

Understanding the “Family Gap” in Pay for Women with Children

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The narrowing of the gender gap in pay in the 1980s and 1990s, following decades in which the gap between the hourly earnings of women and men held constant, has been one of the most notable trends in the labor market in recent years. The decline in the gender gap has been all the more remarkable because it occurred while other types of wage inequality were increasing. These recent trends in the gender gap and in wage inequality have been extensively studied. However, less attention has been paid to the “family gap”—the wage differential between women with and without children.¹

Over the past few decades, as the gap in pay between women and men has been narrowing, the gap between women with children and those without children has been widening. Why is this the case? One reason may be the institutional structure in the United States, which has emphasized equal pay and equal opportunity policies, but not family policies such as maternity leave and child care. Other industrialized countries that have implemented family policies along with their gender policies seem to have had better success at narrowing both the gender gap and the family gap.

Although much of the evidence on links between family policies and women’s pay is speculative, there is one policy—maternity leave—where we now have more persuasive evidence. Recent research in the United States, as well as comparative research on Britain and Japan, suggests that maternity leave coverage may raise

¹ Other types of family-related gaps may exist—for example, those between women with responsibility for aging parents and those without—but here the focus is on women with children and those without. Also note that the family gap refers to the differential in hourly wages, so mothers’ lower work hours do not directly affect the gap (although they may affect it indirectly through lower acquired human capital).

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women's pay. This research tells a clear story as to how such an effect might operate: maternity leave coverage, by raising women's retention over the period of childbirth, raises women's wages by increasing their levels of work experience and job tenure and allowing them to maintain good job matches. Thus, maternity leave, along with other family policies, may be an effective remedy for the family gap in pay.

The Gender Gap and the Family Gap

There is no doubt that women, on average, are earning much higher wages relative to men than they did in the past. Goldin (1990), in her authoritative history of the gender gap in the United States, finds that the ratio of female/male hourly earnings rose from the early 1800s to 1930, was constant for about 40 years, and then began to rise for some groups of women in the 1970s and for women more generally in the 1980s. The progress over the past few decades has been dramatic: Blau (forthcoming) reports that the ratio of female/male average weekly earnings for full-time workers rose from 56 percent in 1969 to 58 percent in 1979 to 68 percent in 1989 to 72 percent in 1994.²

Why did women's average wages rise relative to men's over the past few decades? One reason is that women's human capital rose, because women increased their investment in education and reduced their time out of the labor market (Blau, forthcoming; O'Neill and Polachek, 1993). These changes began before the 1970s, but until then the effect was offset by the entry into the labor market of women with relatively low levels of work experience. It was only in the 1970s and thereafter that women in large numbers began staying in the labor market more continuously over the period of marriage and childbearing. Occupational change also played a role, as women shifted to higher-paying occupations (Blau, forthcoming; Sorensen, 1991).

These changes did not occur in a vacuum: The United States implemented various equal pay and equal opportunity policies in the 1960s and 1970s and these policies appear to have paid off. Nor was the United States unique in this regard. Many industrialized countries implemented equal pay and equal opportunity legislation in these years, and as we can see in the three panels of Figure 1, their gender pay ratios narrowed as well.³ In fact, the progress in the United States pales

² On some measures, progress has stalled since the early 1990s. According to the Bureau of Labor Statistics (1997a), which tracks median weekly earnings for full-time workers, the female/male ratio reached a peak of 77 percent in 1993 and then declined slightly to 75 percent in 1997.

³ For some countries, such as England, the effect of equal pay legislation on women's pay has been documented (for example, Arrufat and Zabalza, 1986) but in others, clear evidence is lacking. For further information on the equal pay and equal employment opportunity laws in the 14 countries included in Figure 1, see Blau and Kahn (1994b) and Joshi, Paci and Waldfogel (forthcoming). These data include part-time employees for all countries except Australia, New Zealand, the United Kingdom, the United States, and Canada.

Figure 1

Female-to-Male Hourly Earnings Ratios in Selected Industrialized Countries, Non-Agricultural Workers, 1967–1995

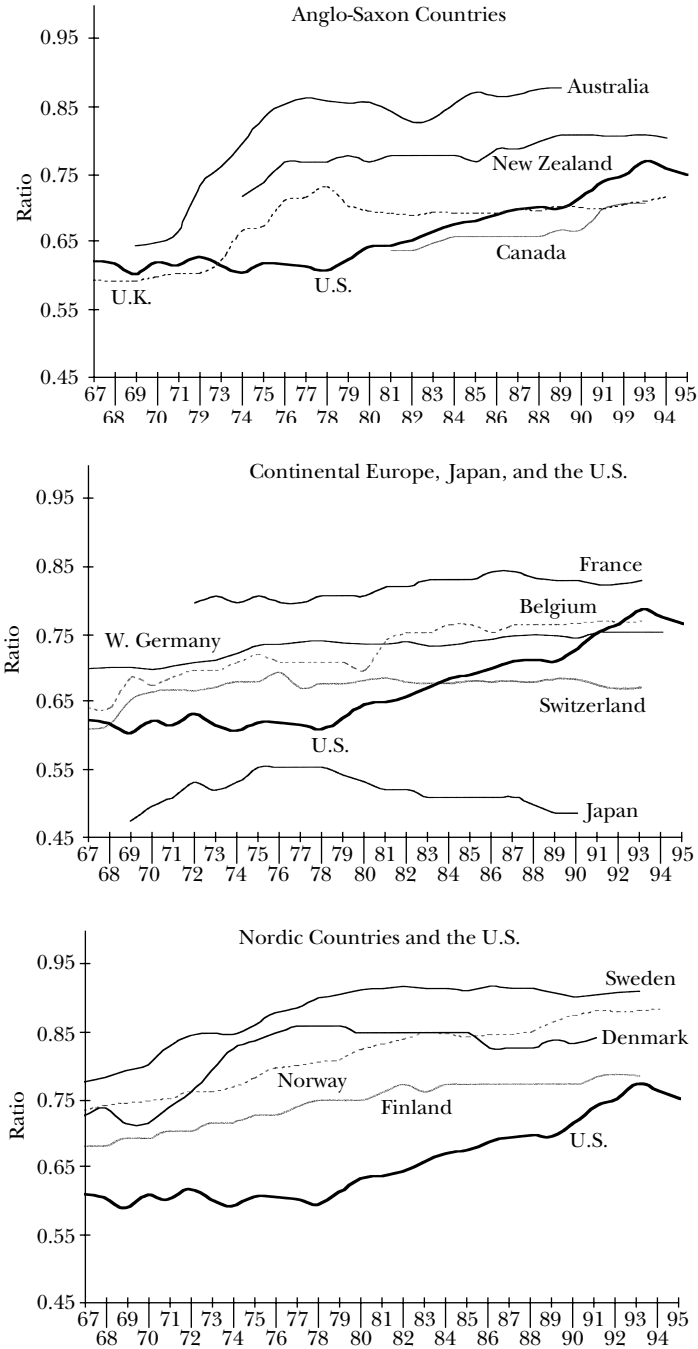


Table 1
Female-to-Male Hourly Earnings Ratios, Nonagricultural Workers

Sweden (1993)	90%
Australia (1989)	88%
Norway (1994)	87%
Denmark (1991)	83%
France (1993)	81%
New Zealand (1994)	81%
Finland (1993)	78%
Belgium (1993)	75%
United States (1995)	75%
West Germany (1994)	74%
United Kingdom (1994)	72%
Canada (1993)	71%
Switzerland (1993)	67%
Japan (1990)	50%

Sources: UK data from the Employment Department Historical Abstract, Yearbooks of Labour Statistics, and subsequent Gazettes. US data from the U.S. Bureau of Labor Statistics. Canada data from the Survey of Consumer Finances, provided by Peter Kuhn. All other data from the ILO Yearbook of Labour Statistics, various years, updated from material provided by Francine Blau. For further information on the sources, see Blau and Kahn (1994) and Joshi, Paci, and Waldfogel (forthcoming).

by comparison to other industrialized countries, many of whom had higher female/male earnings ratios by the 1990s as we see in Table 1.⁴

One reason for the lagging performance of American women relative to women in other countries is the wage structure in the United States. At the same time that the gender pay gap was falling, wage dispersion in the United States was rising. Inequality among men began rising in the early 1970s, and by the end of the 1970s, inequality among both men and women was on the increase.⁵ As Blau and Kahn (1996, 1997) point out, women narrowing the gender gap were “swimming upstream” against the tide of rising inequality. To put it another way, had women not increased their investments in education and experience, the gender pay gap would have widened in the 1980s simply due to the changes in the overall wage structure.

The family gap may be another reason why the gender gap is larger in the United States than in other countries. The United States does at least as well as other countries in terms of equal pay and equal opportunity legislation, but Table 2 indicates that the United States lags in the area of family policies such as maternity leave and child care. Until the passage of the Family and Medical Leave Act in 1993, the United States had no national maternity leave policy, and

⁴ Data in Table 1 are from the most recent year available and include part-time employees for all countries except Australia, New Zealand, U.K., U.S., and Canada. If part-time employees were included for these countries, their gender pay ratios would be lower.

⁵ See Gottschalk (1997) and other articles in the Spring 1997 JEP symposium on wage inequality.

Table 2

Maternity Leave, Parental Leave, and Child Care Provisions in 1994 in Selected Industrialized Countries

	Leave Provisions:		Child Care Provisions:			
	Maternity Leave (weeks)	Parental Leave (weeks)	% in formal care		Cost of Care as % Female Earnings	
			< 3s	3-School Age		
NORDIC COUNTRIES						
Denmark	18	10-52	60	79	8	
Finland	17.5	26-156	25	50	7	
Norway	*	52	—	46	13	
Sweden	*	62	32	63	7	
CONTINENTAL EUROPE AND JAPAN						
Austria	16	112	3	69	11	
Belgium	15	130	18-19	95+	0	
France	16	0-156	33	99	0	
W. Germany	14	156	4	68	3	
Switzerland	8-12	(none)	(na)		(na)	
Japan	14	52	12	57	(na)	
ANGLO-SAXON COUNTRIES						
Australia	52	52	—	43	—	6
Canada	17	10	10	33	(na)	
New Zealand	*	52	—	42	—	20
United Kingdom	14-40	(none)	7	66	28	
United States	*	12	26	71	22	

Sources: Yoshio Higuchi kindly supplied data on Japan. Sources for all other data are documented in Joshi, Paci and Waldfogel (forthcoming).

Notes: The countries marked with an asterisk have no separate maternity leave provisions; maternity leave falls under parental leave or family leave. Leave in the United States is unpaid, in contrast to the other countries shown here. Child care provision figures for Germany are for the former West Germany; provision in the former East Germany is higher. Figures for Switzerland are for 1988. The cost of care as a percentage of female earnings is the average child care cost for one child age 2 years, 11 months, divided by the average earnings for a lone mother.

even now, it is tied with Switzerland in offering the shortest period of leave—a maximum of 12 weeks. Moreover, the United States is the only country of those listed in Table 2 that does not offer at least some degree of paid leave. With regard to child care, although relatively high proportions of American children are in child care, the United States relies to a larger extent than most other countries on private market provision of such care. As a result, the out-of-pocket price of care relative to women's earnings is higher in the United States than in other countries, with the exception of the United Kingdom, where there is also

Table 3

Female-to-Male Earnings Ratios for Single and Married Women, and the Gap Between Them in Selected Industrialized Countries

	<i>Single Women's Pay/ Single Men's Pay</i>	<i>Married Women's Pay/ Married Men's Pay</i>	<i>Gap between Ratios</i>
Norway	.90	.68	.22
Sweden	.94	.72	.22
Australia	.90	.68	.22
Austria	.92	.66	.26
Switzerland	.87	.61	.26
United Kingdom	.83	.56	.27
United States	.88	.57	.31
Germany	.98	.60	.38

Sources: Based on data in Blau and Kahn (1994b), Table 3.3; earnings ratios are based on annual or weekly earnings for all workers (including part-timers), corrected for hours.

little public provision and where women's earnings are also relatively low (as shown in Figure 1).⁶

Thus, U.S. policies have focused on equalizing opportunities for women and men, but have not specifically addressed the problems posed by the presence of children, while most other industrialized countries have done both. Given this institutional framework, one would expect to find that the overall gender gap in pay would be higher in the United States, as would the family gap between women with children and women without, and indeed this is generally the case.⁷ Figure 1 and Table 1 suggested that the gender gap in pay is greater in the United States than in other countries with more fully developed family policies. Although only limited data are available on the pay gap between mothers and other women, these data suggest that the family gap may be larger in the United States as well. Table 3, based on data in Blau and Kahn (1994b), shows female/male pay ratios in eight industrialized countries for married women and unmarried women (who are primarily mothers and non-mothers respectively). The gap between the married women and unmarried women compared to men of their same marital status is, with one exception, largest in the United States. The exception is Germany, and its low position is explained at least in part by the combination of very long periods of maternity leave (up to three years), including a period in which women are prohibited from returning to work even if they desire to do so (!), and by the very low provision of child care in that country

⁶ The type and quality of child care, of course, varies widely across countries. France, for example, tends to have higher child-to-teacher ratios than would be the case in the United States, while in Denmark and Italy, child-to-staff ratios are low.

⁷ One would also expect these policies to be associated with differences in the effects of children on employment and work hours (Gornick, Meyers, and Ross, forthcoming). These differences in participation, through their effects on experience and tenure, will in turn affect wages.

for children under the age of three. Harkness and Waldfogel (1997) calculate the pay ratios for women with children compared to the average man, women without children compared to the average man, and mothers compared to non-mothers in eight countries using the Luxembourg Income Study database. They find that in Belgium, Australia, Sweden, Finland, and Canada, there is no notable gap between the pay of mothers and non-mothers. However, such a gap does exist in the United Kingdom, Germany, and the United States—and is largest in the United States.

The Magnitude of the Family Gap

It is well-established that women with children earn less than other women in the United States. Even after controlling for differences in characteristics such as education and work experience, researchers typically find a family penalty of 10–15 percent for women with children as compared to women without children (Fuchs, 1988; Korenman and Neumark, 1992; Waldfogel, 1997a). Women with children are also less likely to have successful careers. Goldin (1997) used several different definitions of “career” and consistently found that college-educated women who had children were less likely to have a career than those who were childless. For example, only 31 percent of the mothers in her sample worked full-time over a three-year period in the 1980s, as compared to 67 percent of the non-mothers. With regard to earnings, only 18 percent of mothers had earnings above the 25th percentile of earnings for college-educated men in all three years, as compared to 45 percent of non-mothers.

There is no such family penalty for men. Indeed, it is well-established that married men, most of whom have children, earn more than other men, with estimates of the marriage premium for men ranging from 10–15 percent in recent studies (Jacobsen and Rayack, 1996; Korenman and Neumark, 1991; Loh, 1996).

What is less well-known is that the family gap between women with children and women without children has been rising in recent years, even as the gender gap between women and men has been narrowing. Table 4 shows mean wages for women and men aged 24 to 45 in 1978, 1988, and 1994. The first two rows show wages per hour in 1994 dollars for women and men in each year; the third row shows the hourly pay ratio for women, which rose 11.9 percentage points from 1978 to 1994. However, the ratio of women’s average earnings to men’s average earnings, and the rate at which this ratio grew over the period, depended a great deal on the family status of the women. Women with no children, who already had the highest earnings relative to average male earnings in 1978, also made the most progress, as their earnings rose 12.9 percentage points from 68.4 percent in 1978 to 81.3 percent in 1994, while the earnings of women with children rose only 10.9 percentage points, from 62.5 percent in 1978 to 73.4 percent in 1994.⁸

⁸ These pay ratios, and those in Table 5, are presented relative to average men’s earnings to illustrate how the gender gap varies by family status, and how that variation has changed over time. If women’s

Table 4

Wage Changes from 1978–1994: U.S. Women and Men Age 24–45*(All dollar figures are mean wages/hour, converted to 1994 dollars)*

	1978	1988	1994
Mean wage for all women	10.49	11.58	11.42
Mean wage for all men	16.25	15.68	14.95
Wage for all women/Wage for all men	64.5%	73.9%	76.4%
Mean wage for women with no children	11.11	12.50	12.15
Wage/Wage for all men	68.4%	79.7%	81.3%
Mean wage for mothers	10.15	10.99	10.97
Wage/Wage for all men	62.5%	70.1%	73.4%
Mean wage for married mothers	10.20	11.31	11.44
Wage/Wage for all men	62.8%	72.1%	76.5%
Mean wage for previously married mothers	10.08	10.21	9.87
Wage/Wage for all men	62.0%	65.1%	66.0%
Mean wage for never married mothers	9.34	8.89	8.44
Wage/Wage for all men	57.5%	56.7%	56.5%

Source: Tabulated from March 1979, 1989, and 1995 Current Population Survey (CPS).

The earnings position of women with children varied a great deal by their marital status. Married women with children made gains even larger than non-mothers over the period, as their pay rose 13.7 percentage points from 62.8 percent in 1978 to 76.5 percent in 1994; nevertheless, their level of pay and their pay ratio relative to men remained well behind women without children. Lone mothers—both previously married and never married women with children—fared much worse. By 1994, previously married mothers were earning only 66 percent of men’s pay, a gain of only 4 percentage points from 1978. Never married mothers earned only 56.5 percent of men’s pay in 1994, a decline of 1 percentage point from 1978. As a result, the 6.4 percentage point gap between previously married mothers and non-mothers in 1978, and the 10.9 percentage point gap for never married mothers, had grown to 15.3 and 24.8 percentage points respectively by 1994.⁹

Evidence from the National Longitudinal Surveys tells a similar story and reveals that the contrast between women with children and those without children is even starker among younger women. For example, consider a sample of young women and men with an average age of 30 in 1980, taken from the National Longitudinal Surveys of Young Women (NLS-YW) and of Young Men (NLS-YM), and a sample with an average

earnings were compared to men of their same family status, in most instances the ratios would be lower, since married men with children tend to have higher pay than others, while for women the opposite is true. Another natural comparison would be the ratio of mothers’ earnings to non-mothers’ earnings. These ratios are shown in Table 7.

⁹ Using non-mothers as the reference group, the ratio for previously married mothers fell from 91 percent to 81 percent from 1978 to 1994, while the ratio for never-married mothers deteriorated from 84 percent to 70 percent.

Table 5

Wage Changes from 1980 to 1991: U.S. Young Men and Women (Mean Age 30)
(All dollar figures are wages/hour, converted to 1991 dollars)

	1980	1991
Mean wage for all women	9.07	9.63
Mean wage for all men	15.07	12.14
Wage for all women/Wage for all men	60.2%	77.1%
Mean wage for young women with no children	9.98	10.94
Wage/Wage for all men	66.2%	90.1%
Mean wage for young mothers	8.49	8.81
Wage/Wage for all men	56.3%	72.6%
Mean wage for young married mothers	8.52	9.34
Wage/Wage for all men	56.5%	76.9%
Mean wage for young previously married mothers	8.39	7.74
Wage/Wage for all men	55.7%	63.8%
Mean wage for young never married mothers	8.52	7.20
Wage/Wage for all men	56.5%	59.3%

Source: Figures for 1980 tabulated from NLS-YW and NLS-YM. Wages are from 1980 for those working in 1980; otherwise, the wage is from the most recent survey year not earlier than 1975 in which the individual was working. Figures for 1991 are tabulated from NLSY. Wages are from 1991 for those working in 1991; otherwise, the wage is from the most recent survey year not earlier than 1987 in which the individual was working. All data are weighted using the NLS sampling weights.

age of 30 in 1991, taken from the National Longitudinal Survey of Youth (NLSY).¹⁰ Based on these samples, Table 5 shows that the family gap for young women grew over the 1980s. The female/male earnings ratio for young women overall rose from 60 percent in 1980 to 77 percent in 1991, but the progress for mothers was much less than for non-mothers. In 1980, young mothers earned 56 percent of the average male salary, while non-mothers earned 66 percent, so the gap between mothers and non-mothers relative to men's pay was 10 percentage points. By 1991, young mothers had improved their hourly earnings to 72.6 percent of the average male level, but the ratio for non-mothers had risen all the way to 90.1 percent of average male earnings. Thus, the gap between mothers and non-mothers had expanded to 17.5 percentage points. Table 5 also shows that, among women with children, married mothers fared the best. The earnings of married mothers, relative to average male earnings, rose over 20 percentage points from 1980 to 1991, while the earnings of previously married and never married mothers, relative to average male earnings, rose only 8 and 3 percentage points respectively.

Table 6 shows the results of ordinary least squares regressions, for young women and men in 1980 and 1991, in which the log of hourly wages was regressed on a set of human capital and demographic characteristics, including age, actual work experience,

¹⁰ For further details on these samples, see Waldfogel (1997b).

Table 6

OLS Log Wage Equations for Young Men and Women in 1980 and 1991

	1980				1991			
	Men		Women		Men		Women	
	Means	Coefficients	Means	Coefficients	Means	Coefficients	Means	Coefficients
Age	31.35	.0071 (.0041)	29.55	-.0048 (.0028)	29.57	-.0110 (.0037)	29.56	-.0145 (.0039)
Experience	11.82	.0152 (.0032)	8.38	.0293 (.0025)	8.17	.0397 (.0033)	7.67	.0471 (.0031)
College graduate	.26	.4570 (.0258)	.20	.4530 (.0260)	.19	.5837 (.0226)	.22	.5705 (.0246)
Some college	.23	.3130 (.0252)	.20	.2572 (.0249)	.30	.2417 (.0210)	.25	.2376 (.0232)
High school graduate	.34	.2018 (.0237)	.44	.1425 (.0220)	.27	.1124 (.0210)	.34	.0428 (.0217)
Married	.71	.1191 (.0266)	.62	.0418 (.0219)	.50	.1133 (.0172)	.57	.0407 (.0195)
Previously married	.13	.1341 (.0288)	.19	.0809 (.0255)	.13	.0451 (.0237)	.17	.0159 (.0243)
One child	.17	.0349 (.0248)	.22	-.0447 (.0205)	.19	-.0003 (.0189)	.24	-.0979 (.0198)
Two or more	.45	.1030 (.0220)	.42	-.0923 (.0205)	.27	.0401 (.0187)	.40	-.1093 (.0196)
Black	.25	-.2204 (.0239)	.30	-.0433 (.0216)	.24	-.1445 (.0258)	.22	-.0490 (.0210)
Hispanic	.02	-.0164 (.0520)	.02	.0288 (.0435)	.17	-.0397 (.0330)	.16	.0478 (.0247)
Not working in survey year	.21	.0280 (.0200)	.29	-.0004 (.0183)	.28	.0653 (.0191)	.34	-.1214 (.0169)
Intercept		1.7789 (.1028)		1.7992 (.0766)		2.0209 (.0977)		2.0303 (.1033)
Observations		3253		2929		4770		4334
Adjusted R^2		.2053		.2029		.2008		.2564

Notes: Dependent variable is the log of hourly wages. The 1980 sample is from the NLS-YW and NLS-YM; the 1991 sample is from the NLSY. For individuals not working in the survey year, the wage is taken from the most recent year in which the individual did work. All wages are in 1991 dollars. Regressions are weighted using the NLS sampling weights.

education, marital status, parental status, race, and ethnicity.¹¹ The table also shows mean characteristics for men and women in each year. The results indicate that while differences in characteristics such as education and work experience between women and men were declining from 1980 to 1991, the returns to those characteristics, and thus the penalties for any differences between men and women, were generally in-

¹¹ The model also includes an intercept and a control for whether the person was not working in the survey year. Job tenure is not included in the model because it is likely to be endogenous.

Table 7
Gender & Family Gap at Age 30

	1980 NLS-YW & YM	1991 NLSY
<i>A. Accounting for the Gender Gap at Age 30</i>		
Male log wage	2.55	2.28
Female log wage	2.09	2.07
Gender gap in log wages	.46	.21
Decomposition of gender gap:		
Education		
Characteristics alone	5%	-4%
Characteristics and returns	12%	7%
Age and Experience		
Characteristics alone	20%	15%
Characteristics and returns	66%	61%
Marital and parental status		
Characteristics alone	0%	7%
Characteristics and returns	35%	56%
Race and Ethnicity		
Characteristics alone	0%	0%
Characteristics and returns	-9%	-19%
Intercept	-4%	-5%
Total		
Characteristics alone	25%	18%
Characteristics and returns	100%	100%
<i>B. Accounting for the Family Gap at Age 30</i>		
	1980 NLS-YW	1991 NLSY
Non-Mothers' log wage	2.20	2.24
Mothers' log wage	2.03	1.99
Family gap in log wages	.17	.25

creasing. The table also shows that marital and parental status had important, and differing effects, on men's and women's wages. Being married or previously married had positive effects for both men and women, but these effects were larger for men. Having children had positive or no effects for men, but very strongly negative effects for women, and these effects increased from 1980 to 1991.

How important was family status in accounting for the gender gap in pay in these years? Table 7 uses the means and coefficients from Table 6 to decompose the gender gap in 1980 and 1991. Over this period, the gender gap fell (in log points) from .46 to .21, and the components of the gap changed dramatically as well. In 1980, differences in age, work experience, and current work status, and in the returns to those characteristics, accounted for 66 percent of the gender gap. Family status returns—women's lower coefficients for marriage and children—

accounted for 35 percent, while differences in education levels and returns to education accounted for 12 percent.¹² By 1991, while the overall gender gap had shrunk, family status had become more important than in 1980, accounting for 56 percent of the gap, with age and experience falling to 61 percent of the gap, and education falling to 7 percent. Overall, the share of the gender gap accounted for by differences in characteristics between men and women fell, reflecting women's gains in education and in work experience, while the share accounted for by differences in returns rose, reflecting the increased importance of returns to skills in the labor market.

The regression coefficients in Table 6 also show that the wage coefficient on having one child doubled from 1980 to 1991, while the effect of having two or more children rose slightly. As a result, by 1991, the pay gap between mothers and non-mothers had become larger than the gap between women and men! It is also noteworthy that even if mothers had the same other characteristics as non-mothers in 1991, then the coefficients in Table 6 imply that over 40 percent of the family gap in women's wages would still have remained, because of the penalties to having children.

Are similar family gaps found in other countries? Evidence from Britain points to a pay penalty for women with children (Joshi, 1991) and suggests that family status accounts for an important share of the British gender gap (Waldfogel, forthcoming).¹³ The similarity of the family gap in the United States and Britain is not surprising when one considers that Britain, like the United States, has very little in the way of family policy. Although Britain differs from the United States in having had a national maternity leave policy since 1978, its policy was among the most limited in Europe and in fact covered only about half of all working women until the reforms of 1993. Moreover, Britain lags behind the rest of Europe in child care provision and has the highest rate of women working part-time. Both the United States and Britain also rely more extensively than other countries on private market child care, at a relatively high out-of-pocket cost. If one calculated women's wages net of child care costs, the family gap in these two countries would be even larger.

We have no comparable evidence on family gaps in countries other than Britain, but the information we do have suggests that the gap between mothers and other women, all else equal, may be smaller in other countries that have a more extensive family policy framework. For example, Scandinavian studies find no family penalty for women with children in Sweden (Albrecht et al., 1996) or Denmark (Rosholm and Smith, 1996), while a recent Australian study finds only a small negative effect of children on women's pay (Baxter, 1992).

¹² Differential returns to ethnicity were in women's favor in both years, because the penalty to being African-American or Hispanic was larger for men than for women. Differences in the estimated intercept also narrowed the gap slightly.

¹³ Family status accounted for 48 percent of the gender gap in Britain, as compared to 45 percent in the United States; lost work experience accounted for another 34 percent in Britain, compared to 42 percent in the United States (Waldfogel, forthcoming).

What Causes the Family Gap?

Differences in human capital are clearly very important in explaining the family gap in pay. Consistent with the theoretical work of Becker (1991), there is now a large body of evidence confirming that education and work experience go a long way toward explaining the lower wages of women in general (Blau, forthcoming; O'Neill and Polachek, 1993; Wellington, 1993) and of mothers in particular (Hill, 1979; Waldfogel, 1997a). However, a strong pay penalty for women having children persists even after one controls for differences in education, overall work experience, and full-time and part-time work experience (Waldfogel, 1997a).

What accounts for this remaining family penalty? One hypothesis is that the family gap reflects unobserved heterogeneity. For instance, women with children might be less motivated or might bring less effort to the labor market (Becker, 1985, 1991). The research to date has provided some support for this hypothesis, but lower reported effort does not fully explain the lower wages of women with children (Hersch and Stratton, 1994, forthcoming; Bielby and Bielby, 1988). Moreover, studies that use fixed effects models (for example, difference models or sibling models) to control for unobserved heterogeneity between mothers and other women find that unobserved differences can explain only part of the family gap (Korenman and Neumark, 1992; Neumark and Korenman, 1992; Waldfogel, 1997a).¹⁴

A second hypothesis is that employers discriminate against women with children. Historically, there is evidence of discrimination against married women (Goldin, 1990), but there has been little research on discrimination against mothers. Thus, although there is no shortage of anecdotal accounts of discrimination against women with children, direct evidence on this point is lacking.¹⁵

A third hypothesis focuses on institutional features of the labor market. In recent work, I have emphasized the lack of access to job-protected maternity leave as a structural barrier to the progress of women with children in employment settings that value work experience, job tenure, and a good match between employer and employee (Waldfogel, 1994). This hypothesis is supported by research indicating that breaks in employment at childbirth have long-lasting effects on women's pay (Jacobsen and Levin, 1995). There is also evidence that women who maintain employment continuity over childbirth have higher pay than those who do not (Waldfogel, 1997b). Similar results have been found in British data (Waldfogel, 1995; Joshi, Paci, and Waldfogel, 1996).

¹⁴ A related concern is the potential endogeneity of children. Recent studies that use instrumental variables to estimate the effects of additional children on women's labor supply, like Angrist and Evans (1996), may prove useful here.

¹⁵ Ideally, one would want to compare the wages of mothers, relative to non-mothers, in settings where employers do and do not know employees' parental status. For example, one might compare small and large firms, or employees and the self-employed.

Maternity Leave and Other Possible Remedies for the Family Gap

The potential link between maternity leave and women's pay rests on the assumption that wages rise with both general and firm-specific experience and training, and that workers receive a premium for finding and staying in good job matches. In a labor market with these qualities, job-protected maternity leave may raise women's pay by allowing them to maintain employment with the same employer over the period of childbirth and thus benefit from their firm-specific human capital and their good job match. This positive effect, however, may be offset by a negative effect if women are on leave from work for extended periods of time. Thus, the direction in which a maternity leave policy affects women's wages is theoretically ambiguous (Blau and Ehrenberg, 1997).

There are two possible scenarios for how a change in maternity leave policy will affect women's labor supply (Klerman and Leibowitz, 1997). On the one hand, job-protected maternity leave may induce women who might otherwise have taken just a short period of sick leave to take more time away from work. In this case, the wage effect of the policy would be negative due to the loss in work experience, but the magnitude of this effect would depend on the length of the leave. A leave of twelve weeks, the period provided by the U.S. Family and Medical Leave Act, would have a much smaller effect on work experience, and future wages, than a leave of three years, the period provided by the most recent German legislation.

On the other hand, maternity leave coverage may induce women who would otherwise have left the labor market altogether for a lengthy period of time to instead return by the end of the leave period and to maintain employment continuity with their employer. In this case, the pay effect should be positive, and perhaps substantially so, due to gains in work experience and job tenure and to the maintenance of a good job match. Thus, determining the effect of maternity leave on women's pay, and on the ratio of female/male wages, is an empirical question.

As we saw above, countries that provide greater access to job-protected maternity leave tend to have higher gender pay ratios for women overall and for married women and women with children in particular. This pattern is suggestive, but it would be preferable to have direct evidence of the pay effects of maternity leave. Such evidence is now becoming available. Recent research finds that American women who had maternity leave coverage that allowed them to take a leave and return to their original employer after their most recent birth have higher pay, all else equal, than other mothers who were working prior to their most recent birth but did not have such coverage (Waldfogel, 1997b, forthcoming). There are similar findings for women in Britain (Waldfogel, 1995, forthcoming) and Japan (Higuchi, Waldfogel and Abe, 1998).

Why would women who are covered by maternity leave have higher subsequent pay than other women who were working prior to their most recent birth, but were not covered by a maternity leave policy? One possibility is that these women were more productive workers who had higher wages prior to giving birth as well. There is some evidence that this is the case, particularly among women who were using maternity leave in the 1970s (Waldfogel, 1997b). Second, these women may have

been working for firms that paid higher wages. This explanation makes sense, since maternity leave coverage in the United States has been more common in large firms and unionized firms, and indeed controlling for firm characteristics (including whether the current employer offers maternity leave) explains nearly half of the positive pay effects of having had maternity leave coverage at the time of the last birth (Waldfogel, forthcoming).

The main reason that maternity leave coverage raises women's pay, however, is that it raises the likelihood that women return to work for their prior employer after childbirth. Among young women from the National Longitudinal Survey of Youth (NLSY), for example, 67 percent of those who had formal maternity leave coverage returned to their employer after their most recent birth, as compared to only 47 percent of those lacking such coverage, and this difference was strongly significant even after controlling for preexisting differences among these women (Waldfogel, forthcoming). In recent comparative research using panel data from the United States, Britain, and Japan, Waldfogel, Higuchi and Abe (1997) find that having maternity leave coverage substantially raises the probability that a woman returns to her prior employer within 12 months after childbirth in all three countries, with particularly strong effects in Japan. In each of the three countries, just over half of all women who were in work prior to their most recent birth returned to the same employer within a year after the birth. After controlling for the woman's age, educational level, and whether this was a first or later birth, maternity leave coverage raises retention in all three countries—by 16 percent in Britain, 23 percent in the United States, and 76 percent in Japan.¹⁶

Maternity leave, by raising the likelihood that women stay with the same employer after childbirth, may raise women's subsequent pay. There is evidence that women who return to the same employer after childbirth have higher subsequent wages; in fact, they have wages little different from women who had no children at all. In the National Longitudinal Survey of Youth and National Longitudinal Surveys of Young Women, women who returned to their employer within twelve months after their most recent birth had current wages 11–12 percent higher than women who did not return that quickly; in both cohorts, these higher wages were due in large part to the returning women's higher levels of work experience and job tenure, although unobserved differences also played a small role (Waldfogel, 1997b). Interestingly, women in the NLSY who were covered and returned had higher subsequent wages than those who returned without formal coverage, which suggests that those who had to negotiate leave on an individual basis might be at a disadvantage. Moreover, those who did have coverage and used it to return to their employers had, all else equal, wages about as high as those who had never had children at all (Waldfogel, 1997b, forthcoming). This suggests that providing coverage to women could close the roughly 40 percent of the family gap that is due to the penalties associated with having children. As an upper bound, if all young

¹⁶ Japan recently passed child care leave legislation that provides up to a year of job-protected leave for parents of infants, and there is evidence that this policy, too, raises women's retention (Higuchi, 1996; Pasquale, 1996).

women were covered and took advantage of the coverage to return to their employers after childbirth, the overall gender pay ratio for young women could rise as much as 7 percentage points, from 77 percent to 84 percent. Note, however, that not all women would use the coverage, and that the wage effects for the newly covered women would be smaller if they were in jobs in which the returns to experience, tenure, and a good job match were lower.

Do mandated maternity leave policies have negative effects on the wages or employment of women overall? To the extent that maternity leave is a mandated benefit that imposes costs on employers, theory would suggest that these costs would be passed along to the affected group either in the form of lower wages or lower employment (Summers, 1989). However, in the case of maternity leave, these effects might be counteracted by positive employment or wage effects of the coverage itself. There is now some evidence on this point. Studies of maternity leave mandates in the United States have found no or only small employment or wage effects.¹⁷ These results make sense when one considers that the cost of granting an unpaid maternity leave is typically quite low, and that the period of leave in the United States is usually short.¹⁸ Comparative research has found that short mandated leaves have positive employment effects and no wage effects, while long mandated leaves have negative effects on both employment and wages (Ruhm, forthcoming).¹⁹ These results, too, suggest that, in the case of short maternity leave as seen in the United States, the negative effects on employment and wages are likely to be small or to be offset by positive effects.

It is also important to note that maternity leave need not be a mandated benefit provided by employers. In most other countries, maternity leave is provided as a social insurance benefit, funded by contributions by all workers and firms. This model is also used in the five U.S. states (California, Hawaii, New Jersey, New York, and Rhode Island) that have temporary disability laws that, since the passage of the Pregnancy Discrimination Act of 1978, now cover maternity as well as other forms of disability.

Maternity leave is, of course, not the only possible policy remedy for the family gap in pay. Although it is beyond the scope of this paper to consider other policies in depth, it is worth mentioning the most relevant ones briefly.²⁰ Child care is likely to be especially critical as a remedy for the family gap because of the effect it could have in allowing women to maintain work experience and job tenure, as well as

¹⁷ Kallman (1996) found that state maternity leave laws had a small positive effect on employment and a small negative effect on wages. Waldfogel (1996) found that the FMLA had a slightly positive employment effect and no discernible wage effect. Klerman and Leibowitz (1997) found some positive work effects but the results were sensitive to specification. For a recent review in this journal, see Ruhm (1997).

¹⁸ The case of maternity leave coverage is different from that of health insurance coverage for maternity, which Gruber (1994) found to have negative effects on women's employment and wages. In the health insurance case, in contrast to the maternity leave case, the cost to the employers was not negligible, and there were no anticipated positive wage effects associated with the coverage.

¹⁹ For further evidence on the potential effects of long leaves, see Ondrich, Spiess and Yang (1997a, b).

²⁰ The discussion here focuses on family policies. Not considered here are policies such as minimum wages that would affect the pay of low-skilled women more generally (Card and Krueger, 1995; Fortin and Lemieux, 1997).

continuity of employment over childbirth. There is a great deal of evidence that child care costs and supply constrain women's labor supply (Blau and Robins, 1988; Ribar, 1995), yet very few employers provide child care assistance (BLS, 1997b) and government involvement is uneven (Gormley, 1996). The potential effects of measures to shift the costs of child care from mothers to society and to expand the availability of child care, particularly care for infants, merit further research.

There is also some evidence that rules concerning work hours affect women's decisions about returning to work after childbirth (Eliason and Glass, 1996). Thus, flexible hours policies and policies that allow women to work shorter hours (or at least to decline overtime) are of interest here as well. Of course, part-time or flexible work may bring its own pay penalties. However, there are both good and bad part-time jobs, and those who work part-time voluntarily do not necessarily receive lower wages (Blank, 1990; Ferber and Waldfogel, 1996; Tilly, 1996).

Conclusions

Despite the narrowing of the gender gap in recent years, the family gap in pay between women with children and women without children is, if anything, growing larger. Although women without children have made gains in the labor market, women with children have not kept pace. It is at least as true today as it was a decade ago that for women in America, "the greatest barrier to economic equality is children" (Fuchs, 1988, p. 147).

Why should we be concerned about the family gap? One reason is equity. It is clear that the United States will not be able to achieve full equality of pay and opportunity for women until we address the reasons underlying the lower pay of women with children. Second, measures to reduce the family gap are essential if we are to utilize fully the human capital of all women—including those with children.

There is also a more immediate cause for concern about the family gap. The United States has recently reformed its welfare system to require mothers of even very young children to work. These reforms were predicated on the assumption that single mothers with young children would be able to earn enough in the labor market to support themselves and their families. However, in spite of the recent progress in narrowing the gender gap, the evidence on the family gap indicates that the earnings potential of single mothers is lower than may have been anticipated. While childless women do very well in the labor market today, earning wages very close to men's, women with children have not fared as well, and the position of never-married mothers has actually worsened relative to men and other women over the past few decades. Single mothers now earn only 56–66 percent of what men earn, substantially less than women who are married mothers or not mothers at all; they are also less likely to be in jobs that offer family benefits such as job-protected maternity leave, child care assistance, or flexible work hours. The need for public policies to reduce the family gap for these women is therefore especially urgent.

Equal pay and opportunity policies, while helpful, are apparently not sufficient to overcome the barrier posed by motherhood. If the United States is to raise the pay of women with children, we will have to turn our attention to family policies like maternity leave, child care, and flexible work hours. The evidence on maternity leave reviewed here shows that maternity leave coverage raises women's likelihood of returning to the same job relatively soon after childbirth, which in turn raises women's levels of work experience and job tenure and allows them to maintain good job matches, thus raising their wages as well. Although maternity leave in theory might have negative effects on women's wages or employment, maternity leave at the level now existing in the United States—which is low by the standards of other industrialized nations—does not seem to have a perceptible negative impact.

The United States differs from other industrialized countries not just in its minimal family policy provision, but also in the extent to which the coverage that does exist in the United States is provided by employers rather than government. In the years ahead, expanding policies that support families while avoiding excessive costs to employers that would rebound to affect women workers as a group may well require thinking more creatively about government funding or provision of family benefits such as maternity leave and child care. The passage of the Family and Medical Leave Act in 1993, providing unpaid leave coverage to about half the private sector workforce, was a small step in the right direction, but five years later, the United States still has a long way to go.

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References

- Albrecht, James, Per-Anders Edin, Marianne Sundstrom, and Susan Vroman**, "Parental Leave and Earnings Inequality: Estimates for Sweden," Paper presented at the European Society of Population Economics, Uppsala, Sweden, June 1996.
- Angrist, Joshua and William Evans**, "Children and Their Parents' Labor Supply: Evidence from Exogenous Variation in Family Size," NBER Working Paper 5778, September 1996.
- Arrufat, Jose Luis, and Antonio Zabalza**, "Female Labor Supply with Taxation, Random Preferences, and Optimization Errors," *Econometrica*, January 1986, 54:1, 47–63.
- Baxter, Denise**, "Domestic Labour and Income Inequality," *Work, Employment, and Society*, 1992, 6:2, 229–49.
- Becker, Gary**, "Human Capital, Effort, and the Sexual Division of Labor," *Journal of Labor Economics*, 1985, 3:1, S53–58.
- Becker, Gary**, *A Treatise on the Family*. Cambridge: Harvard University Press, 1991.
- Bielby, Denise, and William Bielby**, "She Works Hard for the Money: Household Responsibilities and the Allocation of Work Effort," *American Journal of Sociology*, 1988, 93:5, 1031–59.
- Blank, Rebecca**, "Are Part-Time Jobs Bad Jobs?" In Gary Burtless, ed. *A Future of Lousy Jobs? The Changing Structure of U.S. Wages*. Washington, D.C.: Brookings, 1990.
- Blau, Francine**, "Trends in the Well-Being of American Women, 1970–1995," *Journal of Economic Literature*, forthcoming.

Blau, Francine, and Ronald Ehrenberg, "Introduction and Summary." In Francine Blau and Ronald Ehrenberg (eds), *Gender and Family Issues in the Workplace*. New York: Russell Sage, 1997.

Blau, Francine, and Lawrence Kahn, "Rising Wage Inequality and the U.S. Gender Gap," *American Economic Review Papers and Proceedings*, May 1994a, 84:2, 23–28.

Blau, Francine, and Lawrence Kahn, "The Gender Earnings Gap: Some International Evidence." In Richard Freeman and Lawrence Katz, eds. *Differences and Changes in Wage Structures*. Chicago: University of Chicago Press, 1994b.

Blau, Francine, and Lawrence Kahn, "Wage Structure and Gender Earnings Differentials: An International Comparison," *Economica*, 1996, 63 (Supplement), S29–S62.

Blau, Francine, and Lawrence Kahn, "Swimming Upstream: Trends in the Gender Wage Differential in the 1980s," *Journal of Labor Economics*, January 1997, 15, 1–42.

Blau, David, and Philip Robins, "Child-Care Costs and Family Labor Supply," *Review of Economics and Statistics*, 1988, 70, 374–81.

Bureau of Labor Statistics (BLS), U.S. Department of Labor, "Wage Series," 1997a.

Bureau of Labor Statistics (BLS), U.S. Department of Labor, "BLS Reports on Employee Benefits in Medium and Large Private Establishments, 1995," Press Release, July 25, 1997b

Card, David, and Alan Krueger, *Myth and Measurement: The New Economics of the Minimum Wage*. Princeton: Princeton University Press, 1995.

Eliason, Scott, and Jennifer Glass, "A Tale of Three Theories: Women's Labor Force Behavior Following Childbirth," Mimeo, University of Iowa, 1996.

Ferber, Marianne, and Jane Waldfogel, "Contingent Work: Blessing and/or Curse?" Working paper, Radcliffe Public Policy Institute, 1996.

Fortin, Nicole, and Thomas Lemieux, "Institutional Change and Rising Wage Inequality: Is There a Linkage?" *Journal of Economic Perspectives*, Spring 1997, 11:2, 75–96.

Fuchs, Victor, *Women's Quest for Economic Equality*. Cambridge: Harvard University Press, 1988.

Goldin, Claudia, *Understanding the Gender Gap: An Economic History of American Women*. Oxford: Oxford University Press, 1990.

Goldin, Claudia, "Career and Family: College Women Look to the Past." In Francine Blau and Ronald Ehrenberg, eds. *Gender and Family Issues in the Workplace*. New York: Russell Sage, 1997.

Gormley, William, *Everybody's Children: Child Care as a Public Problem*. Washington, DC: Brookings, 1996.

Gornick, Janet, Marcia Meyers, and Katherine

Ross, "Public Policies and the Employment of Mothers," *Social Science Quarterly*, forthcoming.

Gottschalk, Peter, "Inequality, Income Growth, and Mobility: The Basic Facts," *Journal of Economic Perspectives*, Spring 1997, 11:2, 21–40.

Gruber, Jonathan, "The Incidence of Mandated Maternity Benefits," *American Economic Review*, 1994, 84:4, 622–641.

Harkness, Susan, and Jane Waldfogel, "The Family Gap in Pay: Evidence from Eight Industrialized Countries." Mimeo, London School of Economics, 1997.

Hersch, Joni, and Leslie Stratton, "Housework, Wages, and the Division of Housework Time for Employed Spouses," *American Economic Review Papers and Proceedings*, May 1994, 84:2, 120–125.

Hersch, Joni, and Leslie Stratton, "Housework, Fixed Effects, and Wages of Married Workers," *Journal of Human Resources*, forthcoming.

Higuchi, Yoshio, "An Empirical Study of Child Care Leave in Japan: Marriage, Childbirth, and Job Retention." Mimeo, Keio University, 1996.

Higuchi, Yoshio, Jane Waldfogel, and Masahiro Abe, "Family Leave and Women's Earnings in the United States, Britain, and Japan," Paper to be presented at the American Economic Association, Chicago, January 1998.

Hill, Martha, "The Wage Effects of Marital Status and Children," *Journal of Human Resources*, 1979, 24:4, 579–94.

Jacobsen, Joyce, and Laurence Levin, "The Effects of Intermittent Labor Force Attachment on Female Earnings" *Monthly Labor Review*, September 1995, 118, 14–19.

Jacobsen, Joyce, and Wendy Rayack, "Do Men Whose Wives Work Really Earn Less?" *American Economic Review*, May 1996, 86:2, 268–73.

Joshi, Heather, "Sex and Motherhood as Handicaps in the Labour Market." In Dulcie Groves and Mavis Maclean, eds. *Women's Issues in Social Policy*. London: Routledge, 1991.

Joshi, Heather, Pierella Paci, and Jane Waldfogel, "The Wages of Motherhood: Better or Worse?" Discussion paper, Suntory and Toyota International Centres for Economics and Related Disciplines (STICERD), London School of Economics, 1996.

Joshi, Heather, Pierella Paci, and Jane Waldfogel, "What Do We Know About Unequal Pay?" In Heather Joshi and Pierella Paci, eds. *Unequal Pay*. Cambridge: MIT Press, 1998, forthcoming.

Kallman, Carol, "Wage, Hours, and Employment Effects of State Legislation Mandating Maternity Leave," Mimeo, Boston College, 1996.

Klerman, Jacob Alex, and Arleen Leibowitz, "Labor Supply Effects of State Maternity Leave Legislation." In Francine Blau and Ronald Eh-

renberg, eds. *Gender and Family Issues in the Workplace*, New York: Russell Sage, 1997.

Korenman, Sanders, and David Neumark, "Does Marriage Really Make Men More Productive?" *Journal of Human Resources*, 1991, 26:2, 282–307.

Korenman, Sanders, and David Neumark, "Marriage, Motherhood, and Wages," *Journal of Human Resources*, 1992, 27:2, 233–55.

Loh, Eng Seng, "Productivity Differences and the Marriage Wage Premium for White Males," *Journal of Human Resources*, 1996, 31:3, 566–89.

Neumark, David, and Sanders Korenman, "Sources of Bias in Women's Wage Equations: Results Using Sibling Data," *Journal of Human Resources*, 1994, 29, 379–405.

Ondrich, Jan, C. Katharina Spiess, and Qing Yang, "Barefoot and in a German Kitchen: Federal Parental Leave and Benefit Policy and the Return to Work after Childbirth in Germany," *Journal of Population Economics*, August 1996, 9:3, 247–66.

Ondrich, Jan, C. Katharina Spiess, and Qing Yang, "The Effect of Children and Maternity Leave on Women's Pay in Germany," Paper presented at the European Society of Population Economics, Colchester, England, June 1997.

O'Neill, June, and Solomon Polachek, "Why the Gender Gap in Wages Narrowed in the 1980s," *Journal of Labor Economics*, 1993, 11:1, 205–28.

Pasquale, Margaret, "Child Care Leave and Its Impact on Fertility and Retention in the Firm for Married Women Employees in Japan," Mimeo, Columbia University, 1996.

Ribar, David, "A Structural Model of Child Care and the Labor Supply of Married Women," *Journal of Labor Economics*, July 1995, 13:3, 558–97.

Rosholm, Michael, and Nina Smith, "The Danish Gender Wage Gap in the 1980s: A Panel Data Study," *Oxford Economic Papers*, April 1996, 48:2, 254–79.

Ruhm, Christopher, "Policy Watch: The Family and Medical Leave Act," *Journal of Economic Perspectives*, 1997, 11:3, 175–86.

Ruhm, Christopher, "The Economic Consequences of Parental Leave Mandates: Lessons from Europe," *Quarterly Journal of Economics*, forthcoming.

Sorensen, Elaine, *Exploring the Reasons Behind the Narrowing Gender Gap in Earnings*. Washington, D.C.: Urban Institute, 1991.

Summers, Lawrence, "Some Simple Economics of Mandated Benefits," *American Economic Review*, May 1989, 79:2, 177–83.

Tilly, Chris, *Half a Job: Bad and Good Part-time Jobs in a Changing Labor Market*. Philadelphia: Temple University Press, 1996.

Waldfoegel, Jane, "Women Working for Less: Family Status and Women's Pay in the U.S. and U.K." Ph.D. thesis, Harvard University, 1994.

Waldfoegel, Jane, "The Price of Motherhood: Family Status and Women's Pay in a Young British Cohort," *Oxford Economic Papers*, October 1995, 47:4, 584–610.

Waldfoegel, Jane, "The Impact of the Family and Medical Leave Act on Coverage, Leave-Taking, Employment, and Earnings," Mimeo, Columbia University, 1996.

Waldfoegel, Jane, "The Wage Effects of Children," *American Sociological Review*, April 1997a, 62, 209–17.

Waldfoegel, Jane, "Working Mothers Then and Now: A Cross-Cohort Analysis of the Effects of Maternity Leave on Women's Pay." In Francine Blau and Ronald Ehrenberg (eds), *Gender and Family Issues in the Workplace*. New York: Russell Sage, 1997b.

Waldfoegel, Jane, "The Family Gap for Young Women in the United States and Britain: Can Maternity Leave Make a Difference?" *Journal of Labor Economics*, forthcoming.

Waldfoegel, Jane, Yoshio Higuchi, and Masahiro Abe, "Maternity Leave Policies and Women's Employment after Childbirth: Evidence from the United States, Britain, and Japan," Paper presented at the European Society of Population Economics, Colchester, England, June 1997.

Wellington, Alison, "Changes in the Male/Female Wage Gap, 1976–1985," *Journal of Human Resources*, 1993, 28:2, 383–411.

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