

# Gender and the Labour Market

## Econometric Evidence of Obstacles to Achieving Gender Equality

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# 1

## The Feminization of Work in the USA: A New Era for (Man)kind?

*Richard B. Freeman*

Consider the following anecdotes about males (Ms) and females (Fs) in the USA.

M once worked as a union organizer, but now he is a freelance journalist, with variable income and no health care. How can he afford to take this job? Because his wife has a full-time position with a major health maintenance organization.

F is a full-time doctor with four children, married to an inventor/entrepreneur who hopes to create the next Microsoft but has not (yet) hit upon the right window. How can this family afford the risk of entrepreneurship? Because F earns a doctor's income.

M is a 35-year-old PhD in biology, earning \$30 000 per year with no health care as a post-doctorate employee in a large plantation-style laboratory. Yet he and his spouse bought a house and hope to start a family. Why? Because his wife is a well-paid professional working in the federal government.

F graduated with a PhD in economics and has a successful career working for a major international organization. For several years her husband was an unemployed writer. How could he afford the artsy life? Because ...

These cases are not the exceptions that prove the rule that mean are the major breadwinners in the US economy but rather part of a general and growing movement in the economy of increased importance for women's market work. The statistics show that the labour market for women workers has changed sufficiently dramatically in the past 20–30 years to make these cases normal rather than abnormal, and to justify the 'new era' title of this chapter.

The trend rise in the employment of women underlies the US jobs miracle. Employment growth in the US is female employment growth.

And the most rapid areas of female employment growth are in the higher rungs of the skill ladder. Consistent with the anecdotes sketched above, an increasing proportion of women have come to be higher paid than their spouses or potential spouses.

The trend towards the feminization of work is set to continue for some time. The main indicator of this is that more women than men are obtaining higher education. In the 1990s, the enrolment rate of female high-school graduates into college rose above that for male high-school graduates. In 1997, the rate for women was the highest it had been in US history: 11 per cent above the rate for men.<sup>1</sup> This reverses a historic pattern that persisted through the mid-1980s of greater male than female enrolments into college relative to the high-school graduate population. Because there are more female than male high school graduates, the difference in enrolment rates translates into a 16 per cent difference in enrolments. Because women have a higher graduation rate than men, US colleges and universities graduated over 20 per cent more women than men throughout the 1990s. Looking into the twenty-first century, the increased female enrolment rate in the 1990s will raise the number of highly-educated women relative to the number of highly-educated men to unprecedented levels. Since education is a key determinant of earnings, the income of women will rise relative to that of men and the proportion of women with earnings greater than those of their spouse or potential spouse will also increase to unprecedented levels.

This trend has significance not only for the labour market but also for living arrangements and gender relationships. It is now normal in about three in ten American dual-earner families for women to be higher paid than men. While life is not all about money, market earnings are an important determinant of behaviour, and the greater market earnings of women are likely to have significant consequences for how women and men behave towards each other, towards the family structure, and towards how people arrange their lives.

This chapter examines the increased proportion of women with higher hourly earnings than those of their mates due to the change in the job market in the 1980s to late 1990s. Section 1 documents the basic facts about female employment and pay compared to that of their mates/potential mates (the feminization of work part of the title). Section 2 explores the potential causes and consequences of this transformation of the job market (the new era part of the title). In addition to published information, this study uses two micro data files to examine the upward trend in the relative economic position of

women: the March Current Population Survey files, which has a family identification code that allows us to develop a large sample of dual-earner married couples over three decades; and the 1997 National Study of the Changing Workforce, which provides information on the allocation of time of spouses to household chores as well as to work.

## 1 The feminization of work

The starting point for appreciating the impact of the increased role of women on the US economy is the simple observation that the great US jobs 'miracle' – the huge increase in the employment to population ratio which contrasts with declining employment to population ratios in the EU – is the result of an increase in female employment. This is documented in Table 1.1. In 1973 the ratio of employment to population in the USA and the OECD countries of Europe was the same. Women in the USA had a modestly higher employment to population ratio than women in the OECD, while men had a slightly lower employment to population rate in the USA than in the OECD. Between 1973 and 1997 the employment to population ratio rose in the USA by a remarkable 8.4 percentage points. The ratio fell slightly for men, but increased by 19.1 percentage points for women! Because increased enrolments in school and early retirement of men were more prevalent in the EU than in the USA, the male employment to population rate

*Table 1.1* Employment as a percentage of population in the USA and OECD countries of Europe, 1973–97

	1973	1997	Change
<i>All</i>			
USA	65.1	73.5	8.4
OECD	65.1	59.5	-5.6
Difference	0.0	14.0	14.0
<i>Females</i>			
USA	48.0	67.1	19.1
OECD	43.2	48.3	5.1
Difference	4.8	18.8	14.0
<i>Males</i>			
USA	82.8	80.1	-2.7
OECD	86.7	70.6	-16.1
Difference	-3.9	9.5	14.4

Sources: OECD (1996), Table A and OECD (1998), Table B.

fell more rapidly in the EU than in the USA, contributing significantly to the overall USA-EU employment gap.

However, the jobs miracle in the USA (the fact that the national employment to population ratio rose) is not a story of male employment but of the large increase in female employment. Had the employment to population ratio of US women increased from 1973 to 1997 by the same percentage points as did the employment to population ratio of EU women, the aggregate US employment to population rate would have been virtually constant at 65 per cent. With everything else staying the same, the movement of women into (largely full-time) work added about 9 percentage points to the total employment rate in 1997, which represents nearly two-thirds of the 14 percentage point difference between US and European employment rates in 1997.

The biggest increase in female involvement in market work occurred among married women with young children. Between 1960 and 1996 the proportion of married women with children younger than 6 who were working increased from 18.6 to 63.6 per cent. The proportion of married women with children younger than 6 in the work force in 1997 was way above the proportion of married women with children of school age (6 to 17) working in 1960 (39.0 per cent), and was just 22 percentage points below the proportion with children of school age working in 1997 (77.6 per cent).<sup>2</sup> The contrast with Western European women is striking. More American women with pre-school children participated in the labour force in 1996 than did all European women, many of whom do not have children. This occurred without national day care facilities or the state hiring a majority of women, as in some Nordic countries, or with labour laws that give parents paid leave or other benefits to ease the burden of child care.

What about women in single-parent families? While most analyses of female-headed homes focuses on women on welfare, the majority of mothers in homes with absent fathers work and, as Table 1.2 shows, their working has a much greater effect in lifting their families out of poverty than does child support and welfare. Employment of women is thus critical not simply to maintaining or raising US family incomes in two-earner families but in keeping single-parent families above poverty. This fact underlies the welfare reforms that the USA enacted in the 1990s to push single mothers from welfare into work. Popular sentiment for the welfare reform has this logic: if the majority of mothers work, and if the majority of single-parent mothers work enough to keep their families above poverty, why should society pay for other single-parent mothers to live on welfare, at below poverty levels?

Table 1.2 Percentage of families above poverty in absent father homes, by mother working and child support

Mother works	Child support		
	None	Partial	Full
Yes	0.84	0.88	0.91
No	0.32	0.38	0.63

Source: Adapted from Freeman and Waldfogel (January 1999), Table 1.

A huge influx of any group of workers into the job market, such as women in the 1970s and 1980s, can be expected, other things being equal, to reduce their earnings and occupational position. This did not occur in the USA. The earnings of women relative to men rose by about 10 log points between the 1970s and 1990s.<sup>3</sup> And, as Table 1.3, shows, women moved increasingly into the higher paid occupations during the time they were increasing their share of the work force. In 1983 women were 29 per cent less likely to be in the high-wage executive and professional occupations than men (0.22/0.31). In 1997 they were 11 per cent more likely to be in those occupations (0.28/0.25). While many women found employment in the growing service industries, the proportion in service occupations fell.

Table 1.3 The occupational distribution of female and male workers

	Women		Men	
	1983	1997	1983	1997
<i>High-wage occupations</i>	0.22	0.31	0.25	0.28
Executive	0.08	0.14	0.13	0.15
Professionals	0.14	0.17	0.12	0.13
<i>Medium-wage occupations</i>	0.48	0.43	0.40	0.38
Technical	0.03	0.04	0.03	0.03
Sales	0.13	0.13	0.11	0.11
Clerical	0.30	0.24	0.06	0.06
Craft and Precision Production Workers	0.02	0.02	0.20	0.18
<i>Low-wage occupations</i>	0.29	0.25	0.31	0.30
Operators, Fabricators, and Labourers	0.10	0.08	0.21	0.20
Service	0.19	0.17	0.10	0.10

Source: US Statistical Abstract (1998), Table 672.

### Many women earn more than spouses

The reduction in the gender wage differential coupled with the high and increasing dispersion of wages in the USA suggests that a sizeable and increasing proportion of women have higher pay than their husbands. This is not a logical necessity. When the means of two independent distributions move closer together, the area of overlap must increase, but the distribution of the earnings of wives and husbands are not independent at a point in time or, given the increased proportion of women who work, over time. Assortative mating could produce a situation in which the gender wage differential would fall without increasing the number of women earning more than their husbands. This would occur if, for instance, men and women were perfectly sorted in the earnings distribution: the top-earning man married to the top-earning woman, and so on. In this case, a large reduction in the gender wage gap would reduce the differential between mates without increasing the proportion of families where women earned more than men. More generally, the stronger is assortative mating, the smaller will be the likely effect of a fall in the gender wage gap on the proportion of women with higher earnings than their mate.

Over time, the selectivity of women into the work force also has the potential to weaken the link between the gender wage gap and the proportion of women earning more than their mates. If women enter the work force first from families where they have relatively high skills compared to those of their mates and then later from families in which their skills are relatively lower compared to their mates, the proportion of women with higher earnings than their mates could be only loosely related to the gender wage differential.

Table 1.4 shows that neither of these factors dominates the pattern of husband-wife earnings in the USA. Instead, as the gender wage gap has fallen, a large and increasing proportion of women have come to make more than their husbands. The table is based on calculations of hourly earnings and annual incomes for wives and husbands in dual-earner families from the March Current Population Survey (CPS) files for the USA in 1971, 1981 and 1997.<sup>4</sup>

The first column in Table 1.4 gives the percentage of wives who worked. As noted, it is high and rising. The second column gives the percentage of working wives with hourly earnings greater than the hourly earnings of their husband. It shows that 29 per cent of working wives made more than their husband in 1996, an 11 percentage point increase over 1980. The third column gives the percentage of working wives with *incomes* greater than their husband. In 1996, 21 per cent of

Table 1.4 Percentage of women with higher earnings than their husband, 1970–96

	% wives who work	% wives whose hourly earnings > husbands	% wives with higher annual earnings than husband
<i>All</i>			
1970	50	–	10
1980	65	18	11
1996	76	29	21
<i>White, by education of women</i>			
High-school graduates			
1970	49	–	6
1980	64	13	8
1996	77	21	15
Some college			
1970	48	–	10
1980	69	18	9
1996	80	28	19
College: 4 or 4+ years			
1970	60	–	18
1980	74	27	16
1996	84	39	28
<i>Blacks</i>			
1970	67	–	18
1980	77	23	16
1996	82	36	30

Source: Tabulated from *Current Population Survey, March Files* for 1997, 1981 and 1971. The sample sizes for the 'All' group were: 1970, 14 000; 1980, 17 224; 1990, 12 082. All analyses exclude individuals with only self-employment or farm income and those with wages < \$2 or > \$200 per hour in 1996 dollars.

American women who worked had incomes greater than that of their spouses. This proportion is lower than that for the percentage of American women having wages higher than that of their spouses for the simple reason that women tend to work fewer hours than men. Women work fewer hours because they are more likely to have part-time jobs and also because they work fewer hours at full-time jobs.<sup>5</sup> The percentage of women with higher incomes with their husband was roughly constant between 1970 and 1980 and then rose sharply in the 1980s and 1990s.

The remainder of the table focuses on some specific groups: white high-school graduates; whites with some college education; whites with 4 or more years of college; and all black women. Among college graduate women, the proportion earning more than their husbands rises from 27 per cent in 1980 to 39 per cent in 1996. The 39 per cent is a remarkable statistic. One might suspect that the figure is high because a proportion of women with college degrees are married to men without such degrees, but in fact this is not the major reason for the high proportion. Comparisons limited to families where both spouses have college degrees show that in these families nearly as large a proportion of college graduate women earn more per hour than their mates (as the anecdotes at the outset indicate), as in the figures shown in Table 1.4. Among all black women 36 per cent earned more than their husbands in 1996 (nearly the same rate as for college graduate white women) and 30 per cent earned more annually than their husbands.

#### **Women are more numerous in higher education and top jobs**

In the 1970s men were much more likely to obtain college degrees than women. Men made up the vast majority of employees in occupations that required post-graduate education: law, medicine, PhD scientific research and academic staff.

Table 1.5 shows that this pattern has undergone a massive change in the past 20–25 years. In 1971 women were 25 per cent less likely to earn a bachelor's degree than men. In 1996, they were 21 per cent more likely to earn such a degree. For master's degrees, we see the same pattern, with 22 per cent more women obtaining degrees than men. Among PhDs the trend towards more female PhD graduates is the same, but men continue to obtain more degrees than women. However, in many fields over a quarter of PhDs are awarded to foreign students, mostly men, so that among US citizens the difference in the number of PhDs awarded by gender is closer to unity than the aggregate figures indicate. The movement of women into professional

*Table 1.5* The ratio of female to male degree recipients

	1970/71	1995
Bachelor's	0.75	1.21
Master's	0.67	1.22
PhDs	0.16	0.64
MDs	0.09	0.64
Law	0.06	0.75

degrees (beyond education) is also striking. In 1971 the ratio of female to male MDs (medical qualifications) awarded was just 0.09; the ratio in law was 0.06. While the number of women getting degrees in these areas has not attained equality with the number of men, the movement towards women is striking. No longer do you have to be Wonder Woman to advance in these fields.

Table 1.6 shows the effect of the flow of women into higher education on the gender composition of various traditionally male high skill occupations. The table records relative representation rates for women in these occupations. The relative representation rate is the proportion of women in an occupation divided by the proportion of women in total employment. When the relative representation statistic is unity, the proportion of women in the field is the same as the proportion of women in total employment. When the statistic is below one, women are less represented in the field. When it is above one, they are more represented. Women have always been highly represented in the professions because around 80 per cent of school teachers and 90 per cent of nurses have been women, but women have rarely worked as lawyers, physicians or architects, and have been underrepresented in the broader management category. The trend upward in those fields is striking. In non-academic economics (the *Current Population Survey* (CPS) occupation largely covers economists working in business or government, as academics are classified as professors) the table shows a rise in the female representation from 13 percentage points below unity to 18 points above unity. The huge flow of women into higher paying top skill jobs is an important contributing factor to the increased number of women who earn more per hour than their mates.

With the proportion of women obtaining bachelor's and master's degrees and higher level degrees in the best-paying fields, the feminization of good jobs in the USA is almost certain to continue into the future. The upward trend in the proportion of women earning

*Table 1.6* Relative representation of women in top occupations

	1983	1996
Management	0.79	0.96
Lawyers	0.35	0.62
Doctors	0.36	0.58
Professors	0.83	0.92
Economists	0.87	1.18

Source: *US Statistical Abstract*, 1998, Table 672.

more than their mates will also continue, requiring more and more American couples to adjust to the economic reality that the woman will be the higher-paid member of the couple. Economic theory gives us some clues as to the direction of such adjustments (substitution of work within the household from the woman to the man, family geographic mobility based on the woman's employment opportunities, greater allocation of the benefits of marriage to women, and so on) but tells us nothing about the possible magnitude of adjustments or the psychological and social problems they may entail.

The experiences of the one sub-population in the USA that has a relatively long experience with a substantial number of women earning more than men – the African-American population – suggests that the adjustment, particularly among men, may not be an easy one. Among African-Americans some 400 000 or so more women than men were enrolled in college in 1996. Using National Center for Education estimates this is a 66 per cent difference in the number enrolled by gender. Using CPS data, which show more enrolments of both men and women, the gender differential is 'only' 48 per cent.<sup>6</sup> On the employment front, 12 per cent more black women than men aged 20 and above were working in 1997, which contrasts sharply with the situation among whites, where 21 per cent more men than women work.<sup>7</sup> As noted, in 1996, 36 per cent of African-American women earned more per hour than their mates and 30 per cent had higher annual earnings than their mates. Partly as a consequence of these economic patterns, a distinguishing characteristic of the black community, particularly at the lower skill levels, is the presence of a strong matriarchal structure. Among African-Americans 37 per cent of women in 1997 had never been married compared to 15 per cent of white women;<sup>8</sup> and 58 per cent of family groups with children under 18 years of age were maintained by the mother compared to 21 per cent among whites.<sup>9</sup> As a result of these patterns, there is considerable concern among blacks about the relations between the genders resulting from their disparate economic situation, and numerous articles in popular magazines about the difficulties that face black college-educated women in particular in finding suitable mates.

However, black women do well compared to black men in the job market not because they earn exceptionally high salaries but because black men do relatively poorly, with twice the national average unemployment, greater involvement in crime (28 per cent of black men will spend some time in prison, according to the Justice Department<sup>10</sup>), and still have lower hourly earnings than white men. Moreover, the

overall income and wealth of blacks falls far short of that of whites. For these reasons the pattern of adjustment among blacks may not generalize to the rest of the society. Still, there is surely much to learn from the African-American case. At the very least, it suggests that adjustments to a change in gender earnings patterns may not be easy.

## 2 Causes and consequences

Why has the feminization of work and, in particular, of good jobs in the USA been so rapid and more extensive than in other countries?

There is no clear answer. As is the case with many other important economic changes – slowdown of productivity growth, rise of inequality, shift in age earnings profiles, stagnation in real earnings – no set of measurable factors can account for the feminization of work. To account for concurrent rise of female employment and earnings requires a sizeable shift in demand for women relative to any exogenous increase in the female work force. But economics has neither much theory nor empirical measures of the factors that cause large shifts.

In an accounting sense, a significant proportion of the increase in female employment can be attributed to the shift in the industrial composition of employment towards the service sectors, where women have traditionally been overrepresented. Between 1978 and 1998, the proportion of workers in services rose from 29 per cent to 37 per cent of the non-agricultural work force. In 1978, 42 per cent of women were employed in services where they made up 61 per cent of the work force. In the rest of the economy, women made up just 34 per cent of the work force. Applying a fixed coefficient shift-share analysis to these data, the increased share of employment in services raised the proportion of women in the overall work force by 2.2 percentage points. In fact, between 1978 and 1998 the female proportion of the work force increased by 5 percentage points.<sup>11</sup> Thus, about half of the increase in female employment can be explained mechanically by the shift in industrial composition.

The same shift cannot explain the rise in female wages, however, since services tend to be a lower-paid area of employment. And if we look at occupations, traditionally female-intensive occupations increased employment a bit less rapidly than traditionally male intensive occupations in the period under study.

What about the two factors that economists and others cite as the most plausible explanations for the rise of inequality that has attracted great attention: trade and technology?

Trade with less-developed countries tends to be disproportionately in female-intensive sectors, such as apparel, so that trade should have reduced, not raised, the relative demand for women. Technology in the form of computer use at least may offer some explanatory power, since women tend to use computers to a greater extent than men but the main area in which women report using computers more than men is in sales and telemarketing, the latter of which is hardly a high-wage 'good' job.<sup>12</sup> As the 1990s has proceeded, however, computer usage has risen among all groups, reducing the female advantage (Friedberg, table 2), with no apparent effect on the rate of change in earnings and employment between men and women.

Since an important part of the rise of female employment has taken the form of women breaking into white-collar male intensive occupations, some part of the increased demand is potentially due to institutional changes that opened those areas for women. But the Civil Rights Act that prohibits discrimination was passed in 1964, and affirmative action became effective in the 1970s, whereas women made gains in the job market largely in the 1980s and 1990s. Perhaps these laws catalysed a general change in attitudes in the country that took a long time to alter labour market outcomes. But rather than trying to weave such a story, I will take the feminization of work as given and turn to the potential consequences of this development on the allocation of time within households.

### Dividing household and market work

Economic analysis suggests that increased female work and earnings relative to men will lead to a re-allocation of household production activities. Given a household production function where male and female time are substitutes, higher wages of women should lead to a shift in the burden of household chores towards men. Other things being equal, families in which women's earnings are high relative to those of men should allocate more male time and less female time to daily chores. Over time, the amount of housework done by men should rise and that done by women should fall.<sup>13</sup>

The 1997 *National Study of the Changing Workforce* provides information about the allocation of spousal time to various activities, ranging from work to chores to watching children, and thus facilitates a comparison of the allocation of time among families. The Study asks respondents about the hours they work, the hours they spend on household chores on work days and on non-work days, the hours spent commuting, and asks those with children how much time they

spend on child care on home and work days. The Study obtains time allocations by interviewing people rather than by collecting time diaries, which may be more accurate (Juster and Stafford, 1991). It asks a single respondent about the time spent on the specified activities by them and by their spouse. As the respondents are roughly evenly divided between men and women, there is no reason to expect any systematic bias in the reported allocations of time according to gender, though respondents of either gender may report their own and their spouses' time with different accuracy.

Table 1.7 records the average hours per week that individuals report devoting to these different activities, divided by whether or not the family has children. Consistent with diverse evidence about the time that Americans devote to work, the table shows that the average dual-earner family contributes many hours to the job market. Men average some 49 hours per week and women work 39 to 43 hours, exclusive of

Table 1.7 Allocation of hours per week by men/women in dual-earning households

	Females	Males	Difference
<i>Dual earners without children (n = 525)</i>			
<i>Workdays</i>			
Hours worked per week	42.7	48.5	-5.8
Hours commuting $\times 5$	3.4	4.7	-1.3
Hours chores per day $\times 5$	12.6	9.2	3.4
<i>Non-work days</i>			
Hours chores per day $\times 2$	10.5	8.8	1.7
Total hours 'worked' per week	69.2	71.2	-2.0
<i>Dual earners with children (n = 722)</i>			
<i>Workdays</i>			
Hours worked per week	39.1	49.0	-9.9
Hours commuting per day $\times 5$	3.7	4.3	-0.6
Hours chores per day $\times 5$	15.5	9.5	6.0
Child care hours per day $\times 5$	16.0	11.0	5.0
<i>Non-work days</i>			
Hours chores per day $\times 2$	11.8	9.2	2.6
Child care hours per day $\times 2$	15.8	12.2	3.6
Total hours 'worked' per week	101.9	95.2	6.7

Source: Tabulated from 1997 *National Study of the Changing Workforce*, Computer Data File.

commuting time. If we add 4–5 hours of commuting time for men, we get 53 hours of time on work activities. Commuting time is somewhat lower for women, but even so their time on work activities averages 46 hours for those without children and 43 hours for those with children.

In families without children, the total amount of time spent working and on household chores is quite similar for women and men. Women spend more time on chores than men on working days and on non-working days. The total hours that they spend on chores exceeds those of men by about 30 per cent: 5.1 hours per week. But this is offset by the greater amount of time that men work. Total time in the market and in household production turns out to be a bit less for women than for men, suggesting that, in families without children, the genders put in a reasonably even amount of time to productive activities. Consistent with this, in response to a question on the Changing Workforce Study about wanting more free time for themselves, the proportion of men and women without children who report that they wanted more such time differed only modestly: 60 per cent of women compared to 54 per cent of men so report.

The situation is quite different with the advent of children. The time that women spend at work is somewhat lower with the presence of children, but time spent on household chores rises substantially and a huge chunk of time is allocated to children. By contrast, the amount of time that men work barely changes, and the time they spend on chores increases only slightly with the presence of children. Most important, male child-care hours fall considerably short of those of women. The result is that the presence of children increases the total amount of time spent on productive household and job market activities considerably more for women than for men, producing a 6.7 hour difference between them. Consistent with this, on a qualitative question on the Changing Workforce Study, a much larger proportion of women with children report that they want more time for themselves (80 per cent) than is reported by men with children (62 per cent). This 18-point differential in couples with children compares to the 6-point differential among couples without children given earlier. In addition, in response to another qualitative question, a much larger proportion of women than men want their spouse to undertake more household chores (50 per cent of the women report this compared to 18 per cent of the men).

Since male wages remain higher on average than female wages and since females are biologically more adept at some child-rearing activ-

ities, the fact that men work more house than women at workplaces while women put in more hours in household chores and in child-rearing makes economic sense. But economic analysis also predicts that these allocations of time will differ among otherwise similar families depending on the relative wages of women. When women earn more than their husbands, the family should allocate more of the women's time to the job market and less to household chores and child care, replacing their time with that of their lower-paid mates. Does the Changing Workforce survey support this prediction?

Table 1.8 presents data designed to answer this question. It gives the allocation of time to work, chores and child care for persons in the top quintile and in the bottom quintile of dual-earner families sorted by the ratio of the wage of the woman to her spouse. The top quintile contains couples for whom the female to male ratio of hourly earnings is high: on average women in this group earn per hour 0.66 in points more than their husband. In the bottom quintile they earn 1.20 log points less than their husband.

Among families without children, there is some weak evidence that the family substitutes household time relative to work time between men and women in response to differences in hourly pay. Women in dual-earner families where they wages are high compared to the wages of their spouse work more hours and spend less time on chores than women in dual-earner families where they wages are low relative to those of their mates. The ratio of household chores to hours worked among women falls from 0.57 for women in the low quintile group to 0.40 for women in the high quintile group. But the men in families where women's wages are relatively high also work many hours and put in less time at chores. Still, the difference in the gaps suggests some re-allocation of time in the expected direction. The ratio of household chore time to work time falls by 30 per cent for women compared to 16 per cent for men. Given the huge gender pay wage differences between families in the upper quintile and lower quintiles of the distribution of relative wages, however, the implication is that the elasticity of substitution in the allocation of family work time between household and labour market work is quite small.

Among families with children, the evidence of any substitution of time within the family is smaller. Instead, what stands out in Table 1.8 is the greater time that women and men in families where women earn more devote to both work and child care. Most striking, women with relatively high wages spend more time on child care than women with relatively low wages. The ratio of time spent on children and chores to



Table 1.8 Difference in the allocation of time among families with high/low female to male (F/M) hourly earnings

	Female time by F/M wages		Male time by F/M wages	
	Bottom quintile	Top quintile	Bottom quintile	Top quintile
<i>Dual earners without children (n = 365)</i>				
<i>Workdays</i>				
Hours worked per week	39.9	45.7	46.0	50.3
Hours chores per day ×5	13.5	10.0	9.5	8.5
Hours commuting ×5	2.9	4.0	5.6	4.4
<i>Non-work days</i>				
Hours chores per day ×2	11.0	10.0	10.2	9.0
Total hours 'worked' per week	67.3	69.7	71.3	72.2
Total hours on household	24.5	20.0	19.7	17.5
Total hours on job	42.8	49.7	51.6	54.7
Ratio of household hours to job hours	0.57	0.40	0.38	0.32
<i>Dual earners with children (n = 522)</i>				
<i>Workdays</i>				
Hours worked per week	35.7	40.9	48.7	50.2
Hours chores per day ×5	16.5	15.5	8.0	9.5
Hours commuting per day ×5	3.0	4.4	5.0	3.5
Child care hours per day ×5	14.5	17.0	9.0	12.0
<i>Non-work days</i>				
Hours chores per day ×2	10.6	11.8	9.2	8.8
Child care hours per day ×2	12.0	17.6	10.0	12.6
Total hours 'worked' per week	92.3	107.2	89.9	96.6
Ratio of hours on children/chores to total time	0.52	0.58	0.40	0.46

Source: Tabulated from *The 1997 National Study of the Changing Workforce*, Computer Data File.

time spent at work rises by the same percentage points (6) for men and women between the high and low quintile families. Since the ratio is smaller for men than for women, the result is a slightly larger percentage increase for men. Given the huge difference in wages between the groups, the implication is that any substitution in the allocation of time in response to differences in male to female wages is small indeed.

One interpretation of these results is that the data are dominated by unobserved personal differences among families. Women who work a

lot and earn a lot may have higher energy levels/ability than women with lower earnings and income, and they may marry men with similar attributes. In these couples, both women and men put in many hours in both home and work activities. It is also possible, however, that several home chores are done jointly, so that the substitutability of male for female time is quite limited; the differential allocation of time to children may reflect differences in child-rearing productivity that makes the choices economically rational. Because the National Study of the Changing Workforce is a cross-section (rather than a longitudinal) file, the survey does not allow us to investigate how given families respond to changes in female to male earnings opportunities.

What about families of the type described in the initial anecdotes: that is, those in which women contribute more to family income than do men? In these families, women have relatively high earnings and also work many hours. Table 1.9 shows that among these families there is considerable evidence of substitution of time between men and women. This table sorts families by the ratio of *annual* earnings of women to men, rather than as before by the ratio of hourly earnings. It shows that in families where women contribute the most to family income they work many more hours compared to families where the

Table 1.9 Allocation of time between families where women contribute large/small portion of family income

	Female time by F/M annual earnings		Male time by F/M annual earnings	
	Bottom quintile	Top quintile	Bottom quintile	Top quintile
<i>Dual earners without children (n = 365)</i>				
Hours' chores per week	23.1	20.1	16.6	16.9
Hours at work + commuting per week	35.7	52.3	56.5	48.0
<i>Dual earners with children (n = 522)</i>				
Hours' chores per week	30.5	26.2	17.9	20.2
Hours' work + commuting per week	30.3	50.4	48.7	50.2
Child care hours per week	32.7	31.2	20.3	23.8

Note: Chores per week obtained as in Tables 1.7 and 1.8 by chores per day ×5 on workdays and chores per day ×2 on home days. Child care hours per week are also the sum of hours per workday ×5 and hours per homeday ×2.

Source: Tabulated from *The 1997 National Study of the Changing Workforce*, Computer Data File.

man contributes the most to family income. In the high female annual earnings families, men work fewer hours and put in more time on household chores and child care per week. Still, total time spent on work/household work in those families exceeds that for men in families without children and in those with children. The difference in the amount of household chores between families where women are the main breadwinners and where men are the main breadwinners are not all that large. Even in the top quintile families, where women earn more than men, they continue to do more household chores than their husbands, both in families with children and in families without children. As it is hard to see why men cannot physically do more household chores, it may be that the elasticity of substitution between male and female time in household activities is small for historical/cultural reasons.

### 3 Conclusion

The feminization of work and improved market position of women in the USA is one of the most important developments in the American economy and society. What has happened to women should not be viewed as an issue for gender studies or women's caucuses, but rather as something with ramifications for the entire economy, from aggregate jobs growth to determination of living standards.

At the micro level, *The 1997 National Study of the Changing Workforce* shows some difference in the allocation of male and female time in response to differences in the pay of women relative to their spouses, but those differences in allocation are rather modest. Still, as more and more women earn more than men, the economic pressures for a reallocation of market and household production activity between the genders will surely rise. While men and women in families without children seem to have a reasonably balanced allocation of time, children make disproportionate demands on female time, which is not particularly dependent on the relative wage of women and men in the family.

At the aggregate level, if Western Europe is to mimic the US 'jobs miracle', it will have to change the gender situation in the job market dramatically, which may in turn require institutional and regulatory changes that are usually off the map of advocates of flexible markets and increased mobility. Creating a more female-friendly labour market will undoubtedly be more difficult in some countries than in others. Without such changes, I see no way in which Western Europe could catch up with the USA in creating a full employment economy.

### Notes

1. In 1997 860 000 male high-school<sup>1</sup> graduates enrolled in college from a population of 1 354 000 for a 63.5 per cent rate compared to 995 000 female high-school graduates from a population of 1 415 000 for a rate of 70.3 per cent. See US Bureau of Labor Statistics (1999), table 1.
2. US Department of Commerce, *US Statistical Abstract 1998*, table 654.
3. Median weekly earnings figures from the CPS show that the female to male earnings ratio rose from 0.62 in 1970 to 0.75 in 1996. See *US Statistical Abstract 1997*, table 671 and *US Statistical Abstract 1981*, table 681. Regression-based models tell a similar story, regardless of how one structures the regression.
4. The detailed files that created the sample from the CPS files are available on request.
5. In the CPS working husbands work about 40 log points more than working wives over the year. The 1997 Changing Workforce survey gives a smaller gap in work time over a week: wives working 7–8 hours less per week or roughly 20 log points less than husbands.
6. The National Center for Education Statistics estimates that in 1996 936 000 black women were enrolled in college compared to 564 000 black men (*US Statistical Abstract 1998*, table 303). The CPS survey shows 1 136 000 black women were enrolled compared to 764 000 black men. I do not know the reasons for the difference (*US Statistical Abstract 1998*, table 305).
7. US Department of Labor (1999).
8. *US Statistical Abstract 1998*, table 61.
9. *US Statistical Abstract 1998*, table 79.
10. Bonczar and Beck (1997).
11. These data are from US Department of Labor (1979), table 26 and (1999), table 16.
12. *US Statistical Abstract 1995*, table 671.
13. There is some limited evidence for such a reallocation in the 1960s and 1970s (Juster and Stafford, 1991).

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