, 1974).

Selection biases arise when there are unobservable factors (such as tastes for work) affecting both the probability of being employed and the wage rates of those who are employed, and which are also correlated with variables included in the instrumental wage function (see Nakamura & Nakamura, 1989b). For example, career-oriented women may be more likely to be employed, and may also tend to have higher wages when they are employed because women who like working tend to work harder. Tastes for work, which are unobservable in the sense that information on these tastes is not available in most data bases, may also be correlated with years of education, since there may be some tendency for career-oriented women to remain in school longer. If this is the case, the coefficient of the schooling variable in a wage equation may reflect both the labor supply effects of schooling on wages and the effects of being career oriented. The estimated wage equation may then systematically overestimate the market wage rates of women with above average years of schooling who are not employed.

Another common practice in more recent studies is to substitute (prior to estimation) the right-hand side of the equation for the market wage variable into the model for the probability that a woman will be employed. The resulting model of work behavior is sometimes referred to as a reduced-form model, since it results from the elimination of one of the original variables (the market wage) through the substitution of an (unestimated) function of observable variables. The reduced-form approach yields a model for the probability of employment, which can be estimated (without problems of selection bias) using data for all women in the designated group (both employed and not employed). However, it is not always possible to make inferences from such an estimated model concerning the impact of the market wage rate on the probability of employment. To do

this, there must be at least one explanatory variable in the model that affects the probability of employment via the market wage but not the reservation wage.

It is sometimes claimed that education only affects the wage offers women receive, and others have made this same claim regarding years of previous employment experience (e.g., Heckman, 1981). Michael (1973) argued convincingly, however, that education also affects women's reservation wage rates by affecting their productivity in home-oriented activities. Similarly, previous employment experience may alter or reflect tastes for market work that in turn affect the reservation wage (Nakamura & Nakamura, 1981, p. 480, 1985a, 1985b). Nakamura, Nakamura, and Cullen (1979) and Nakamura and Nakamura (1981, 1983) assumed that the relative availability of job opportunities for women in the localities where they live will affect women's market wage rates, but not their reservation wage rates. Most likely, however, the way in which women value their hometime is also affected by opportunities for employment and other related characteristics of the localities in which they live. (For further discussion of this point, see Orcutt, Nakamura, & Nakamura, 1980; Nakamura & Nakamura, 1981, 1985a, 1985b.) Reported findings from these and other micro data studies appear to support the theoretical implication that increases in the market wage rates of women increase the probability of employment. But for the reasons discussed, these findings must be viewed as tentative.

Micro data studies of the continuity of employment behavior provide a still more indirect form of evidence about market wage effects on the probability of employment. Economists postulate that the decision to be employed depends on the relationship between an individual's market wage rate and reservation wage rate. If this is the case, then factors that produce large changes in either market or reservation wage rates should make changes in employment behavior more common. It is hard to think of individual attributes that are observable and common, that change for many individuals, and that would be expected dramatically and quickly to affect the market wage rates of women when they do change. However, economists such as Becker clearly believe the presence of young children in the family has a major impact on the reservation wage rates of their mothers, such that wives with young children are likely to drop out of the work force. A finding of frequent labor force turnover for wives, or for wives with children, would suggest that the employment decisions of these women are sensitive to the relationship between the value of hometime and the market wage. This, in turn, would lend support to the proposition that the employment decisions of wives would be sensitive to changes in their market wage rates brought about by comparable worth adjustments, since these would also lead to changes in the relationship between the reservation wage and market wage rates.

It has been found, however, that over time periods of 3-10 years, most married women either are employed every year or are not employed at all. Based

on panel data for 1971–1973 for continuously married white women, Heckman (1981, p. 105) wrote,

A noteworthy feature of the data is that roughly 80 percent of the women in the sample of older women either work all of the time or do not work at all The corresponding figure for younger women is 75 percent Both samples are roughly evenly divided between full-time workers and full-time nonworkers. There is little evidence of frequent turnover in these data, nor is there much evidence of turnover in the full seven years of data.

Using U.S. panel data for 1969–1978, Nakamura and Nakamura (1985a, Table 3) found that 27% of the continuously married women 21–64 years of age never worked over this period, while 38% worked all 10 years. Thus, 65% of these wives were either employed every year or not employed at all over a 10-year period.

Table 1 displays summary statistics that provide more direct information on child-related turnover. It shows employment rates for wives 21–46 years of age, who were continuously married over the sample period, grouped by employment status in the previous year (employed or not employed) and child status. Lines 3 and 4 demonstrate that for wives who were employed in the previous year there

Table 1. Annual Employment Rates for Wives 21–46 Years of Age Classified by Employment Status in the Previous Year ($t-1$) and Presence of a Child Younger than 6

Group	Number of cases ^a	Proportion of cases where wife was employed in year t
All wives	3466	.56
Those who were employed in $t-1$	1863	.96
Those who were employed in $t-1$ and had a child less than 6	382	.96
Those who were employed in $t-1$ and had no children less than 6	1481	.96
Those who were not employed in $t-1$	1603	.10
Those who were not employed in $t-1$ and had a child less than 6	701	.06
Those who were not employed in $t-1$ and had no children less than 6	902	.12

Source: Pooled data for 1971 through 1978 from the Michigan Panel Study of Income Dynamics for women continuously married and continuously included in the panel study (Institute for Social Research, 1980).

^aEach annual observation on a woman is treated as one case.

was no difference in the probability of continuing to be employed for those who had a child younger than 6 vs. those who did not have a young child. These probabilities of being employed currently were very close to 1. Yet continuously married women are precisely the ones who would be expected, on theoretical grounds, to display the greatest child-related employment turnover. (For further research on continuity of female employment behavior, see Mincer & Ofek, 1979, 1982; Heckman & Willis, 1979.)

Lines 6 and 7 of Table 1 show that the probability of becoming employed was twice as high for women who were not employed in the previous year and did not have a small child, as for women who were not employed in the previous year and did have a child younger than 6. However, for both groups, the probability of becoming employed was very low—only 12% for those who did not have a small child.

The empirical results presented by Nakamura and Nakamura (1985b) confirm the general pattern of findings in Table 1, and establish that these findings hold for unmarried as well as currently married women. Women who were employed in the previous year were found to be very likely to continue being employed in the current year, while women who were not employed in the previous year were found to be unlikely to become employed. The impacts of a woman's child status, or changes in her child status, on the continuity of her employment behavior were fairly minimal (although small differences were detected even for women who were employed in the previous year).

The empirical evidence concerning the effects of changes in market wage rates on the probability of employment can be summed up as follows:

1. Evidence from aggregate data supports the theoretical implication that increases in the market wage rates of women increase the probability of employment. This is also the case for evidence from reduced-form models of the probability of employment estimated using data for individuals. For a variety of reasons, however, the evidence from both the aggregate and the individual data must be viewed as tentative.
2. Evidence about the continuity of employment behavior for individual women indirectly suggests that responsiveness of the probability of working to wage changes may be modest. If correct, this finding should lessen the fears of opponents of comparable worth programs, who are concerned about the consequences of large influxes of women into the work force (displacement of male workers, family breakdown, and so forth).

Wage Effects on the Hours of Employment for Employed Women

Now let us examine evidence concerning hypothesized wage effects on the hours of work of employed women. Most economists still seem convinced that

the available empirical evidence shows that employed women (or, at least, employed wives) tend to increase their hours of employment substantially in response to increases in their wage rates. For instance, Blau and Ferber (1986, p. 95) wrote,

With respect to the hours decision, empirical evidence indicates that for men the income effect generally tends to offset or even dominate the substitution effect and that they do not decrease, or may even increase, the amount of nonmarket time as their wage rate goes up The situation is quite different for women . . . empirical studies for the most part find that women's labor supply is strongly positively related to the wage rate.

However, a different view is supported by the finding of Smith and Ward (1985, p. S81) that, in recent years, the observed increases in female labor supply have been primarily due to increases in the female employment rate rather than to increases in the hours of market work for those women who are employed. Moreover, estimates of the wage impact on hours of employment for married women that are small and sometimes negative, like the estimates reported for men, have been obtained in a number of studies based on cross-sectional and panel micro data. Using micro data from the 1971 Census of Canada, Nakamura et al. (1979, p. 800) obtained small and generally negative estimates of this wage effect for married women in all of the five-year age groups of 25–29 through 45–49. Of course, Canadian and U.S. wives might differ in their employment behavior because of a variety of country-specific factors. For instance, U.S. couples typically file joint tax returns, while Canadian wives who are employed are taxed as separate individuals. These issues were addressed by Nakamura and Nakamura (1981), using micro data from the 1970 U.S. Census and the 1971 Census of Canada. After correcting for tax effects, the estimated wage impacts were found to be small and generally negative for both U.S. and Canadian wives.

Other researchers have suggested that perhaps the distribution between wives employed full time and those employed part time might be different in the census data samples used in Nakamura et al. (1979) and Nakamura and Nakamura (1981), compared with the noncensus data samples on which most other published studies were based. It has been argued that perhaps wives employed full time might exhibit wage responses similar to those of men, but that wives employed part time would exhibit the larger positive labor supply responses expected on theoretical grounds for married women. Yet Nakamura and Nakamura (1983, p. 246) obtained similar results for Canadian and U.S. wives in both part-time and full-time employment categories. Killingsworth (1983, pp. 200–201) has suggested that the results presented in Nakamura et al. (1979) and in Nakamura and Nakamura (1981, 1983) may be aberrant because years of employment experience was not directly controlled for in these studies, and because a child status variable was included as a proxy for employment experience in the wage equations in the first two of these studies. These conjectures

were explored empirically by Nakamura and Nakamura (1985b, pp. 180–190, 278–293) and were not supported by the results obtained.

On the basis of the accumulated evidence, we conclude that the wage impacts on hours of employment are small for married women *just as for men*, and possibly negative. This conclusion is further supported by results presented by Mroz (1987), Robinson and Tomes (1985), Smith and Stelcner (1988), and Stelcner and Breslaw (1985), and by estimates from studies based on negative income tax experimental data (Killingsworth, 1985, pp. 398–399, Table 6.2). The implication is that the impacts of comparable worth wage adjustments on the number of hours worked by employed wives may also be small in magnitude. This finding, in addition to those in the previous section, should also allay the fears of comparable worth opponents concerned about the potential for large increases in the female labor supply.

It seems the theories that have led researchers to expect, and to believe in, large positive wage-related labor supply responses for employed women need to be reexamined. Suppose, for instance, that a woman is employed a few hours a week to save up money for some particular purpose, such as a family trip or some home renovation. If her wage rate goes up a bit, the resulting change in her earnings may be small compared to the family's total annual income, because of her part-time hours of employment. This observation suggests that the income effect of this wage change on the woman's hours of employment will also be small. However, the income change may not be small compared to the target amount the woman is trying to earn. Thus, the wage increase will mean that she can earn this target amount without being employed for as many hours, and her hours of employment may even decline.

Conclusions

The economic theories surveyed in this paper have led some to expect that comparable worth wage adjustments should substantially increase the employment rates for women and also the expected hours of market work for employed married women. Thus, some authors have expected comparable worth programs to raise the female earnings distribution both by raising the hourly wage distribution and by increasing the amount of labor supplied by women. Available empirical evidence suggests, however, that the effects of wage increases on female labor supply are modest. Of course, higher wage rates will still benefit those women who receive them, whether or not these women increase their labor supply in response to these wage changes. Thus these conclusions *do not* constitute arguments against instituting comparable worth programs. These conclusions do suggest, however, that the impact of these programs on female earnings may be less dramatic than some might have hoped. They also suggest

that fears that comparable worth programs will stimulate large increases in the labor supply of women may be groundless or overblown.

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