

EMPLOYMENT PATTERNS OF HUSBANDS AND WIVES AND FAMILY INCOME DISTRIBUTION IN ITALY (1977–98)

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The pattern of employment among men and women has changed remarkably over the past decades. The growth in the participation in the labor market of women with high-income husbands has heightened concerns that wives' earnings may increase income inequality among married couples, especially in countries like Italy, the U.K., and the U.S., where more noticeable growth of income inequality during the past decade has accompanied changes in employment levels. In this paper we attempt to measure the impact of the changes of women and men's employment patterns on the distribution of income among Italian households, by considering regional differences, using micro data from the Historical Archive of the Bank of Italy Survey of Household Income and Wealth (SHIW) for the period 1977–98. Our results indicate that total income distribution would have been more unequal without women's labor income.

1. INTRODUCTION

The pattern of employment among men and women has changed remarkably over the past several decades. While the employment rate of men decreased in most advanced countries between 1973 and 1998, the employment rate of women has increased markedly, with most of the change being attributable to changes in the patterns of labor market activity by married women. Figures 1 and 2 show the data for female and male participation rates for some European countries. All these countries show similar patterns.

These changes in labor market participation have brought changes in the contributions of wives and husbands to family income. Questions have arisen about the effect that changes in the employment patterns of wives and husbands have had on family inequality.

Do changes in income inequality matter? There are several reasons why one might care about changes in income distribution. Beside concerns about equity, there are also concerns about efficiency. One is the possible relationship between inequality and macroeconomic growth. Within the framework of endogenous growth theories, a number of authors have provided evidence that an unequal dis-

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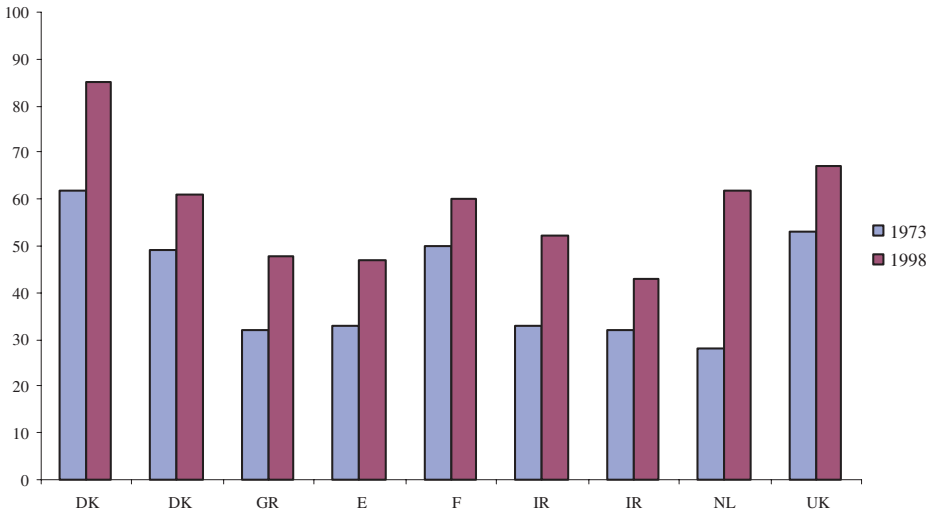


Figure 1. Female Participation Rates in European Countries
 Source: OECD, *Employment Outlook*, 1999.

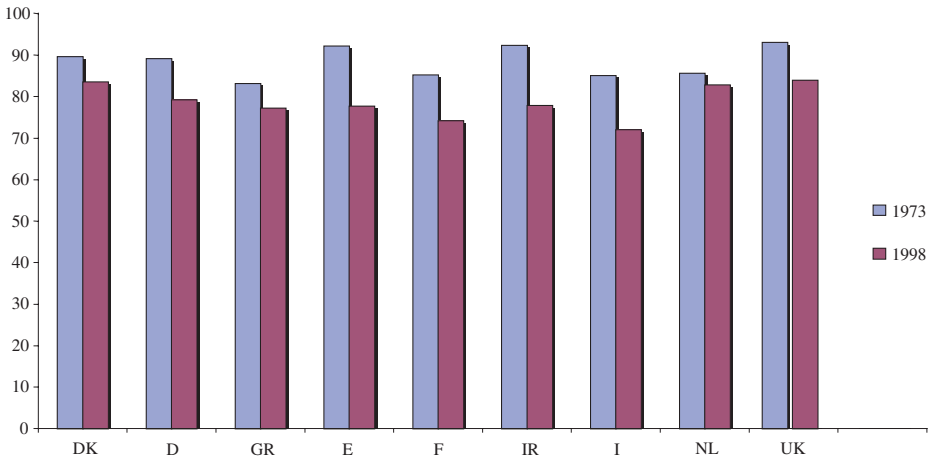


Figure 2. Male Participation Rates in European Countries
 Source: OECD, *Employment Outlook*, 1999.

tribution of income might ultimately affect economic growth, mainly through the channels of education, access to capital markets, and political and economic mechanisms (e.g. Alesina and Rodrik, 1994; Bénabou, 1996). Another important implication related to the growth of income inequality has been the increase in poverty rates (especially of the younger cohorts) and the diffusion of low paid jobs defined according to the OECD (1996, 1997) definition.¹

¹The low paid threshold is defined as the upper limit of the first quintile of the earnings distribution (the 20th percentile).

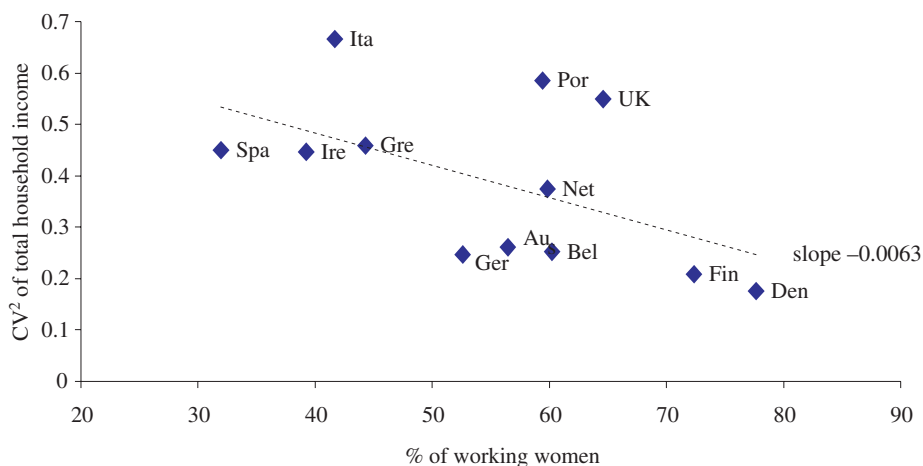


Figure 3. Women's Work and Inequality in Income Distribution in Europe (1995)
 Source: Pasqua (2002) using ECHP dataset.

The link between wives' employment and inequality is documented in Figure 3, where, for different European countries, the percentage of working women and the level of inequality (measured by the squared coefficient of variation, CV^2) are shown in the same diagram. The data show that countries with higher female employment rates are also characterized by more equal household income distributions. Only the UK and Portugal seem to have high percentages of working women and high inequality. Italy, on the contrary, has the highest level of inequality of all countries shown, but a quite low proportion of working women, similar to the other Southern Europe countries.

While during the 1980s Italy was one of the European countries with the most equal income distribution (given the important actions of unions), during the 1990s the situation changed and the income distribution became more and more unequal.

The fast growth of inequality has stimulated strong interest among economists and it became important to investigate whether the changes in the employment rates of men and women can contribute in explaining the increase in inequality of the past decade.

With regard to the European countries, a negative relationship between women's employment and income inequality also emerges in Italian regions. In regions where women work more, inequality is lower. In Figure 4 we show how the relationship changed over time, becoming stronger during the period of consideration (we consider the situation roughly every four to five years).

The interest for regional variation comes from the evidence of the persistence of profound differences between Northern and Southern regions that still characterize Italy: empirical evidence shows that while the Northern regions have been characterized by fast economic growth, decline of unemployment rate and important changes in the social service system as well as in the credit market which make

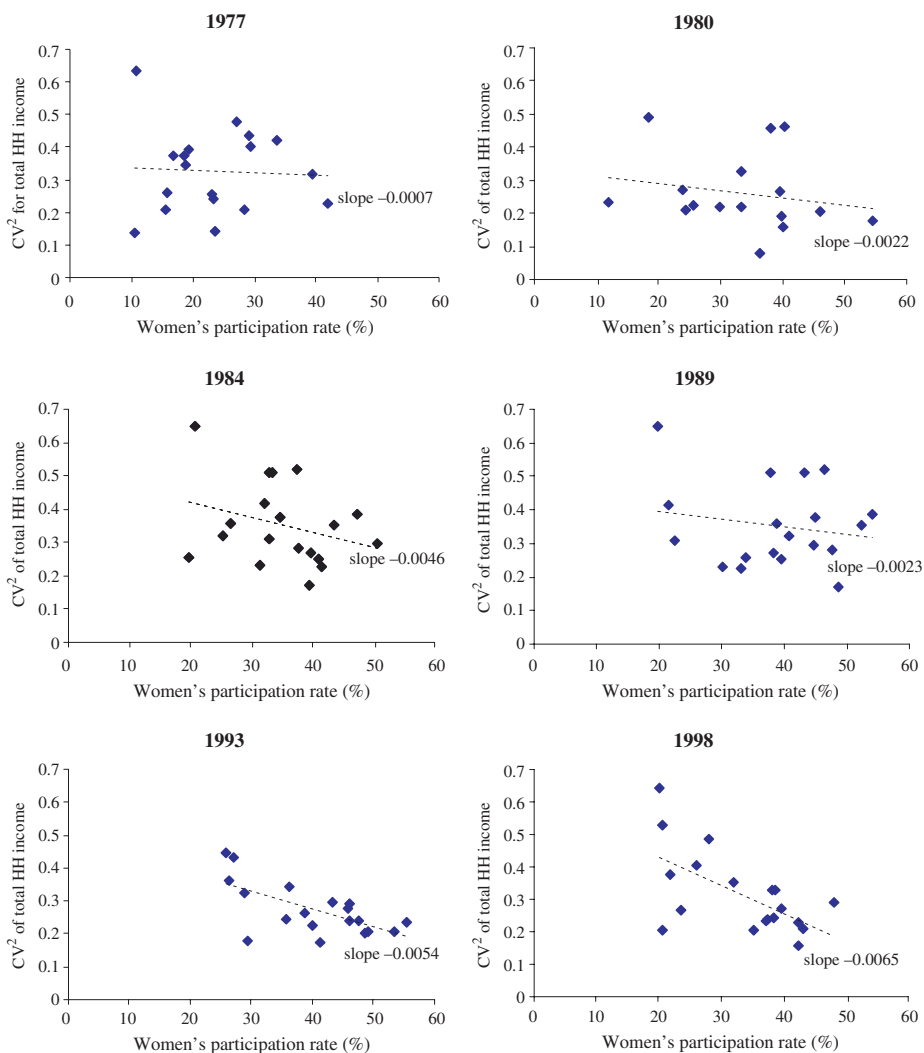


Figure 4. Inequality and Women's Employment Rate in Italian Regions
Source: authors' elaboration using SHIW dataset.

those regions more similar to the rest of Europe, the Southern regions definitely lagged behind.

Table 1 shows that in the South married women work much less than in the North and inequality is higher in all years except for 1980.

The effect of women's work on income inequality depends on the type of women who enter in the labor market. If the employment of women married to husbands with lower earnings increases relatively more, this would contribute to lower income inequality. If instead it is the employment rate of wives whose husbands have high earnings that increases relatively more, this produces an increase

TABLE 1
EMPLOYMENT RATES OF WIVES (%)

	1977	1980	1984	1989	1993	1998
<i>North</i>						
Employment rate of wives	32.2	38.0	38.4	46.1	46.8	54.5
CV^2 of total household income	0.594	0.603	0.570	0.508	0.574	0.568
<i>South</i>						
Employment rate of wives	15.2	22.4	29.7	25.5	30.6	31.6
CV^2 of total household income	0.659	0.524	0.642	0.611	0.677	0.672

in the polarization of household income distribution. In other words the rise of wives' employment would lead to a contemporaneous growth of households where both spouses work and a rise of households where nobody works.

In this paper we intend to measure the impact in the past two decades of the changes in employment patterns of wives and husbands on the distribution of family income among households where both spouses are present and in working age, with a particular focus on the differences between Northern and Southern regions. A remarkable difference between the North and South still exists both in the characteristics of the labor market and in the social service system. While in the North there are greater opportunities for part-time activities (which, especially for women, enable work and family-care activities to be combined), in the Southern regions these opportunities are more limited. Moreover, with regard to the social service system, remarkable differences exist in the availability of childcare for children under the age of three in the Northern and Southern regions. Public childcare facilities provide places for 25–30 percent of the 0–3 years population in most regions of the North, while in the South only 1–2 percent of pre-school children have access to kindergartens. Del Boca and Pasqua (2002) and Del Boca (2002a, 2002b) have recently reviewed the empirical evidence on the effect of childcare on labor supply: the availability of childcare services increases women's participation in the labor market, but childcare costs affect women labor supply only in regions where childcare is not rationed.² In this paper we will take the differences between the North and the South into account while examining changes in the contribution of husbands' and wives' earnings to inequality during the 1977–98 period.

2. THE DATA

In this paper we use microdata from the Historical Archive of the Bank of Italy Survey of Household Income and Wealth (SHIW), a repeated cross-sectional survey that covers the 1977–98 period (for a historical description see Brandolini, 1999).

²See Del Boca (2002a, 2002b) and Chiuri (2000) for an analysis of the impact of child care on women's participation in the labor market.

The archive includes the historical series of relevant variables related to household income and wealth, including income from work (as employees and self-employees), pensions, public transfers, income from real properties and the imputed rental income. It also includes interest on financial assets, net of interest paid on mortgages. Labor income (which is the earnings variable used in this study) is defined net of taxes and social security contributions and inclusive of bonuses and overtime payments.

The use of this data set poses many problems in terms of the structure and quality of the survey (well addressed in Brandolini, Cipollone, and Sestito, 2000; as well as in Brandolini and D'Alessio, 2002). The frequency of the data, initially annual and then biennial as from the late 1980s, makes it difficult to define the link with the business cycle (the GDP shows a steady growth in the 1980s and decreases in the 1990s). The relationship seems however to be positive: the dispersion of incomes appears to increase in periods of economic expansion and decline during recession (Brandolini and D'Alessio, 2002). Brandolini (1999) in particular describes the several issues concerning the assessment of data quality of the survey data, mainly the selection bias generated by differential response rates and under-reporting of certain types of income and compares survey data with information from other sources on the demographic structure and the composition of the labor force. The problem of underreporting is relevant for self-employment which is not the object of our analysis. The discrepancy between National Statistics data (ISTAT) and the Bank of Italy survey diminished as the differences in definitions were corrected. Also the sample design was revised in 1986 and 1989 on the basis of the design of the ISTAT labor survey and the accuracy of estimates for regional samples increased. Despite the several problems related to the survey, the SHIW is the best source of information on individual income data and contains demographic and labor market information on the individuals in the sample which makes it possible to provide consistent measurements of changes in Italian income distribution.

Our sample includes only households in which both spouses are present and the wife is younger than 60. In Table A1 (in the Appendix) we report some descriptive statistics for our sample regarding area of residence, family size, husband's and wife's education, age and employment rates.

The demographic characteristics of the sample changed during the period. The proportion of households living in the North decreased from 50.9 to 40.2 percent, while the percentage of households living in the Center and the South increased (respectively from 19.1 to 21.5 percent and from 30 to 38.3 percent). In fact, the Italian population between 1977 and 1998 increased by 2.5 percent, but the increase was almost entirely concentrated in the South (given the higher fertility rate in this area).

Similarly to the other OECD countries, the data show an increase in the share of highly educated workers: the incidence of employees with high-school qualifications increased from 19 to 45 percent among men, and from 22 to 43 percent among women. The percentage of graduate employees rose from 6 to 9 percent among both men and women.

Important changes concern the structure of the family: fertility rates decreased from 1.8 to 1.2 during the period and the average family size changed

from 3.2 to 2.8 (ISTAT, various years). Other changes have been slower: divorce rates increased from 0.2 to 0.6 percent, and the proportion of households consisting of a single parent with children exhibited a growth from 5 to 7 percent, which shows that the Italian family remains relatively “traditional” in comparison with other advanced countries.

In terms of household labor-market participation, the husbands’ employment rate declined from 83.8 to 77.5 percent, while the percentage of working wives increased from 25.7 to 44.3 percent. At national level, the distribution of employment was sensitive to the state of the business cycle only in the case of men. On the contrary, the proportion of women workers seemed to be more independent of the business cycle, continuing to grow during the two decades considered. However, as we will discuss in the following sections, there are considerable differences in the employment of women in the North and South of the country: while the employment pattern for men does not change much across regions, the employment of women in the South seems to be more responsive to the business cycle than in the North.

3. PREVIOUS RESULTS

The impact of the married wives’ employment on income distribution depends in part on what factors motivate their decision to work. The increased number of opportunities (especially for highly educated women), the availability of jobs and social services that make it possible to reconcile family work with outside activities (services sector), and the need to respond to changes in the family’s labor supply and income (especially for women in the lowest quintile groups of income distribution) seem to be the main factors in explaining the growth of female employment. Over the past 20 years, real wages have declined for less skilled men and the proportion of unemployed men has increased. As a consequence, the increased employment of wives in the labor force in recent years may reflect the need to offset the negative impact of their husbands’ performance in the labor market.

Using U.S. data, Lundberg (1985) found a small added worker effect,³ and Ercolani and Jenkins (1999) and Aaberge *et al.* (2000) reported a similar effect respectively for British and Norwegian couples. In their analysis of Italian data, Del Boca, Locatelli, and Pasqua (2000), on the contrary, report evidence of strong assortative mating: working women are more likely to be married to employed men with a higher level of education and higher incomes.

Del Boca, Locatelli, and Pasqua (2000), in explaining women’s decisions to work, have analyzed the effect of variables describing economic constraints (husbands’ income and employment status), taking into account variables related to family background (such as the working status of mothers) and variables related to environmental opportunities (such as the availability of childcare by region). They found that an important role is played by family background which affects women’s attitudes to work. The response to the event of the husband losing his

³The *added worker effect* is the increase in the wife’s participation in the labor market as a response to her husband’s unemployment and low income.

job is mediated by women's attitudes, which are affected by whether or not other women in the family have worked in the past. An added worker effect is found in households in which the role of women in the labor market has been long accepted and considered more favorably. The result is consistent with previous studies that have explored the nature of the correlation between the participation of married women in paid work and the employment status and income of the husbands, controlling for family background. This analysis is also coherent with models that analyze women's employment decisions in a framework where relative economic status comparisons with other women in the family are important (Neumark and Postlewhite, 1995).

Questions about the implications of women's employment growth for income inequality have been raised mostly in studies where more noticeable growth in income inequality has been recorded, such as the U.S. In his survey, Lam (1997) reviewed several studies from different different periods, cohort and race. Karoly and Burtless (1995) found that women's work has a disqualifying effect, increasing income inequality. Cancian *et al.* (1992) show that married women's work has instead an equalizing impact. In their work it is examined how the increasing labor force participation of wives has affected the level and the distribution of household earnings in the U.S. during the 1970s and the 1980s. Moreover Cancian *et al.* (1992), Danziger (1980) and Leherer and Nerlove (1984) found different results for whites and blacks and different periods of the life cycle.

Analyzing different countries, Gronau (1982) and Blackburn and Bloom (1994) found an equalizing effect of wives' earnings for Israel, U.S. and Canada. Using ECHP (European Community Household Panel) data set, Pasqua (2002) found that wives' contribution to inequality in household income distribution is higher where female employment rate is lower. This means that where only highly educated women work, this has a disqualifying effect on family income distribution. If relatively lower educated women also enter the labor market, their earnings may help to reduce inequality.

Changes in the workforce have been examined from various standpoints. One subject that has attracted attention is the ratio between the growth of employment of married women and the decline in male employment. Considerable attention has been devoted to the phenomenon defined as "the employment battle of the sexes": the decline in male employment seems to be more than offset by the inflow of women in the labor market. It has been remarked that men are mostly employed in manufacturing, the sector hardest hit in recent years due to the restructuring required by technological changes, whereas women are mainly employed in the services sector, which is growing in all countries and which is better sheltered from the stronger international competition (Del Boca, Locatelli, and Pasqua, 2002).

Following this line we have attempted to measure the impact of these important changes in husbands' and wives' employment patterns on income inequality considering temporal variation as well as regional differences.

4. EMPLOYMENT AND EARNINGS OF HUSBANDS AND WIVES

Our analysis focuses on the employment status, earnings and incomes of married couples during the 1977–98 period. As has been shown in several studies,

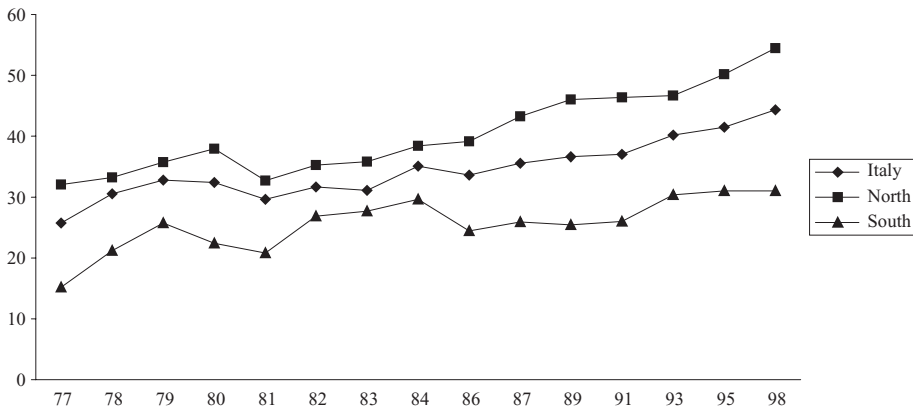


Figure 5. Employed Married Women (Percentage)

the Italian employment rate is among the lowest of all advanced countries both for men and for women. The Italian labor market is characterized by considerable rigidities, mainly related to the high costs of hiring and firing workers. This has a strong impact on employment patterns and indeed, for the period considered (which also includes a year of recession in 1993), we notice less remarkable changes in employment patterns than in other countries.

Our data show that the employment of married women aged less than 60 increased in Italy in the period 1977–98 from 25.7 to 44.3 percent, while in the South the increase was slightly lower: from 15.2 to 31 percent (see Figure 5).

The data on unemployment rates among married women under 60 years of age also show that the unemployment rate has doubled over the past two decades. These figures, jointly with the employment data, indicate an increased propensity of married women to participate in the labor market. During the same period, data on the employment of men indicate a decline from the late 1970s to the mid-1980s and a growth that reaches its peak in 1987, before declining until the end of the 1990s. During the past decade, employment rates of men decreased constantly in all regions until 1995. After the process continued in the Southern regions while men's employment rates remained stable in the North (see Figure 6). As we have mentioned above the reasons for this important process are related to the slow down in manufacturing as well as the pattern of early retirement.

If the pattern of employment of men does not change much from one region to another, the employment of women seems to be more responsive to the business cycle in the South than in the North.

In order to analyze the relationship between husbands' and wives' employment and earnings, we first present some descriptive statistics regarding the relationship between the occupational status of husbands and wives. Table 2 shows the employment rates of women married to working and non-working men. The data indicate that the proportion of working women married to employed men increased from 28.7 percent in 1977 to 49.9 percent in 1998, while the percentage of working women with an unemployed husband rose from 10.4 to 25.5 percent over the same period.

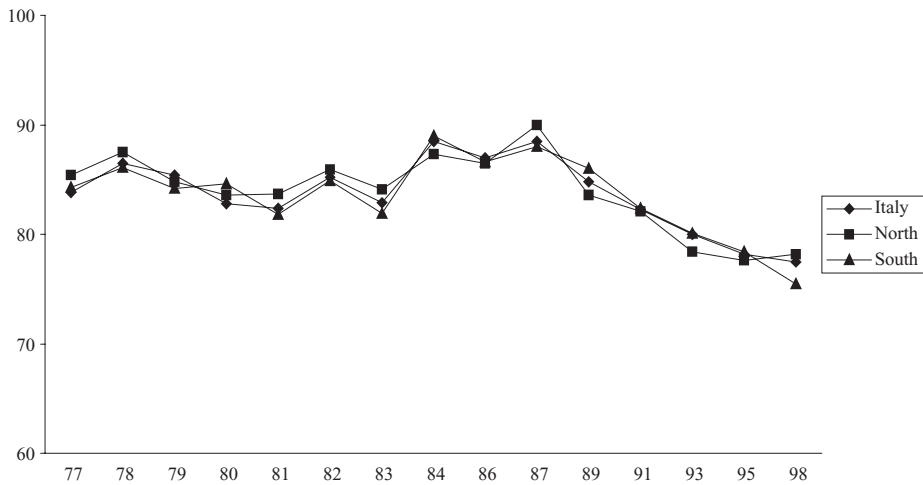


Figure 6. Employed Married Men (Percentage)

TABLE 2
EMPLOYMENT RATES OF WIVES (%)

	1977	1980	1984	1989	1993	1998
<i>Italy</i>						
All	25.7	32.4	35.0	36.6	40.4	44.6
Married to working men	28.7	35.6	36.9	39.5	44.2	49.9
Married to non-working men	10.4	16.8	20.6	20.2	23.5	25.5
<i>North</i>						
All	32.2	38.0	38.4	46.1	46.8	54.5
Married to working men	36.4	42.5	41.6	50.4	54.6	62.7
Married to non-working men	7.5	15.3	16.7	23.9	18.2	24.7
<i>South</i>						
All	15.2	22.4	29.7	25.5	30.6	31.6
Married to working men	16.0	22.9	30.0	26.7	31.5	34.1
Married to non-working men	10.9	19.3	27.0	17.7	26.5	23.1

Table 2 also shows the same data for the Northern and Southern regions. The pattern is not different but, whereas in the North the number of women married to employed men increased from 36.4 to 62.7 percent, in the Southern regions it rose only from 16 to 34.1 percent. A much smaller difference appears between the proportion of women married to non-employed men in the North and in the South in all the years considered.

Table 3 shows that the percentage of working wives is relatively high in middle income brackets (except in 1993 and 1998). However, the data disaggregated by North and South show relevant regional differences in the employment rates of women in the different quintile groups of husbands' income distribution.⁴ In the

⁴For North and South, quintiles are defined by region.

TABLE 3
 PERCENTAGE OF WORKING WIVES BY QUINTILE OF HUSBAND INCOME DISTRIBUTION (CHANGE WITH RESPECT TO THE PREVIOUS YEAR CONSIDERED)

	1st	2nd	3rd	4th	5th
<i>Italy</i>					
1977	10.9	23.2	35.4	31.2	26.7
1980	18.2 (+7.3)	30.0 (+6.8)	41.2 (+5.8)	38.0 (+6.8)	35.5 (+8.8)
1984	27.6 (+9.4)	35.3 (+5.3)	41.0 (-0.2)	39.7 (+1.7)	32.4 (-3.1)
1989	23.9 (-3.7)	39.5 (+4.2)	40.3 (-0.7)	40.8 (+1.1)	38.6 (+6.2)
1993	24.7 (+0.8)	40.1 (+0.6)	41.5 (+1.2)	46.0 (+5.2)	50.8 (+12.2)
1998	25.5 (+0.8)	45.0 (+4.9)	50.3 (+8.8)	50.8 (+4.8)	53.1 (+2.3)
<i>North</i>					
1977	13.4	41.2	42.2	37.2	28.9
1980	17.7 (+4.3)	43.9 (+2.7)	49.7 (+7.5)	44.7 (+7.5)	34.4 (+5.5)
1984	31.2 (+13.5)	40.9 (-3.0)	46.9 (-2.8)	39.0 (-5.7)	31.8 (-2.6)
1989	27.9 (-3.3)	56.7 (+15.8)	55.5 (+8.6)	48.6 (+9.6)	41.6 (+9.8)
1993	18.2 (+9.7)	54.9 (-1.8)	53.0 (-2.5)	58.0 (+9.4)	52.7 (+11.1)
1998	24.7 (+6.5)	60.8 (+5.9)	65.5 (+12.5)	63.2 (+5.2)	60.4 (+7.7)
<i>South</i>					
1977	10.8	11.5	12.6	23.3	18.0
1980	21.3 (+10.5)	26.8 (+15.3)	22.1 (+9.5)	20.1 (-3.2)	21.0 (+3.0)
1984	26.4 (+5.1)	26.8 (-)	27.6 (+5.5)	37.3 (+17.2)	32.2 (+11.2)
1989	21.1 (-5.3)	23.1 (-3.7)	25.3 (-2.3)	28.1 (-9.2)	30.1 (-2.1)
1993	27.2 (+6.1)	27.9 (+4.8)	23.7 (-1.6)	35.4 (+7.3)	40.4 (+10.3)
1998	23.1 (-4.1)	32.3 (+4.4)	32.7 (+9.0)	31.8 (-3.6)	39.4 (-1.0)

North, in fact, in all years considered women who work more are those belonging to the second and third quintile groups of husbands' income distribution, while in the South the largest percentage of working women are in the highest quintile groups. During the period of observation, the employment of women in the North was higher in households where husbands' earnings were lower and this may have the effect of reducing inequality, while in the South the employment rates of women higher in the highest quintile groups may have contributed to increased inequality.

Table 4 reports mean earnings of working wives classified by husbands' earnings quintile for Italy and disaggregated by North and South. Wives' earnings in real terms increased more in the lowest two and in the top quintile groups of husbands' income distribution. In the South the increase was greater in the lower quintile groups than in the higher ones. The greater increase in women's labor income in the lower quintile groups may have had an equalizing impact on household income distribution that could have compensated for the potential impact of assortative mating.

Wives' employment and earnings have become an increasingly important source of family income (see also Table A2 in the Appendix) and changes in wives' employment and earnings have varied substantially according to area of residence and husbands' earnings.

Our focus is mainly on women's employment patterns given that the variability of the hours and weeks of work is very small. An important aspect of the rigidity of the labor market is in fact the limited menu of available employment

TABLE 4
AVERAGE EARNINGS OF WORKING WIVES BY QUINTILE OF HUSBAND INCOME DISTRIBUTION
(CONSTANT 1998 LIRE, THOUSANDS)

	1st	2nd	3rd	4th	5th
<i>Italy</i>					
1977	13,105	11,970	16,379	19,031	21,142
1980	14,946	13,011	18,251	19,746	23,244
1984	14,875	15,866	19,908	20,334	26,005
1989	22,038	19,948	23,730	25,414	28,535
1993	18,664	15,007	21,096	22,686	28,347
1998	21,280	17,327	19,970	22,105	26,597
<i>North</i>					
1977	14,562	15,217	18,496	20,067	21,786
1980	18,939	16,503	19,991	21,119	21,642
1984	15,606	16,903	20,751	20,336	24,382
1989	22,209	20,603	24,557	26,306	29,635
1993	19,466	17,897	21,916	22,726	29,471
1998	22,244	19,421	20,928	24,252	28,240
<i>South</i>					
1977	11,796	6,815	10,083	17,225	20,089
1980	11,970	8,859	14,160	18,680	20,690
1984	14,286	13,805	17,468	19,843	21,506
1989	20,622	19,932	25,046	25,781	27,875
1993	18,896	11,802	19,729	23,092	28,618
1998	22,947	15,187	19,482	20,834	24,045

arrangements. The proportion of part-time work is still less than 10 percent. Progression towards a more flexible working hours system started later in Italy than in other countries and has been much slower. On the one hand, unions have traditionally opposed part-time employment fearing that potential divisions of the work force (in terms of working arrangements, demographic characteristics, etc.) could reduce workers' cohesion. On the other hand, under current regulations social contributions paid by employers are strictly proportional to the number of employees, not their hours worked, which makes the employment of two part-time workers more costly than one full-time employee. Moreover the service sector, where part-time work is traditionally more widespread, has not developed as quickly in Italy as in other countries.

5. THE PATTERN OF INCOME INEQUALITY IN ITALY

As was noted in other studies (Brandolini, 1999; Brandolini and D'Alessio, 2002), the pattern of inequality in the distribution of income shows considerable fluctuations in the two decades considered here, although there is no particular trend. In a comparative context, while the level of income inequality in Italy in the 1980s was lower than in most other European countries, inequality rose in the 1990s more than in most countries.

According to a recent OECD report (2000), among the working-age population, income inequality increased during the past decade, while among the retirement-age population inequality decreased. The relative position of younger

cohorts worsened relatively to older cohorts: children and young adults lost ground while all age groups over 40 improved their position.⁵ Related to increases in income inequality, relative poverty also rose significantly.

The data (Figure 7) show that income dispersion measured by the squared coefficient of variation (CV^2) increased between 1977 and 1979, which marked the end of the fall that had characterized the 1970s after the regulations implemented in the labor market, and the introduction of wage parity laws and wage indexation. After considerable growth in 1978–79, income dispersion declined for most of the 1980s and remained quite stable during the latter part of the 1980s.⁶ Then inequality increased again in the 1990s. As mentioned above, because of changes in the frequency of the data (initially annual and then biennial), it is complicated to analyze the relationship between inequality of income and the short-term business cycle. However, at least until the early 1990s, it emerges that the dispersion of total incomes would tend to increase in periods of economic growth and decrease in periods of recession.

After the early 1990s, inequality started to rise and became one of the highest in Europe. The link with the business cycle becomes less clear and seems to be countercyclical.⁷ The rise of income inequality in the 1990s is in fact contemporaneous with the recession of the early 1990s.

These phases are confirmed and discussed in studies which have attributed the declining inequality to the compression of the wage structure in the 1980s imposed by the egalitarian regulations obtained by the unions (Manacorda, 2000).

The increase in inequality in the 1990s was partly due to the institutional changes that characterized the labor market after the weakening of the unions. Performance-related premiums and bonuses were increasingly adopted in negotiations at the company level and weakened the egalitarian structure of earnings.

Recently there has been increasing attention to the patterns of European income and earnings inequality in this period, especially in comparison with the U.K. and U.S. Most analyses focusing on the pattern of income distribution in a comparative perspective argue that “institutions matter.” Focusing on the distribution of earnings in Italy and the U.S., Manacorda (2000) analyzes the effect of wage indexation on inequality in Italy during the period 1977–93. His analysis suggests that inequality would have increased throughout the 1980s and the 1990s at a rate similar to the one observed in the U.S., had the wage indexation system

⁵A decomposition analysis of overall inequality suggests that the contribution of self-employment and capital income to inequality among the working-aged was more important than the contribution of gross earnings; furthermore, this contribution increased during the past ten years (Italy is the only country in which this feature has been found). This effect was entirely due to increased dispersion of self-employment and capital incomes while the changing share did not contribute to the increase in inequality. Public transfers were redistributed from children and older adults (those aged 51 to 65) to elderly age groups, particularly older senior citizens (OECD, 2000).

⁶The peak in 1987 seems to be due more to dataset problems than to a real increase in income inequality.

⁷During recessions employers retain the most experienced workers as demand declines. The least skilled are laid off and experience income losses. Recoveries are accompanied by increased employment of the least experienced workers (Blank and Blinder, 1986). Differently from inequality in total income distribution, inequality in wages distribution seems therefore to decrease during recessions.

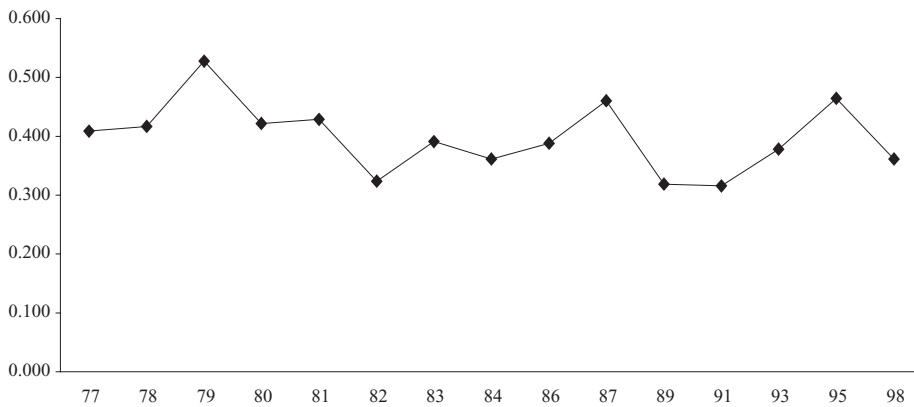


Figure 7. Inequality in Total Household Income Distribution in Italy 1977–98 (CV²)

been inoperative.⁸ He found, in particular, that the effects of wage indexation had been greater for female workers since their wages are, on average, lower than those of men and far more dispersed. Over time, the effect of wage indexation decreased for both men and women. This helps explain the increase in inequality in the 1990s.

Other researches examining Italy in comparison with other countries of the European Union, have analyzed the effects of demographic structure on the evolution of inequality in Italy during the period 1977–98. D’Alessio and Signorini (2000) have compared income inequality of households and individuals, showing how income inequality at individual level is greater than at household level and how the family redistributes resources between earners and non-earners and between earners of different income levels. The redistribution of income within the household compensates a high proportion of income inequality among individuals, but it declined during the past decade. Brandolini and D’Alessio (2002), examining the same period, analyzed the important demographic phenomena which characterized the Italian population in comparison with the rest of Europe (the size of the family declined, the number of young household heads decreased, while the number of single and lone parents increased). In spite of the relevance of these transformations, demographic variables did not seem to have a significant impact on the patterns of income inequality which seem to be explained mainly by significant regional differences.

In the next sections we will explore the relationship between the work of wives and husbands and income distribution across regions and over time.

⁸Over the period of time considered, the equalizing effect of the indexation declines and disappears. In 1983, the government reduced the value of wage indexation by approximately 15 percent to its 1977 level. And in 1986 the system was made semi-proportional by granting 100 percent coverage of a set minimum wage plus 25 percent coverage of the difference between the actual wage and the minimum wage.

6. HOW WIVES' AND HUSBANDS' WORK CONTRIBUTE TO HOUSEHOLD INCOME INEQUALITY

To analyze the impact of the employment patterns of husbands and wives on family income distribution, we first consider the contribution of the spouses to household income and then to its dispersion. In order to eliminate short-term fluctuations, the following analysis is done only for three years (one for each decade considered): 1977, 1989 and 1998. Wives contribute less than husbands to household income (see Table 4, variables S_w and S_h) in all the years, even if their contribution augments between 1977 and 1998. The growth of wives' contribution to household income is mainly concentrated in the first decade of the period (both in the North and in the South), while in the second decade the contribution increased by only 1–2 percentage points.

This pattern is the result of the effect of two different phenomena. On one hand, as we have discussed earlier, wife's employment has continued to rise in the two decades considered (see Figure 5). On the other hand, while during the first decade (1977–89) the difference between male and female earnings narrows, during the second decade (1989–98) it widens significantly (Manacorda, 2000). A similar pattern is observed analyzing wage differentials between husbands and wives. The family wage gap increased from the end of the 1980s to the 1990s (Table A3).⁹

The proportion of low paid workers among husbands declined until 1989 (from 5.4 to 2.7 percent) and increased thereafter (from 2.7 to 8.9 percent), while the proportion of low wages among wives was much higher and then continued to decline (Brandolini, Cipollone, and Sestito, 2000).

While wives' contribution to household income increased, the contribution of men declined in all regions and particularly in the North. This is mainly attributed to the decline of husbands' employment during the 1980s and 1990s (see Figure 6). The growth of household income is therefore due to the increase in wives' contribution and the contribution of other sources of income. In fact, household income from other sources increased remarkably in the two decades (this is again more evident in the North). The increasing importance of "other sources of income" for households' income can be partly explained by the increasing proportion of adult children living with their parents. Recent Eurostat data show that differently from most European countries, the number of Italian adult children living with their families increased significantly and a large proportion of them are employed. Other incomes include public transfers which, during the past decades, were directed mostly to the elderly at the expense of children and the population of working age.

If the increased employment and earnings of wives have raised the average income of married couples, what have the effects been on income distribution?

In order to consider how men's and women's work affects income distribution, we first decompose CV^2 by factors in order to analyze how wives' earnings, husbands' earnings and other sources of income contribute to total inequality and

⁹Part-time employment is very limited in the Italian labor market (less than 10 percent) and therefore the difference in the spouses' contribution to total household income cannot be explained by a difference in the hours worked by men and women.

then we attempt to measure the impact of women's and men's work on income inequality, comparing inequality measures of the distribution of actual income with inequality measures calculated on the distribution of total income less women's earnings. This is done in order to calculate the inequality that would occur if wives had no earnings.

Following the methodology for inequality decomposition by sources of income used in other studies (Shorrocks, 1982; Cancian *et al.*, 1992; Jenkins, 1995; Cancian and Reed, 1998; Aaberge *et al.*, 2000), we consider three sources of income only: husband's earnings, wife's earnings and other sources of income (both from other components and non-labor income). The decomposition of the squared coefficient of variation of total household income (CV^2_{HH}) is achieved using the following formula:

$$CV^2_{HH} = S^2_h CV^2_h + S^2_w CV^2_w + S^2_o CV^2_o + 2\rho_{hw} S_h S_w CV_h CV_w + 2\rho_{ho} S_h S_o CV_h CV_o + 2\rho_{wo} S_w S_o CV_w CV_o$$

where CV_i is the coefficient of variation of the i -th source of income, ρ_{ij} is the coefficient of correlation between the i -th and the j -th sources of income and S_i is the income share of the i -th source of income (computed as the ratio between the mean value of the source and the mean value of household income). HH refers to the households, h to the husbands, w to the wives and o to other sources of income (calculated as the difference between total family income and spouses' earnings).

Inequality in the distribution of household income is therefore obtained as a weighted average of the inequality of each component's income (where the weights are the shares of total household income corresponding to each component) and the correlation among the different sources.

Table 5 shows the squared coefficient of variation of total household income. For all married couples inequality first declined and then increased again after 1989. The CV^2 of wives earnings is much higher than the CV^2 of all other sources of income (husbands' and "other"), but it declined during the entire period while the coefficient of variation of husbands' earnings increased considerably between 1989 and 1998.

The decline in inequality of wives' earnings is mainly attributable to the increased employment (far fewer wives had zero earnings in 1998 than in 1977). In fact the coefficient of variation of the earnings computed only for working wives (which excludes the zero earners) increased over the period from 0.250 to 0.386. This means that the decline in CV^2_w is due to the "employment" effect, rather than to a decline in the inequality in actual female labor income distribution. The distribution of "other incomes" became more equal during the past two decades.

When we consider separately the North and the South, we find that among Northern households inequality is lower than among Southern households. Moreover, while dispersion in Northern households income shows a stronger downward trend in the 1980s, family income inequality in the South increased, especially during the 1990s.

In the North, the effect of employment of husbands and wives is fairly similar to the one described for the whole country. On the contrary, in the South

TABLE 5
 MAIN FACTORS IN CV^2_{HH} DECOMPOSITION (STANDARD ERRORS IN BRACKETS)*

	1977	1989	1998
<i>Italy</i>			
CV^2_{HH}	0.409 (0.02382)	0.319 (0.01235)	0.361 (0.01630)
$CV^2_{h\ all}$	0.641 (0.04320)	0.533 (0.02614)	0.759 (0.03992)
$CV^2_{h\ working}$	0.376 (0.03265)	0.302 (0.02160)	0.376 (0.02947)
$CV^2_{w\ all}$	3.855 (0.19767)	2.180 (0.06376)	2.108 (0.18738)
$CV^2_{h\ working}$	0.250 (0.01863)	0.165 (0.01077)	0.386 (0.07504)
CV^2_o	1.761 (0.10331)	1.486 (0.06158)	1.268 (0.05751)
S_h	56.2 (0.71639)	51.6 (0.41954)	43.8 (0.49429)
S_w	10.8 (0.40763)	16.4 (0.29947)	17.5 (0.34735)
ρ_{hw}	0.155 (0.02523)	0.135 (0.01529)	0.214 (0.02564)
<i>North</i>			
CV^2_{HH}	0.353 (0.02755)	0.258 (0.01553)	0.278 (0.01918)
$CV^2_{h\ all}$	0.544 (0.04547)	0.551 (0.03842)	0.702 (0.03603)
$CV^2_{h\ working}$	0.318 (0.03621)	0.297 (0.02880)	0.334 (0.02364)
$CV^2_{w\ all}$	2.697 (0.17197)	1.518 (0.06434)	1.388 (0.11916)
$CV^2_{h\ working}$	0.189 (0.01937)	0.159 (0.01161)	0.301 (0.05767)
CV^2_o	2.015 (0.17518)	1.296 (0.06442)	1.114 (0.07711)
S_h	57.4 (0.98241)	48.6 (0.63671)	41.1 (0.69961)
S_w	13.0 (0.61577)	18.2 (0.45748)	19.1 (0.49020)
ρ_{hw}	0.131 (0.03461)	0.115 (0.02448)	0.259 (0.03361)
<i>South</i>			
CV^2_{HH}	0.434 (0.04482)	0.373 (0.02984)	0.452 (0.03944)
$CV^2_{h\ all}$	0.732 (0.12777)	0.487 (0.04773)	0.867 (0.11538)
$CV^2_{h\ working}$	0.460 (0.10416)	0.282 (0.04048)	0.439 (0.08638)
$CV^2_{w\ all}$	8.336 (1.01649)	3.620 (0.20580)	4.033 (0.89329)
$CV^2_{w\ working}$	0.423 (0.06486)	0.176 (0.02830)	0.589 (0.27534)
CV^2_o	1.568 (0.12207)	1.818 (0.22403)	1.594 (0.10339)
S_h	57.9 (1.3475)	57.5 (0.70494)	49.3 (0.94017)
S_w	7.0 (0.72528)	13.6 (0.48630)	15.1 (0.68509)
ρ_{hw}	0.132 (0.04672)	0.138 (0.02443)	0.100 (0.03596)

Note: *Standard errors have been computed using bootstrap technique (with 1000 replications).

inequality in (all) wives' earnings is quite remarkable (almost three times the dispersion among Northern wives). The large decline in the inequality of wives' earnings among all women in the period 1977–89 reflects both an increased percentage of women working and a more equal distribution among working wives. In fact, CV^2_w of working wives' earnings declined from 0.423 to 0.176 during the 1980s. On the contrary, the increase in $CV^2_{w\ all}$ between 1989 and 1998 is the result of an increased dispersion in working women's earnings.

At the same time, in the Southern regions CV^2 of husbands' earnings dispersion declined from 0.732 to 0.489 during the 1980s and increased to 0.867 during the 1990s. This is due both to the increase in inequality in the distribution of earnings among working husbands, and to the decline in the number of working husbands (that produced an increase in the zeros in the distribution).

Finally while "other incomes" inequality continued to decline remarkably in the North, in the South it increased in the 1980s but declined again in the 1990s, returning to the previous value.

7. SIMULATIONS

Now we attempt to measure the impact of women's work on income inequality, comparing inequality measurements of actual income distribution with inequality calculated on income distribution less wives earnings (Table 6, Counterfactual 1). This implies calculation of the inequality in household income distribution that would occur if wives had no earnings. This is obviously a considerable approximation of the impact of women's work on income distribution because it does not take into account the fact that without their wives' earnings, husbands' labor supply would possibly have been greater and household savings lower, and therefore the households' capital income would have been lower too. However, most analyses of the labor supply of husbands and wives in Italy have shown that while the elasticity of the labor supply of wives is quite high, the labor supply of husbands is unresponsive to income and wage changes (Colombino and Del Boca, 1990).

These measurements, compared with the measurements observed, can give a picture of how women's earnings affect income distribution. Measures of inequality of total income are higher than measures of inequality calculated using total income less women's earnings in all years considered.

These measures indicate that total income distribution without women's labor income would have been more unequal, and therefore that wives' work did not have a disequalizing impact on income distribution. This effect is much stronger in the Northern regions, where female employment is in fact higher, especially in the low-middle quintile groups, and during the 1990s.

Another important source of income is represented by "other incomes," partly due to the adult children's work and to public transfers. We calculate inequality in household income distribution that would occur if households had no income from other sources besides husbands and wives earnings. In the second column of Table 6 we report the results of this simulation. As we can see, income distribution without other incomes would have been about the same when considering Italy, in the past two decades, but would have been different when considering the

TABLE 6
INEQUALITY IN COUNTERFACTUAL DISTRIBUTIONS (CV^2 OF TOTAL HOUSEHOLD NET INCOME)

	True	Counterfactual 1	Counterfactual 2
		If No Women Work	If No Other Incomes
<i>Italy</i>			
1977	0.409	0.439	0.393
1989	0.319	0.356	0.319
1998	0.361	0.399	0.363
<i>North</i>			
1977	0.353	0.405	0.441
1989	0.258	0.328	0.239
1998	0.278	0.344	0.250
<i>South</i>			
1977	0.434	0.436	0.445
1989	0.373	0.367	0.399
1998	0.452	0.462	0.476

two different regional areas. Without other incomes, distribution would have been more equal in the North (except in 1977), and more unequal in the South. This indicates the potential different nature of the “other incomes” in the two areas: in the North adult children’s income seems to be more relevant, while in the South public transfers appear to be more important.

As we mentioned above other simulations involving changes in hours and weeks are difficult given the extremely low variability in hours and weeks in women’s and men’s employment in Italy (see Colombino and Del Boca (1990) and Del Boca, Locatelli, and Pasqua (2000) for a description of the Italian labor market and several motivations for analyzing participation at the extensive margin instead of the intensive one).

Another relevant question concerns the regional differences: wives and husbands work less in Southern households than in Northern households. How would family income be distributed in the South if Southern wives’ and husbands’ earnings were distributed in the same way as Northern wives’ and husbands’ earnings? Using a different simulation methodology, we find that income inequality would decrease even if it remained much higher than in the North (see Table 7).¹⁰

8. CONCLUSIONS

The analysis of the relationship between employment patterns and income inequality is important for determining the consequences of changes in the composition of the labor force and in transfer policies. In Italy income inequality declined in the 1980s and increased in the 1990s. There has been growing concern that recent changes in the pattern of employment and wages of married women would cause wives’ earnings to be less equalizing, or even that they might increase inequality.

¹⁰In these simulations we attribute the value of CV^2 of Northern wives’ earnings (Counterfactual 3) and of Northern husbands’ earnings (Counterfactual 4) respectively to Southern wives’ earnings and to Southern husbands’ earnings, leaving the values of the related correlation unchanged.

TABLE 7
INEQUALITY IN COUNTERFACTUAL DISTRIBUTIONS (CV^2 OF TOTAL HOUSEHOLD NET INCOME)

	True	Counterfactual 3 CV^2 of Wives in the South as the North	Counterfactual 4 CV^2 of Husbands in the South as in the North
<i>South</i>			
1977	0.434	0.413	0.403
1989	0.373	0.344	0.383
1998	0.452	0.408	0.433

In this paper we use micro data of the Historical Archive of the Bank of Italy Survey of Household's Income and Wealth (SHIW), a repeated cross-sectional survey that covers the period 1977–98. Our results show that in the regions where women's employment is higher, household income is more equally distributed. This relationship becomes stronger over time. Important differences are noticeable across regions. Among Northern households, inequality of household income showed a downward trend, while in the South family income inequality rose, especially during the 1990s. In the North, inequality is less pronounced than in the South and declined until 1998.

Decomposition results show that the increase in the employment of women during the period of observation had different effects in the two areas and across time. Our results can be interpreted in the light of our previous analysis (Del Boca, Locatelli, and Pasqua, 2000) in which an added worker effect is found in households in which the role of women in the labor market has been long accepted and consolidated and in areas where more opportunities are available in terms of working hours as well as childcare facilities. Since these factors are more widespread in the Northern areas of Italy, we would expect a stronger equalizing effect there (since the employment of wives in lower income families reduces inequality). Consistent with these results, the reduction in the dispersion of wives' earnings determined by the increased employment seems to have contributed to offset, especially in the Northern areas, the increases in the dispersion of husbands' earnings and the increased correlation in the earnings of the spouses between 1989 and 1998.

These results indicate that policies oriented to encourage labor supply by increasing the number of jobs available (such as fixed term contracts or training programs) have more impact on married women's employment in the North where women's labor supply is more responsive to changes in the labor market than in the South where women seem to be more constrained by the lack of social services.

The inequality decompositions performed in this paper are suggestive of the changes in some of the sources of household income distribution that have been observed in Italy recently, but of course do not offer an explanation for these changes. One possible explanation for the increase in the employment rate of wives and the decrease in the employment rate of husbands is the pattern of male/female wage differentials. In order to determine whether this explanation is plausible, a behavioral model of household decision-making should be constructed and

estimated. With parameter estimates from such a model, and with unbiased estimates of male and female wage offer distributions, implied distributions of earnings and household income can be constructed and compared with those observed over time. This will allow us to determine the proportion of household income inequality that can be explained by changes in gender-specific wage offer distributions. By focusing on intra-household behavior, we will also be able to explore the consequences of these changes for inequality in intra-household utility levels.

APPENDIX

TABLE A1
DESCRIPTIVE STATISTICS

	1977	1978	1979	1980	1981	1982	1983	1984	1986	1987	1989	1991	1993	1995	1998
Area (%)															
North	50.9	49.6	48.7	46.6	41.8	41.1	39.9	39.1	41.0	43.5	37.9	39.6	40.9	42.3	40.2
Center	19.1	20.9	19.4	19.8	22.1	23.8	24.9	24.3	23.0	19.3	21.9	19.3	21.6	21.0	21.5
South	30.0	29.5	31.9	33.6	36.1	35.1	35.2	36.6	36.0	37.2	40.2	41.1	37.5	36.7	38.3
Husband's education (%)															
< secondary	81.1	76.5	76.7	73.9	74.5	71.8	72.0	68.2	68.4	61.3	63.3	65.5	65.7	61.4	55.0
secondary	13.1	16.6	14.6	17.9	19.3	20.3	20.0	22.6	24.2	25.9	27.6	25.9	26.2	30.0	35.7
> secondary	5.8	6.9	8.7	8.2	6.2	7.9	8.0	9.2	7.4	12.8	9.1	8.6	8.1	8.6	9.3
Wife's education (%)															
< secondary	77.8	71.1	69.6	64.9	68.3	65.5	63.8	56.8	58.8	50.7	67.3	68.3	68.5	64.0	56.8
secondary	16.1	20.7	23.1	27.6	24.1	26.3	26.2	30.4	31.4	34.5	26.0	25.4	24.5	28.5	33.9
> secondary	6.1	8.3	7.3	7.5	7.6	8.2	10.0	12.8	9.8	15.2	6.7	6.3	7.0	7.5	9.3
Husband's age	48.3	48.2	47.9	48.3	47.5	48.1	48.4	46.0	45.8	45.7	45.6	46.5	46.8	47.0	47.5
Wife's age	44.1	43.9	43.7	44.2	43.3	43.9	44.2	41.9	41.8	41.7	41.8	42.7	42.9	43.2	43.7
Husband working	83.8	86.5	85.4	82.8	82.4	85.2	82.9	88.5	87.0	88.5	84.8	82.3	80.0	78.2	77.5
Wife working	25.7	30.5	32.8	32.4	29.6	31.7	31.1	35.1	35.6	35.6	36.6	37.0	40.2	41.5	44.3
No. observations	2184	2341	2131	2219	3067	3038	3079	2774	5282	5296	5193	4987	4602	4603	4146

TABLE A2
MEAN OF HOUSEHOLD INCOME SOURCES (THOUSANDS, IN CONSTANT 1998 LIRA)

	1977	1980	1984	1989	1993	1998
<i>Italy</i>						
Total household income	40,145	45,246	46,826	53,609	53,290	55,192
Husband's earnings	22,564	23,796	26,704	27,677	24,651	24,201
Wife's earnings	4,321	5,921	6,727	8,787	8,704	9,663
Other sources	13,278	15,528	13,395	17,144	19,936	21,328
<i>North</i>						
Total household income	45,010	47,193	50,294	61,742	60,750	65,364
Husband's earnings	25,826	25,764	28,131	30,029	26,377	26,866
Wife's earnings	5,851	7,366	7,547	11,250	10,498	12,472
Other sources	13,333	14,062	14,615	20,462	23,875	26,025
<i>South</i>						
Total household income	31,307	33,451	40,649	44,976	42,323	43,035
Husband's earnings	18,137	19,152	23,641	25,865	21,537	21,223
Wife's earnings	2,185	3,201	5,221	6,127	6,445	6,513
Other sources	10,984	11,097	11,787	12,984	14,340	15,299

TABLE A3
GENDER LABOR INCOME GAP (AVERAGE WORKING WIVES EARNINGS AS A PERCENTAGE OF
AVERAGE WORKING HUSBANDS EARNINGS)

Year	Italy	North	South
1977	62.4	60.1	66.7
1978	64.1	61.1	69.9
1979	61.1	61.3	62.4
1980	63.6	62.8	63.2
1981	65.4	61.7	71.1
1982	63.9	63.5	61.9
1983	64.0	60.2	67.0
1984	63.6	60.9	66.2
1986	65.1	61.2	67.6
1987	61.3	56.3	67.7
1989	73.6	68.0	80.2
1991	72.9	69.6	78.7
1993	70.6	66.9	79.4
1995	68.6	64.3	76.0
1998	70.1	66.8	74.9

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