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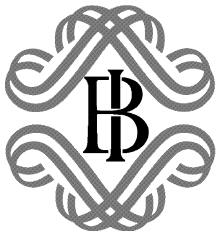

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*The views expressed in the articles are those of the authors and do not involve the responsibility of the Bank.*

# EARNINGS DISPERSION, LOW PAY AND HOUSEHOLD POVERTY IN ITALY, 1977-1998

by Andrea Brandolini*, Piero Cipollone* and Paolo Sestito**

## Abstract

The paper presents estimates on the dispersion of earnings and the proportion of low-paid employees in Italy in the period 1977-1998, and it measures the differential impact of low pay and employment status on households' poverty. The estimates are computed from the micro-data of the Historical Archive of the Bank of Italy's Survey of Household Income and Wealth. The distribution of net earnings narrowed from the late 1970s until the end of the 1980s, abruptly widened in the early 1990s and experienced little modification in the rest of the decade. The trend in the share of low-paid workers evolved in parallel with that of earnings inequality. Finally, the probability of being in poverty is more closely correlated with the number of household members employed, particularly other than the head, than with low pay.

JEL classification: J3, I3.

Keywords: earnings dispersion, low-paid workers.

## Contents



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## 1. Introduction[1]

Last decade was a period of considerable transformation for the Italian labour market. Employment fell sharply in the early 1990s, in the course of the deepest recession of the post-war period, and returned to growth only after 1995. This recovery coincided with a profound modification in the composition of the work force by sex, age and educational attainment, and it went along with a rapid increase in part-time and fixed-term jobs as well as other forms of contingent work. At the same time, important institutional changes affected the wage formation mechanism, such as the abolition of automatic indexation in 1991 and the phasing-out of contribution relief for firms in the South since 1994.

It is common opinion that these changes, by their sheer magnitude, must have had a significant impact on the distribution of earnings and household incomes. Some suggest that low-paid positions are on the rise, and the concern has been frequently voiced that holding a job is no longer sufficient to avoid poverty. The higher volatility of employment opportunities has exacerbated the deficiencies of the Italian social safety net, which is largely ineffective in protecting persons with poor work experience or trapped in contingent jobs. The debate on the reform of the Italian welfare state has begun, but changes have been minor to date; a fully-fledged reform of existing unemployment benefit schemes has been repeatedly delayed; trials of a social inclusion income support mechanism (*reddito minimo di inserimento*) only began in 1998.

In this context, we need to ground the discussion on a factual documentation of developments in the distribution of earnings. To appreciate the importance of recent changes, one must put them in historical perspective and hence evaluate the information over a sufficiently long period of time. With this objective in mind, our contribution is twofold.

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[1] We are grateful for the helpful comments to Tony Atkinson, Matteo Bugamelli, Luigi Cannari and Daniele Checchi, and to participants in the Lower Conference on "Low-paid in Europe" (Bourdeaux, January 1997), the CEPR workshop on "New Inequalities" (La Coruña, February 1997), and the XV National Conference of AIEL (Ancona, September 2000), where preliminary versions of the paper were presented. We thank Roger Meservey and Raffaella Nizzi for the excellent editorial assistance. The views expressed herein are those of the authors and do not necessarily reflect those of the Bank of Italy or the Ministry of Labour.

First, we offer fresh statistical evidence on the evolution of the earnings distribution in the period from 1977 to 1998, revising and updating what little information is currently available (section 3). We focus on changes at the bottom of the distribution by measuring the extent of low-paid work, its trend over time and its socio-demographic composition (section 4). Our results are based on the most coherent database at our disposal, namely the micro-data of the Historical Archive of the Bank of Italy's Survey of Household Income and Wealth, which is extensively described in section 2 and Appendix.

Second, we exploit the richness of the database to study the link between the poverty status of households and the labour market conditions of their adult members (section 5). In particular, we look at the differential impact of employment status and low wages on poverty.

Two important limitations need to be stressed at the beginning. In the first place, we pay no attention to workers' earnings mobility and to transitions into and out of low-paid jobs. The concern over low-paid work would clearly be attenuated were such status mostly a temporary situation from which exit is easy. However, according to the evidence reported by Lucifora (1998) for employees in the private sector present continuously from 1975 to 1988, about half of the workers in the bottom tenth of the distribution in 1975 were still in the same tenth in 1988; the proportion rose to 60 per cent for the bottom fifth of the distribution. Thus, for a significant number of workers low pay may represent a permanent rather than a transitory condition. Moreover, we focus on salaried employment only. However debatable in the light of their numerical importance in Italy, the exclusion of the self-employed derives from the intrinsic difficulty of correctly measuring their labour earnings.[2]

[2] See Brandolini (2000a) for a full discussion of these issues. A growing number of independent contractors, consultants or free-lance workers, often called *parasubordinati* (i.e. quasi-employees), are engaged in marginal activities, in conditions frequently not very different from those of an employee except for being less well paid and less well protected. Data for 1995 indicate that the lower tail of the distribution of monthly after-tax labour earnings is much thicker among the self-employed than among employees (see Brandolini, 2000a, Chart 1).

## 2. A description of the data

In this paper we use the micro-data of the Historical Archive (HA) of the Bank of Italy's Survey of Household Income and Wealth (SHIW), which covers the period 1977-1998. Details about the structure and quality of the survey, especially with regard to the questions concerning employees and earnings, are provided in Appendix.

The use of micro-data from a household survey like the SHIW poses a number of problems. First, the pattern of non-responses may alter the representativeness of the sample, and earnings may be under-reported, or not reported at all. Second, earnings are recorded net of taxes and social security contributions. As the amounts reported are the result of computations performed by respondents, we cannot control the extent to which they reflect respondents' personal situation (e.g. the inclusion of family allowances; whether the implicit tax rate accounts for other sources of income, where taxation is progressive). Third, the relatively small size of the survey calls for some caution in interpreting the evidence, and it makes the coverage of some segments of the labour market insufficient (e.g. farm employees, workers with a university degree). Despite these problems, the SHIW is the only source of individual data that allows us to measure the changes in the *whole* Italian wage distribution consistently over a long period of time, and to relate labour earnings to households' total income.[3]

The basic sample examined in the paper includes all *primary* job position but excludes *secondary* job positions, i.e. the jobs that people may have in addition to their main occupation as employees or self-employed (they accounted for about 2 per cent of total positions at the beginning of the period, less than 0.5 per cent in the mid-1990s and 1.4 per cent in 1998). The size of the basic sample ranges from around 3,000 observations in the late 1970s to over 7,000 in the late 1980s (Table 1).

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[3] The administrative database of the National Social Security Institute (INPS) (see Abbate and Baldassarini, 1995; Lucifora, 1996; Casavola, Cipollone and Sestito, 1999) provides precise figures on pre-tax earnings and a few individual characteristics since the mid-1970s, but it covers only employees in the private sector who comply with the social security regulations (with the exclusion of certain employees at the managerial level) and it lacks information about their households and other sources of income. The new longitudinal household survey inititated by the national statistical institute (Istat) in 1994 to supply the Italian data in the European Community Household Panel shares most of the problems of the SHIW.

Employees working for the whole year account for the great majority of the sample, about 87 per cent on average. This proportion reflects, somewhat loosely, the business cycle, as the peak was reached in the expansion years 1989 and 1991; after dropping below 85 per cent during the recession of 1993, it returned near the average in 1998, despite the recent spread of fixed-term contracts. The share of self-declared part-time jobs, which is only available from 1986 on,[4] was about 5 per cent in 1986-87; it fell in 1989 and 1991 at the peak of the expansion and has steadily increased since, reaching 9 per cent in 1998. Nevertheless, the diffusion of part-time contracts in Italy is still well below the levels recorded in most advanced countries.

From 1977 to 1998, the share of female workers rose steadily from 31 to 41 per cent (Table 2). This tendency was paralleled by an increase in the proportion of jobs held by spouses from 17 to 26 per cent, while those held by household heads declined, mainly in the 1990s, from 55 to 48 per cent. The proportion of workers resident in Southern regions oscillated between 27 and 30 per cent, roughly reflecting the asymmetric business cycle. There was an appreciable improvement in educational attainment: the incidence of employees with high-school degrees doubled from 22 to 45 per cent; that of university graduates from 6 to 13 per cent. With regard to the age structure, the shares both of persons younger than 30 and of those older than 50 declined considerably. The first phenomenon reflects demographic evolution as well as the interaction of factors such as increasing education, the growing difficulty of finding a job for new entrants in the labour market, and the strength of family support, which allows young people to wait for better job opportunities. The falling proportion of persons older than 50 was facilitated by generous seniority pension schemes; the acceleration in 1993 and 1995 was brought about by people retiring early as the reform of the Italian pension system restricted eligibility conditions. As a

[4] Until 1984 part-time contracts were permitted but not explicitly regulated by the law; their provisions were set out directly by firms and workers, through individual negotiation or, more recently, collective agreements. Regular statistics did not exist, but scattered evidence suggests that their diffusion was marginal (see Istituto italiano per la promozione del lavoro a tempo parziale, 1980). Part-time work was first recognised and regulated by Law 863 of 19 December 1984, where it was defined with reference to the standard working time fixed in collective agreements. The share of part-time workers in total employment remained fairly modest until early 1990s; it has been steadily increasing ever since. National contracts have accommodated this tendency by raising the ceiling on the use of part-time work and by relaxing the restrictions on its application (see the chapter "The Labour Market" in Banca d'Italia, 2000a). For further details on part-time work in Italy see Addabbo (1997).

result of these tendencies, workers in the middle age groups came to account for 59 per cent of the total in 1998, compared with 47 per cent in 1977, and the age-profile of Italian employment turned out to be considerably different from the EU average. Lastly, the decrease in the proportions of production workers and of industrial employment were matched by increasing shares of clerical workers and employment in sundry services.

Table 1

**CHARACTERISTICS OF THE SAMPLES, 1977-1998**
(percentage shares, except for observations)

| Year | All primary job positions | | | | | | | Full-time job positions | | Non-farm prime-age male workers employed year-round | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | observations | whole-year | | | part-year | | | observations | whole-year | observations | part-time |
| | | total | full-time | part-time | total | full-time | part-time | | | | |
| 1977 | 2,815 | 88.2 | | | 11.8 | | | | | 854 | |
| 1978 | 3,262 | 85.1 | | | 14.9 | | | | | 909 | |
| 1979 | 2,988 | 86.2 | | | 13.8 | | | | | 844 | |
| 1980 | 3,013 | 86.4 | | | 13.6 | | | | | 852 | |
| 1981 | 4,151 | 85.7 | | | 14.3 | | | | | 1,196 | |
| 1982 | 4,172 | 85.6 | | | 14.4 | | | | | 1,168 | |
| 1983 | 4,123 | 87.4 | | | 12.6 | | | | | 1,201 | |
| 1984 | 3,853 | 86.2 | | | 13.8 | | | | | 1,201 | |
| 1986 | 6,988 | 83.7 | 81.7 | 2.0 | 16.3 | 13.4 | 2.9 | 6,627 | 85.9 | 2,196 | 0.5 |
| 1987 | 7,156 | 87.3 | 84.5 | 2.8 | 12.7 | 10.3 | 2.4 | 6,776 | 89.1 | 2,178 | 1.0 |
| 1989 | 7,061 | 92.6 | 90.3 | 2.3 | 7.4 | 6.1 | 1.3 | 6,783 | 93.7 | 2,249 | 0.4 |
| 1991 | 6,762 | 91.5 | 88.6 | 2.9 | 8.5 | 7.3 | 1.2 | 6,462 | 92.4 | 2,207 | 0.3 |
| 1993 | 6,479 | 84.8 | 81.4 | 3.4 | 15.2 | 12.5 | 2.7 | 6,096 | 86.6 | 1,955 | 0.8 |
| 1995 | 6,453 | 84.9 | 80.4 | 4.5 | 15.1 | 13.0 | 2.1 | 5,994 | 86.1 | 1,929 | 1.2 |
| 1998 | 5,837 | 86.3 | 81.1 | 5.2 | 13.7 | 9.8 | 3.9 | 5,312 | 89.2 | 1,796 | 1.1 |

*Source*: authors' elaboration on data from SHIW-HA (Release 1.0).

**COMPOSITION OF THE SAMPLES, 1977-1998**
(percentage shares)

| Personal characteristic | All job positions | | | | | | | | | | | | | | | Full-time job positions | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1986 | 1987 | 1989 | 1991 | 1993 | 1995 | 1998 | 1986 | 1987 | 1989 | 1991 | 1993 | 1995 | 1998 |
| Sex | | | | | | | | | | | | | | | | | | | | | | |
| male | 68.9 | 68.6 | 66.6 | 64.8 | 65.7 | 65.6 | 66.2 | 65.4 | 64.3 | 64.8 | 63.4 | 62.4 | 61.4 | 60.2 | 59.2 | 66.1 | 66.7 | 64.8 | 64.1 | 63.9 | 63.1 | 62.1 |
| female | 31.1 | 31.4 | 33.4 | 35.2 | 34.3 | 34.4 | 33.8 | 34.6 | 35.7 | 35.2 | 36.6 | 37.6 | 38.6 | 39.8 | 40.8 | 33.9 | 33.3 | 35.2 | 35.9 | 36.1 | 36.9 | 37.9 |
| Household position | | | | | | | | | | | | | | | | | | | | | | |
| head | 54.7 | 53.7 | 52.1 | 51.0 | 52.2 | 53.0 | 51.2 | 54.2 | 54.5 | 53.5 | 52.7 | 50.5 | 48.1 | 47.2 | 48.2 | 55.9 | 55.2 | 53.6 | 51.8 | 49.8 | 48.7 | 50.6 |
| spouse | 16.8 | 17.1 | 19.4 | 20.2 | 18.9 | 20.0 | 18.9 | 21.1 | 21.7 | 20.5 | 21.9 | 21.7 | 25.5 | 25.4 | 26.1 | 20.4 | 19.4 | 21.1 | 20.5 | 24.0 | 23.6 | 23.9 |
| child | 26.1 | 27.3 | 26.2 | 25.9 | 27.0 | 25.3 | 28.1 | 23.4 | 21.9 | 24.5 | 23.5 | 25.7 | 24.3 | 25.5 | 23.8 | 21.8 | 24.0 | 23.5 | 25.6 | 24.1 | 25.7 | 23.6 |
| other member | 2.4 | 1.9 | 2.3 | 2.9 | 2.0 | 1.8 | 1.8 | 1.3 | 2.0 | 1.5 | 1.9 | 2.1 | 2.1 | 1.9 | 1.9 | 1.9 | 1.4 | 1.8 | 2.1 | 2.1 | 1.9 | 1.8 |
| Age | | | | | | | | | | | | | | | | | | | | | | |
| under 30 | 35.5 | 34.1 | 35.1 | 34.9 | 36.9 | 32.9 | 34.4 | 29.8 | 28.9 | 31.2 | 31.9 | 30.4 | 29.3 | 29.3 | 26.0 | 28.7 | 30.7 | 31.6 | 30.1 | 28.7 | 29.1 | 25.0 |
| 31-50 | 47.3 | 47.5 | 48.0 | 48.0 | 46.9 | 49.5 | 49.2 | 53.4 | 55.1 | 51.8 | 52.9 | 54.4 | 56.8 | 56.8 | 59.2 | 55.5 | 52.4 | 53.1 | 54.6 | 56.9 | 56.7 | 59.8 |
| 51 and over | 17.3 | 18.4 | 16.9 | 17.1 | 16.2 | 17.6 | 16.3 | 16.8 | 15.9 | 17.0 | 15.2 | 15.2 | 13.9 | 13.9 | 14.8 | 15.9 | 17.0 | 15.3 | 15.3 | 14.3 | 14.2 | 15.2 |
| Education | | | | | | | | | | | | | | | | | | | | | | |
| none or primary | 42.7 | 38.0 | 37.8 | 30.2 | 30.3 | 27.4 | 26.4 | 24.5 | 26.2 | 23.1 | 19.1 | 18.2 | 15.6 | 13.1 | 10.8 | 25.1 | 22.4 | 18.7 | 17.8 | 15.3 | 12.4 | 10.4 |
| secondary | 29.7 | 29.8 | 29.7 | 31.8 | 32.8 | 33.0 | 35.7 | 32.6 | 33.8 | 35.2 | 34.7 | 32.1 | 38.4 | 33.6 | 32.0 | 34.1 | 35.7 | 35.0 | 32.2 | 38.2 | 33.4 | 31.5 |
| high school | 21.6 | 24.8 | 24.5 | 29.3 | 29.3 | 31.4 | 29.8 | 33.3 | 32.2 | 32.1 | 36.4 | 38.9 | 36.1 | 42.5 | 44.6 | 32.7 | 32.1 | 36.5 | 39.1 | 36.1 | 42.8 | 45.0 |
| university | 6.1 | 7.4 | 8.0 | 8.7 | 7.5 | 8.2 | 8.0 | 9.5 | 7.9 | 9.6 | 9.8 | 10.7 | 10.0 | 10.8 | 12.5 | 8.1 | 9.8 | 9.8 | 10.9 | 10.3 | 11.4 | 13.0 |
| Geographical area | | | | | | | | | | | | | | | | | | | | | | |
| North | 72.2 | 71.2 | 71.2 | 71.6 | 72.2 | 70.6 | 69.9 | 69.6 | 71.2 | 73.1 | 73.3 | 71.7 | 71.6 | 70.8 | 70.5 | 71.4 | 72.8 | 73.2 | 71.8 | 71.5 | 70.6 | 71.0 |
| South | 27.8 | 28.8 | 28.8 | 28.4 | 27.8 | 29.4 | 30.1 | 30.4 | 28.8 | 26.9 | 26.7 | 28.3 | 28.4 | 29.2 | 29.5 | 28.6 | 27.2 | 26.8 | 28.2 | 28.5 | 29.4 | 29.0 |
| Economic branch (a) | | | | | | | | | | | | | | | | | | | | | | |
| agriculture and fishery | 4.6 | 5.7 | 5.9 | 4.9 | 4.1 | 4.8 | 4.4 | 4.7 | 4.1 | 5.2 | 4.5 | 4.7 | 3.8 | 3.2 | 4.7 | 3.8 | 5.2 | 4.3 | 4.5 | 3.4 | 3.1 | 4.4 |
| industry | 43.6 | 43.1 | 41.8 | 41.0 | 41.3 | 38.3 | 34.8 | 29.9 | 36.8 | 34.0 | 37.4 | 35.3 | 35.8 | 35.0 | 33.6 | 37.5 | 34.7 | 37.7 | 36.1 | 36.6 | 36.0 | 35.3 |
| trade and lodging | 8.8 | 8.3 | 8.2 | 9.3 | 8.5 | 10.4 | 14.8 | 12.5 | 11.2 | 12.6 | 9.5 | 8.1 | 8.9 | 9.9 | 10.3 | 10.9 | 12.0 | 9.3 | 7.8 | 8.4 | 9.1 | 9.4 |
| transport and credit | 11.5 | 10.2 | 10.1 | 9.2 | 9.0 | 10.6 | 12.6 | 12.3 | 11.3 | 11.7 | 10.1 | 8.3 | 6.6 | 6.8 | 7.0 | 11.8 | 12.2 | 10.3 | 8.4 | 6.7 | 6.8 | 7.2 |
| other services | 31.5 | 32.7 | 34.0 | 35.6 | 37.2 | 36.0 | 33.4 | 40.5 | 36.5 | 36.5 | 38.5 | 43.6 | 44.9 | 45.2 | 44.5 | 35.9 | 35.9 | 38.3 | 43.1 | 44.9 | 44.9 | 43.7 |
| Job status (a) | | | | | | | | | | | | | | | | | | | | | | |
| production workers | 67.3 | 62.2 | 63.1 | 54.2 | 55.6 | 51.6 | 55.3 | 56.1 | 52.5 | 52.0 | 47.5 | 45.2 | 46.8 | 47.5 | 46.0 | 51.4 | 51.2 | 47.4 | 44.9 | 46.1 | 46.7 | 45.0 |
| clerical workers | 30.7 | 35.3 | 34.2 | 43.3 | 42.1 | 45.9 | 42.7 | 41.4 | 46.2 | 46.2 | 50.2 | 52.6 | 51.2 | 50.4 | 51.7 | 47.2 | 46.9 | 50.2 | 52.9 | 51.7 | 51.1 | 52.6 |
| managerial workers | 2.0 | 2.5 | 2.6 | 2.5 | 2.2 | 2.4 | 1.9 | 2.5 | 1.3 | 1.8 | 2.3 | 2.1 | 2.1 | 2.1 | 2.3 | 1.4 | 2.0 | 2.3 | 2.2 | 2.2 | 2.2 | 2.4 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Table 2 (*continued*)

| Personal characteristic | Non-farm prime-age male workers employed year-round | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1986 | 1987 | 1989 | 1991 | 1993 | 1995 | 1998 |
| Sex | | | | | | | | | | | | | | | |
| male | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| female | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Household position | | | | | | | | | | | | | | | |
| head | 92.4 | 93.9 | 92.9 | 93.6 | 91.2 | 92.8 | 94.1 | 92.4 | 93.3 | 92.9 | 91.1 | 89.1 | 81.8 | 81.7 | 82.3 |
| spouse | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.0 | 0.1 | 0.3 | 0.1 | 0.2 | 0.8 | 0.8 | 9.1 | 8.9 | 6.8 |
| child | 5.6 | 4.8 | 5.9 | 4.5 | 6.7 | 6.4 | 5.2 | 6.2 | 5.7 | 6.5 | 6.9 | 8.6 | 7.6 | 8.5 | 9.3 |
| other member | 1.8 | 1.1 | 1.1 | 1.7 | 1.9 | 0.7 | 0.6 | 1.1 | 1.0 | 0.4 | 1.2 | 1.6 | 1.5 | 0.9 | 1.6 |
| Age | | | | | | | | | | | | | | | |
| under 30 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 31-50 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 51 and over | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Education | | | | | | | | | | | | | | | |
| none or primary | 45.5 | 37.2 | 39.2 | 31.4 | 33.5 | 26.2 | 27.1 | 23.0 | 22.5 | 22.8 | 20.8 | 18.8 | 14.0 | 13.1 | 8.2 |
| secondary | 28.9 | 29.5 | 30.9 | 33.0 | 29.4 | 34.3 | 33.6 | 34.7 | 34.2 | 36.3 | 34.4 | 33.0 | 40.2 | 33.6 | 36.9 |
| high school | 17.8 | 24.6 | 18.6 | 26.2 | 28.7 | 30.2 | 30.3 | 31.2 | 32.9 | 30.6 | 33.6 | 35.7 | 34.5 | 41.2 | 44.0 |
| university | 7.7 | 8.7 | 11.3 | 9.4 | 8.4 | 9.3 | 9.0 | 11.1 | 10.3 | 10.3 | 11.2 | 12.5 | 11.3 | 12.1 | 10.9 |
| Geographical area | | | | | | | | | | | | | | | |
| North | 77.1 | 75.2 | 75.0 | 74.3 | 76.4 | 73.3 | 73.1 | 69.9 | 71.2 | 70.5 | 69.6 | 72.0 | 71.3 | 70.1 | 70.0 |
| South | 22.9 | 24.8 | 25.0 | 25.7 | 23.6 | 26.7 | 26.9 | 30.1 | 28.8 | 29.5 | 30.4 | 28.0 | 28.7 | 29.9 | 30.0 |
| Economic branch (a) | | | | | | | | | | | | | | | |
| agriculture and fishery | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| industry | 50.2 | 45.7 | 46.4 | 50.7 | 46.6 | 43.2 | 40.0 | 37.8 | 41.2 | 38.0 | 41.7 | 40.4 | 39.2 | 40.8 | 43.0 |
| trade and lodging | 4.9 | 6.1 | 4.0 | 5.1 | 5.6 | 4.8 | 9.5 | 8.2 | 6.7 | 10.4 | 6.8 | 7.0 | 5.6 | 7.8 | 7.6 |
| transport and credit | 16.7 | 17.7 | 17.4 | 13.2 | 14.3 | 17.8 | 20.0 | 19.9 | 18.1 | 18.0 | 15.1 | 12.7 | 11.1 | 8.8 | 9.0 |
| other services | 28.2 | 30.5 | 32.2 | 31.0 | 33.4 | 34.2 | 30.5 | 34.0 | 34.0 | 33.6 | 36.4 | 39.9 | 44.1 | 42.7 | 40.4 |
| Job status (a) | | | | | | | | | | | | | | | |
| production workers | 64.9 | 58.2 | 58.4 | 51.5 | 51.2 | 48.2 | 51.0 | 53.1 | 42.8 | 48.5 | 45.2 | 43.1 | 43.7 | 46.2 | 47.6 |
| clerical workers | 31.2 | 37.1 | 36.1 | 43.6 | 44.8 | 47.7 | 45.7 | 42.0 | 54.8 | 48.7 | 51.1 | 53.3 | 52.6 | 50.4 | 49.2 |
| managerial workers | 3.9 | 4.7 | 5.5 | 4.9 | 4.0 | 4.1 | 3.2 | 4.9 | 2.4 | 2.8 | 3.7 | 3.6 | 3.6 | 3.4 | 3.2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

*Source and notes*: authors' elaboration on data from SHIW-HA (Release 1.0). Figures might not add up to 100 because of rounding. (a) Population shares were calculated after elimination of few missing values.

In addition to the basic sample just described, we focus on two sub-samples. The first is constructed by excluding self-declared part-time workers, and is consequently limited to the period from 1986 onwards. The share of workers employed for the whole year turns out to be slightly higher than in the basic sample (Table 1); the sub-sample composition is virtually unchanged, except for a somewhat lower proportion of females (and spouses), among whom part-time is more frequent (Table 2). The second sub-sample tries to isolate what is conceivably *core employment*: non-farm male employees, aged 30 to 50, working year-round. We did not exclude part-time workers in order to have longer time-series, but the results should not be significantly altered as the incidence of part-time in this sub-group is minimal (below 1 per cent; Table 1). In this sub-sample, the share of workers living in the South rises considerably in the period examined. It is higher than in the basic sample from the late 1980s on (except in 1991), which might reflect a difference in participation by men and women. In comparison with the basic sample, core employment shows a higher proportion of persons with a university degree (except in 1998), and a lower share of production workers (Table 2).

## 3. Changes in the distribution of earnings

### *3.1 The SHIW evidence for 1977-1998*

We focus on the distribution of *real monthly net earnings*, obtained by dividing total earnings, net of taxes and social security contributions, by the number of months worked in the year in each job and deflating by the consumer price index for the population as a whole.[5] We cannot compute hourly earnings because hours worked are only available for some years and are imprecisely estimated, so we control for differences in working time by looking at the sample of full-time workers only. The moments of the distributions are

[5] By adopting the *national* consumer price index, we neglect the differences in purchasing power induced by the variability of price levels across regions – a choice that is unavoidable due to the lack of official data. Caruso, Sabbatini and Sestito (1993) have found that prices, particularly housing prices, rose more rapidly in the North than in the South in the 1970s and 1980s, and Cannari (1993) has estimated that, in 1989, price levels were higher in the North than in the South, and were positively correlated with town size. On the basis of this evidence, we are probably overestimating the inequality of *real* net earnings as well as biasing its changes over time.

characterised by some considerable year-to-year changes, both for the full sample and for the sub-samples. This is probably due in part to the small size of the sample, but to some extent it is also the outcome of the staggered renewal of labour contracts, the operation of the wage indexation system, and the modifications in the composition of the labour force. Whatever the reasons of such variability, we shall mainly concentrate on medium-term movements rather than annual changes.

Between 1977 and 1989, both mean and median real monthly net earnings rose by about one fourth, or 1.8 per cent per year (Chart 1; Table 3). In the following nine years, they declined by around 1 per cent per year; some of this reduction was due to the spread of part-time work, as is shown by the much smaller drop in monthly earnings of full-time employees. In the 1990s, the decline in monthly wages was compounded with a reduction in the average number of months worked (from 11.6 in 1989 to 11.0 in 1995 and 11.3 in 1998), causing a pronounced fall in annual income from employment. Data on gross wages are not available in the SHIW, but a rough comparison with the national accounts suggests that much of the fall in net earnings in the 1990s may have been caused by the rising fiscal burden.

In Chart 1 we plot the time profile of two measures of dispersion of real monthly net earnings,[6] the Gini index of concentration and the decile ratio.[7] The Gini index of the overall distribution shows a narrowing during the 1980s, somewhat stronger at the beginning, a sharp widening in the early 1990s and substantial stability between 1993 and 1998 (Table 4). The decile ratio, which is insensitive to movements in the middle of the distribution, shares this same pattern, though its increase from 1989 to 1998 is more regular (Table 3).[8] The

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[6] As positions held for part of the year account for a sizeable proportion of jobs (see Table 1), the dispersion of *annual* earnings is significantly greater than that of monthly earnings. It would, however, exhibit a rather similar pattern over time, possibly with larger year-to-year changes.

[7] The Gini index of concentration is defined as one-half of the arithmetic average of the absolute values of difference between all pairs of monthly earnings divided by their mean; it is equal to twice the area between the 45-degree line and the Lorenz curve, and it ranges between 0 (perfect equality) and 1 (maximum inequality). The decile ratio is obtained by dividing the 90th percentile by the 10th percentile of the distribution.

[8] A substantially similar story is told by the polarisation index, a measure ranging from 0 to 1 proposed by Wolfson (1994, p. 354) to capture "... the 'spreadoutness' from the middle ...". This index for all primary jobs showed some fluctuations but it declined from 16.3 per cent in 1977 to 13.4 per cent in 1989, suggesting some "thickening" of the middle of the distribution; it then rose abruptly to 17.3 per cent in 1993, falling back below

dispersion of real earnings among full-time employees is less than in the whole sample, but it moved in a similar way over the period 1977-1998. Some difference emerged in mid-1990s, as the spread of part-time jobs turned a decreasing Gini index for the distribution among full-time workers into an increasing one overall. This difference should not be overemphasised, however, as it is within the bounds of sampling error. The evidence changes if we look at prime-age non-agricultural male workers employed year-round: their wage distribution is much more equal than that of the entire sample. Inequality diminished until the early 1980s and then tended to increase, through ups and downs, during the remaining of the decade, anticipating the trend reversal undergone by the full sample. Changes for this sub-group are much less marked, however.

In the overall sample, the narrowing of the spread stemmed from gains at the bottom as well as (relative) losses at the top. Between 1977 and 1989, the ratio to the median of the monthly pay of employees at the 10th percentile rose from 51 to 67 per cent, while that of employees at the 90th percentile fell from 154 to 144 per cent; gains and losses were smaller, the closer workers were to the median (Chart 2; Table 5). The rise in inequality in the 1990s reversed the changes of the previous decade, with earnings at different percentiles returning to their 1977 levels. Between 1995 and 1998 noticeable losses for employees at the top (80th and 90th percentiles) and bottom (10th percentile) resulted in the relative stability of overall inequality.

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16 per cent by 1998 (Table 3). If we restrict the sample to non-farm prime-age male workers, polarisation rose in the mid-1980s but remained fairly stable afterwards.

Table 3

**MEAN, MEDIAN AND MEASURES OF DISPERSION OF THE DISTRIBUTION OF REAL MONTHLY NET EARNINGS, 1977-1998**
(thousand lire at 1998 prices and percentage values)

| Year | Mean | Median | Mean logarithmic deviation | Theil index | Half coefficient of variation squared | Wolfson polarisation index | Quintile ratio | Decile ratio |
|---|---|---|---|---|---|---|---|---|
| All primary jobs | | | | | | | | |
| 1977 | 1,852 | 1,789 | 11.7 | 10.9 | 14.4 | 16.3 | 179 | 300 |
| 1978 | 1,916 | 1,841 | 12.4 | 11.7 | 15.3 | 15.9 | 180 | 292 |
| 1979 | 1,911 | 1,781 | 11.4 | 10.5 | 12.9 | 15.9 | 167 | 300 |
| 1980 | 1,969 | 1,911 | 9.7 | 8.4 | 8.8 | 15.0 | 171 | 264 |
| 1981 | 1,954 | 1,919 | 11.0 | 10.2 | 13.8 | 15.1 | 168 | 278 |
| 1982 | 2,012 | 1,901 | 8.9 | 7.9 | 8.6 | 14.8 | 171 | 257 |
| 1983 | 1,982 | 1,851 | 8.7 | 8.0 | 8.7 | 15.6 | 167 | 250 |
| 1984 | 2,056 | 1,995 | 8.8 | 8.3 | 9.6 | 14.1 | 167 | 250 |
| 1986 | 2,042 | 2,014 | 7.7 | 7.3 | 7.9 | 13.4 | 167 | 250 |
| 1987 | 2,193 | 2,060 | 7.5 | 7.6 | 8.9 | 14.4 | 160 | 238 |
| 1989 | 2,299 | 2,214 | 6.5 | 7.0 | 8.5 | 13.4 | 157 | 217 |
| 1991 | 2,204 | 2,066 | 6.6 | 6.9 | 8.7 | 14.5 | 167 | 242 |
| 1993 | 2,235 | 2,073 | 11.0 | 11.1 | 14.4 | 17.3 | 184 | 275 |
| 1995 | 2,149 | 1,983 | 9.8 | 10.2 | 13.0 | 16.9 | 188 | 277 |
| 1998 | 2,094 | 2,000 | 12.1 | 11.2 | 13.9 | 15.9 | 167 | 308 |
| Full-time jobs | | | | | | | | |
| 1986 | 2,090 | 2,014 | 6.6 | 6.4 | 7.1 | 12.7 | 167 | 222 |
| 1987 | 2,238 | 2,060 | 6.6 | 6.9 | 8.2 | 14.0 | 163 | 226 |
| 1989 | 2,326 | 2,214 | 5.9 | 6.5 | 8.1 | 13.0 | 157 | 217 |
| 1991 | 2,241 | 2,120 | 5.9 | 6.3 | 8.2 | 13.8 | 167 | 223 |
| 1993 | 2,302 | 2,122 | 9.5 | 9.9 | 13.2 | 16.4 | 175 | 252 |
| 1995 | 2,215 | 1,992 | 8.5 | 9.2 | 11.9 | 16.3 | 176 | 240 |
| 1998 | 2,202 | 2,083 | 8.9 | 9.2 | 12.2 | 14.2 | 163 | 260 |
| Non-farm prime-age male workers employed year-round | | | | | | | | |
| 1977 | 2,397 | 2,115 | 6.5 | 7.7 | 12.4 | 14.7 | 167 | 219 |
| 1978 | 2,334 | 2,138 | 6.8 | 8.2 | 13.0 | 13.1 | 163 | 200 |
| 1979 | 2,390 | 2,205 | 5.7 | 6.3 | 8.0 | 11.1 | 150 | 200 |
| 1980 | 2,361 | 2,214 | 4.8 | 5.2 | 6.1 | 12.1 | 155 | 202 |
| 1981 | 2,417 | 2,281 | 5.2 | 6.5 | 10.7 | 11.4 | 149 | 191 |
| 1982 | 2,410 | 2,210 | 5.0 | 5.2 | 5.8 | 13.1 | 165 | 195 |
| 1983 | 2,450 | 2,294 | 5.1 | 4.9 | 5.2 | 12.1 | 150 | 200 |
| 1984 | 2,461 | 2,244 | 5.3 | 5.9 | 7.5 | 11.6 | 153 | 200 |
| 1986 | 2,560 | 2,321 | 4.6 | 4.9 | 5.6 | 12.7 | 154 | 200 |
| 1987 | 2,634 | 2,399 | 5.6 | 6.2 | 7.6 | 13.7 | 157 | 208 |
| 1989 | 2,607 | 2,392 | 5.8 | 6.6 | 8.2 | 13.5 | 156 | 208 |
| 1991 | 2,686 | 2,468 | 5.2 | 5.6 | 6.6 | 13.6 | 158 | 213 |
| 1993 | 2,557 | 2,299 | 6.3 | 6.9 | 8.3 | 14.0 | 160 | 222 |
| 1995 | 2,499 | 2,250 | 6.4 | 7.0 | 8.6 | 14.6 | 170 | 225 |
| 1998 | 2,542 | 2,333 | 6.6 | 7.4 | 9.6 | 14.2 | 164 | 212 |

*Source*: authors' elaboration on data from SHIW-HA (Release 1.0).

Table 4

**GINI INDEX OF CONCENTRATION FOR REAL MONTHLY NET EARNINGS BY SEX AND REGION, 1977-1998**

(per cent; asymptotic standard error × 100 in parenthesis)

| Year | All | | Males | | Females | | North | | South | |
|---|---|---|---|---|---|---|---|---|---|---|
| All primary jobs | | | | | | | | | | |
| 1977 | 23.8 | (0.58) | 22.0 | (0.70) | 23.6 | (0.76) | 22.7 | (0.55) | 25.6 | (1.61) |
| 1978 | 24.3 | (0.61) | 22.5 | (0.73) | 24.2 | (0.91) | 24.3 | (0.72) | 22.8 | (0.95) |
| 1979 | 23.1 | (0.59) | 21.7 | (0.73) | 22.6 | (0.84) | 21.7 | (0.56) | 25.7 | (1.57) |
| 1980 | 21.3 | (0.43) | 20.3 | (0.52) | 20.9 | (0.67) | 20.9 | (0.51) | 21.2 | (0.69) |
| 1981 | 22.3 | (0.64) | 20.1 | (0.77) | 24.1 | (1.06) | 21.2 | (0.73) | 24.7 | (1.28) |
| 1982 | 20.7 | (0.44) | 19.8 | (0.52) | 19.7 | (0.72) | 20.2 | (0.54) | 21.3 | (0.65) |
| 1983 | 21.0 | (0.42) | 19.7 | (0.47) | 21.0 | (0.79) | 20.7 | (0.52) | 21.2 | (0.70) |
| 1984 | 20.9 | (0.52) | 20.4 | (0.66) | 18.8 | (0.63) | 20.8 | (0.67) | 20.4 | (0.62) |
| 1986 | 20.1 | (0.45) | 19.2 | (0.53) | 18.6 | (0.63) | 19.7 | (0.56) | 20.4 | (0.64) |
| 1987 | 20.4 | (0.49) | 20.1 | (0.59) | 18.3 | (0.70) | 20.8 | (0.58) | 18.7 | (0.77) |
| 1989 | 19.3 | (0.42) | 19.6 | (0.52) | 17.2 | (0.61) | 19.9 | (0.53) | 17.9 | (0.56) |
| 1991 | 19.4 | (0.46) | 19.2 | (0.56) | 17.9 | (0.66) | 19.6 | (0.55) | 18.8 | (0.78) |
| 1993 | 24.1 | (0.65) | 23.3 | (0.70) | 23.2 | (1.32) | 23.3 | (0.78) | 25.9 | (1.19) |
| 1995 | 23.4 | (0.52) | 23.2 | (0.69) | 21.7 | (0.67) | 23.2 | (0.64) | 23.8 | (0.87) |
| 1998 | 24.1 | (0.54) | 23.5 | (0.66) | 23.4 | (0.91) | 23.1 | (0.64) | 26.1 | (0.95) |
| Full-time jobs | | | | | | | | | | |
| 1986 | 18.9 | (0.44) | 18.8 | (0.53) | 16.2 | (0.61) | 18.4 | (0.55) | 19.5 | (0.65) |
| 1987 | 19.5 | (0.49) | 19.7 | (0.59) | 16.3 | (0.72) | 19.6 | (0.58) | 18.1 | (0.78) |
| 1989 | 18.7 | (0.42) | 19.4 | (0.53) | 15.6 | (0.57) | 19.2 | (0.53) | 17.2 | (0.54) |
| 1991 | 18.6 | (0.45) | 19.0 | (0.56) | 16.2 | (0.63) | 18.7 | (0.54) | 18.2 | (0.78) |
| 1993 | 22.7 | (0.66) | 22.9 | (0.70) | 20.6 | (1.40) | 21.9 | (0.78) | 24.6 | (1.21) |
| 1995 | 22.0 | (0.53) | 23.0 | (0.69) | 18.6 | (0.66) | 21.8 | (0.64) | 22.5 | (0.88) |
| 1998 | 21.6 | (0.52) | 22.0 | (0.64) | 19.7 | (0.92) | 21.0 | (0.63) | 22.6 | (0.88) |
| Non-farm prime-age male workers employed year-round | | | | | | | | | | |
| 1977 | 19.1 | (1.01) | | | | | | | | |
| 1978 | 19.2 | (1.15) | | | | | | | | |
| 1979 | 17.6 | (0.82) | | | | | | | | |
| 1980 | 16.7 | (0.67) | | | | | | | | |
| 1981 | 16.7 | (1.26) | | | | | | | | |
| 1982 | 17.1 | (0.65) | | | | | | | | |
| 1983 | 16.3 | (0.65) | | | | | | | | |
| 1984 | 17.3 | (0.90) | | | | | | | | |
| 1986 | 16.5 | (0.74) | | | | | | | | |
| 1987 | 18.3 | (0.80) | | | | | | | | |
| 1989 | 18.6 | (0.72) | | | | | | | | |
| 1991 | 17.8 | (0.72) | | | | | | | | |
| 1993 | 19.5 | (0.94) | | | | | | | | |
| 1995 | 19.6 | (0.81) | | | | | | | | |
| 1998 | 19.6 | (0.77) | | | | | | | | |

*Source*: authors' elaboration on data from SHIW-HA (Release 1.0). Asymptotic standard errors calculated according to the formula derived by Cowell (1989), assuming known mean of sample weights.

Table 5

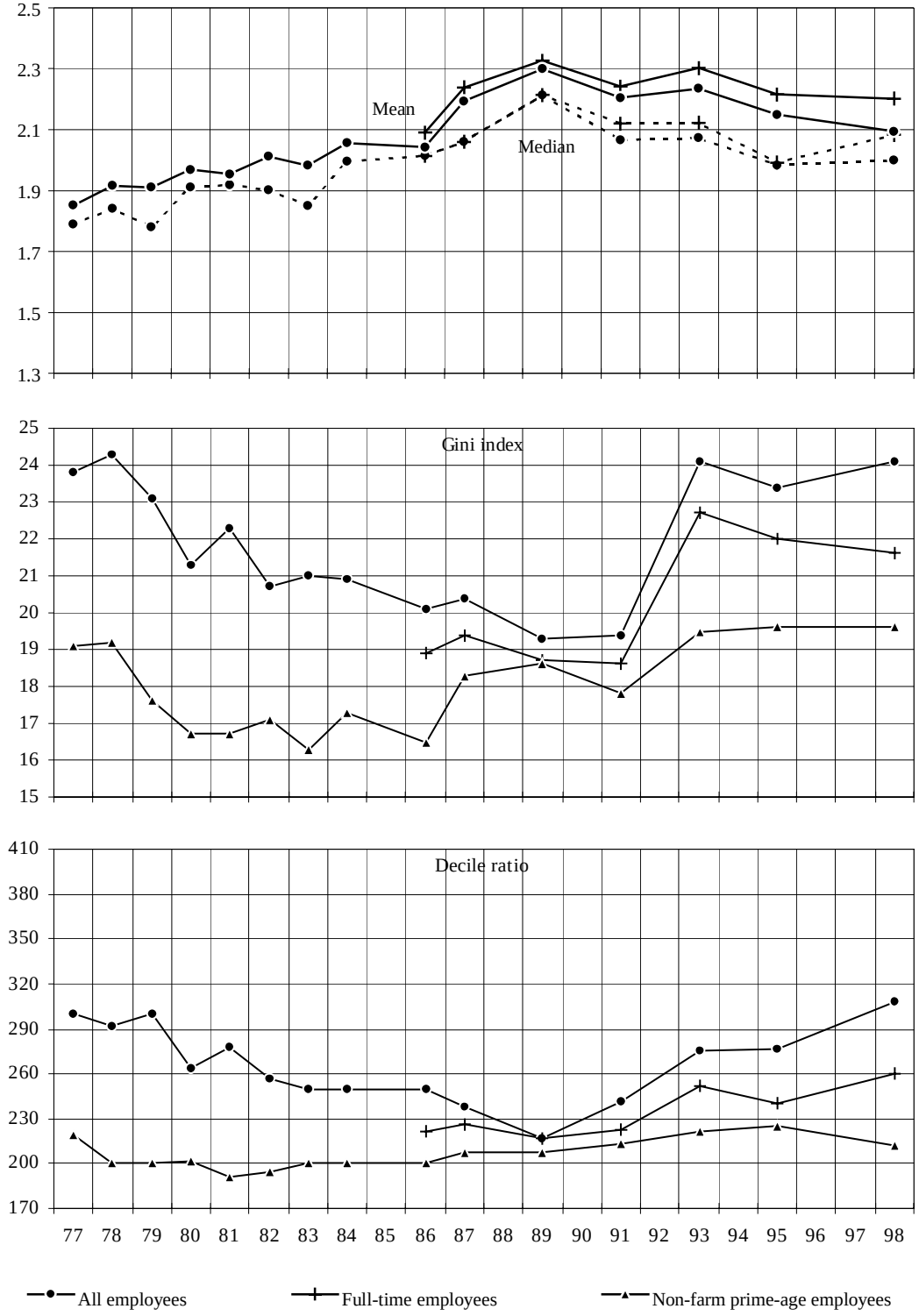
**RATIOS TO THE MEDIAN OF PERCENTILES OF THE DISTRIBUTION OF REAL MONTHLY NET EARNINGS, 1977-1998**
(percentage values)

| Year | $P_{05}$ | $P_{10}$ | $P_{20}$ | $P_{30}$ | $P_{40}$ | $P_{60}$ | $P_{70}$ | $P_{80}$ | $P_{90}$ | $P_{95}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| All primary jobs | | | | | | | | | | |
| 1977 | 31 | 51 | 72 | 82 | 90 | 103 | 115 | 128 | 154 | 180 |
| 1978 | 33 | 53 | 72 | 83 | 89 | 107 | 111 | 130 | 156 | 178 |
| 1979 | 36 | 50 | 78 | 86 | 96 | 110 | 120 | 130 | 150 | 180 |
| 1980 | 37 | 55 | 74 | 85 | 92 | 108 | 115 | 126 | 146 | 175 |
| 1981 | 36 | 51 | 76 | 83 | 92 | 106 | 115 | 128 | 143 | 167 |
| 1982 | 42 | 60 | 78 | 89 | 94 | 111 | 117 | 133 | 154 | 178 |
| 1983 | 44 | 60 | 78 | 90 | 96 | 110 | 119 | 129 | 149 | 179 |
| 1984 | 43 | 60 | 75 | 83 | 92 | 108 | 115 | 125 | 150 | 167 |
| 1986 | 43 | 57 | 73 | 86 | 93 | 104 | 111 | 121 | 143 | 171 |
| 1987 | 50 | 66 | 80 | 87 | 93 | 107 | 117 | 128 | 156 | 180 |
| 1989 | 56 | 67 | 78 | 83 | 89 | 100 | 111 | 122 | 144 | 167 |
| 1991 | 55 | 63 | 79 | 84 | 95 | 105 | 116 | 132 | 153 | 174 |
| 1993 | 43 | 57 | 72 | 83 | 92 | 110 | 119 | 133 | 157 | 191 |
| 1995 | 46 | 59 | 73 | 82 | 91 | 109 | 118 | 136 | 164 | 191 |
| 1998 | 38 | 50 | 75 | 83 | 92 | 107 | 117 | 125 | 154 | 188 |
| Full-time jobs | | | | | | | | | | |
| 1986 | 53 | 64 | 77 | 86 | 93 | 107 | 114 | 129 | 143 | 171 |
| 1987 | 60 | 69 | 80 | 87 | 93 | 107 | 120 | 130 | 157 | 180 |
| 1989 | 61 | 67 | 78 | 83 | 89 | 103 | 111 | 122 | 144 | 167 |
| 1991 | 61 | 67 | 77 | 86 | 92 | 103 | 115 | 128 | 149 | 174 |
| 1993 | 48 | 63 | 74 | 84 | 93 | 109 | 116 | 130 | 158 | 187 |
| 1995 | 54 | 68 | 77 | 86 | 91 | 109 | 118 | 136 | 163 | 190 |
| 1998 | 48 | 60 | 76 | 84 | 92 | 104 | 113 | 124 | 156 | 180 |
| Non-farm prime-age male workers employed year-round | | | | | | | | | | |
| 1977 | 67 | 71 | 80 | 89 | 93 | 111 | 118 | 133 | 156 | 178 |
| 1978 | 70 | 77 | 83 | 91 | 97 | 106 | 116 | 135 | 155 | 193 |
| 1979 | 67 | 75 | 83 | 90 | 100 | 108 | 117 | 125 | 150 | 183 |
| 1980 | 67 | 77 | 80 | 91 | 93 | 107 | 113 | 124 | 155 | 173 |
| 1981 | 67 | 76 | 82 | 89 | 94 | 106 | 111 | 122 | 144 | 162 |
| 1982 | 65 | 74 | 79 | 88 | 93 | 108 | 111 | 130 | 144 | 167 |
| 1983 | 71 | 75 | 83 | 92 | 100 | 108 | 117 | 125 | 150 | 181 |
| 1984 | 65 | 73 | 80 | 87 | 94 | 104 | 109 | 123 | 145 | 174 |
| 1986 | 71 | 77 | 83 | 90 | 96 | 109 | 115 | 128 | 154 | 192 |
| 1987 | 71 | 74 | 83 | 89 | 95 | 107 | 118 | 130 | 154 | 186 |
| 1989 | 67 | 74 | 82 | 87 | 92 | 108 | 118 | 128 | 154 | 185 |
| 1991 | 68 | 73 | 82 | 89 | 91 | 109 | 114 | 130 | 155 | 182 |
| 1993 | 64 | 72 | 80 | 86 | 92 | 104 | 116 | 128 | 160 | 184 |
| 1995 | 63 | 71 | 78 | 86 | 94 | 110 | 118 | 133 | 159 | 195 |
| 1998 | 67 | 73 | 82 | 89 | 96 | 111 | 119 | 133 | 156 | 185 |

*Source*: authors' elaboration on data from SHIW-HA (Release 1.0).

Chart 1

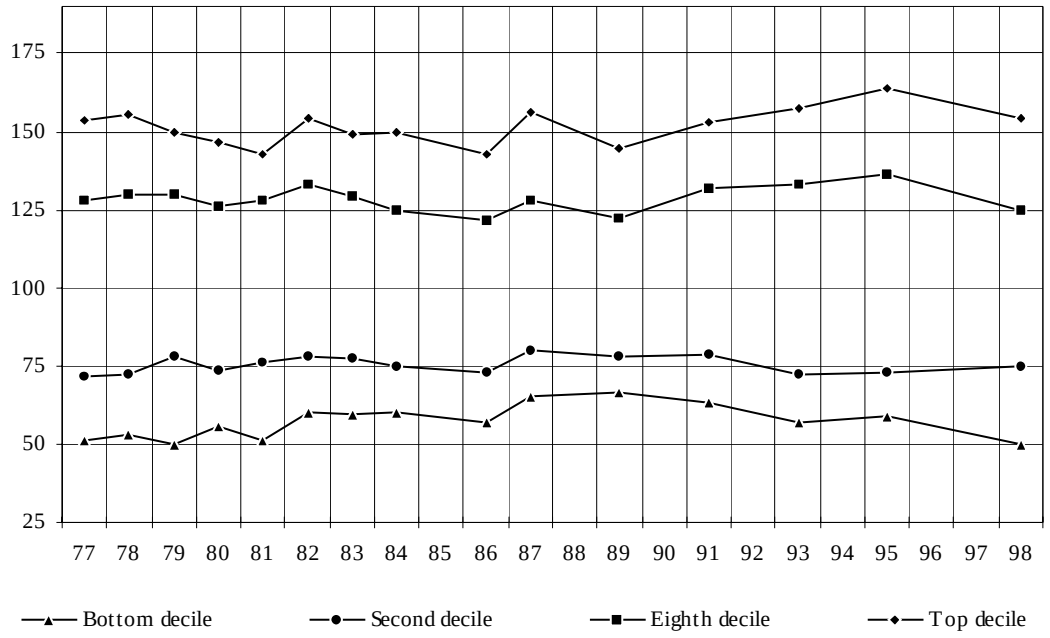
**DISTRIBUTION OF REAL MONTHLY NET EARNINGS, 1977-1998**
(million lire at 1998 prices and per cent)




*Source*: authors' elaboration on data from SHIW-HA (Release 1.0).

Chart 2

**PERCENTILE RATIOS TO MEDIAN FOR REAL MONTHLY NET EARNINGS, 1977-1998**
(percentage ratios; median = 100)



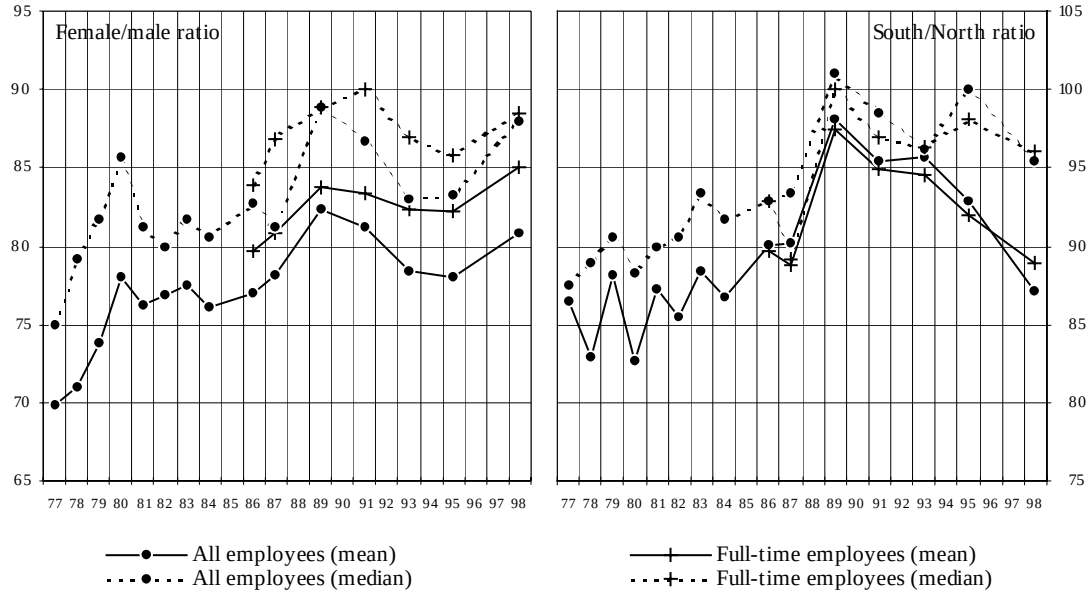

*Source*: authors' elaboration on data from SHIW-HA (Release 1.0).

### *3.2 The SHIW evidence for 1977-1998 by sex and region*

In order to shed further light on the evolution of the overall distribution we broke down the population along two relevant dimensions: sex and geographical area. Gender differentials showed fairly large variations from year to year, probably amplified by the small size of the female sub-sample (Chart 3). However, a rather clear tendency towards closing the gap emerged from 1977 to 1989, as the ratio of women's to men's mean earnings rose by 10 percentage points to over 80 per cent; the ratio declined in the mid-1990s, but returned to 81 per cent in 1998. The narrower gap based on median earnings exhibited the same pattern. Differentials were smaller and somewhat more stable for full-time workers, part-time work being concentrated among women. In the 1980s, the bottom two deciles of the female distribution gained sharply relative to the national median, whereas in the 1990s a rise at the top corresponded to a deterioration for the lowest deciles (Chart 4).

Chart 3

**GENDER AND GEOGRAPHICAL DIFFERENTIALS, 1977-1998**
(percentage ratios)




*Source*: authors' elaboration on data from SHIW-HA (Release 1.0).

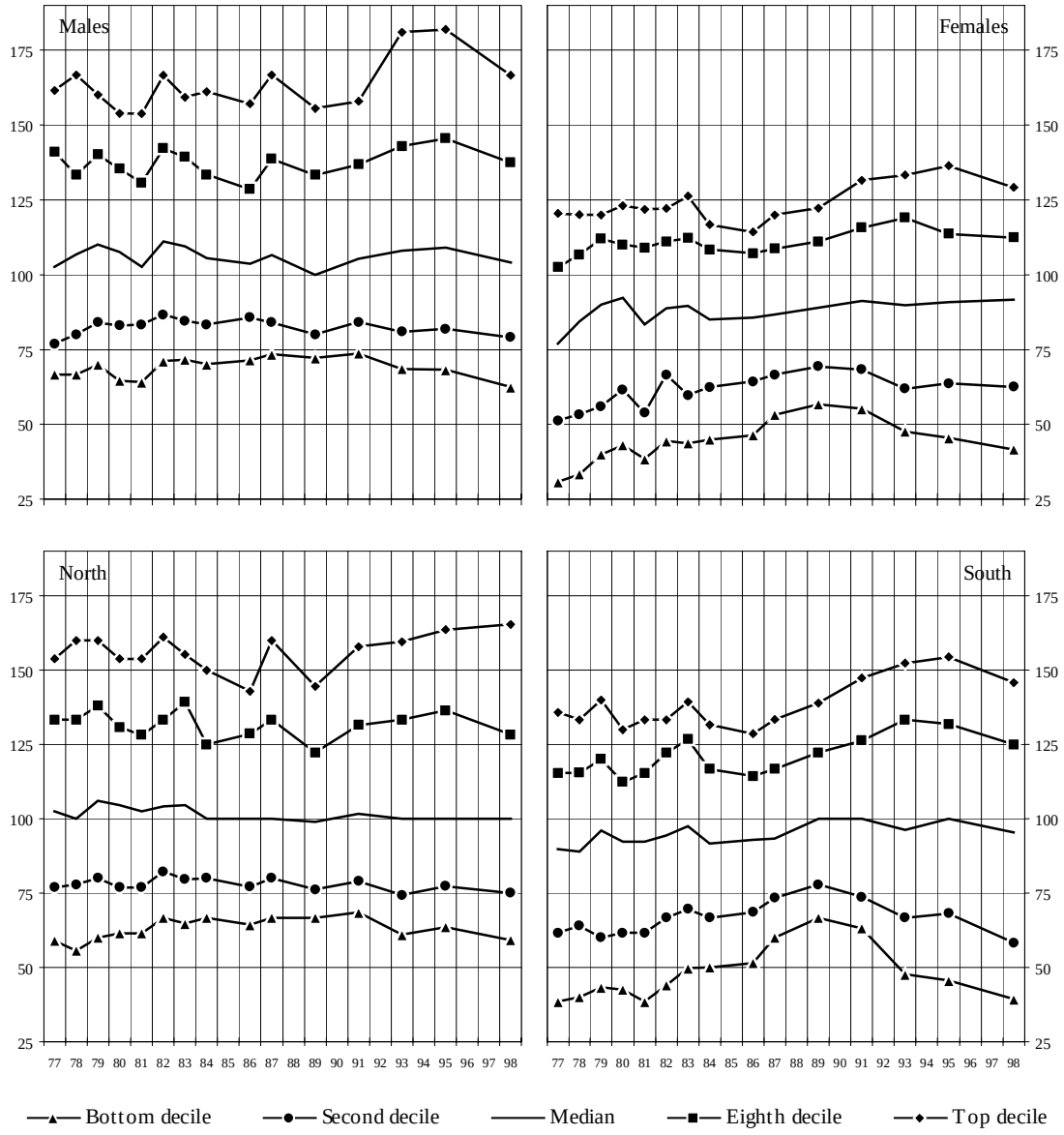
Inequality, as measured by the Gini index, diminished in 1979 and 1980 for both men and women (Chart 5). Equalisation continued over the 1980s at a somewhat slower pace for men than for women.[9] Between 1991 and 1993, the reduction in inequality over the previous 15 years was completely undone: for workers of either sex the Gini index rose above 23 per cent, as against 22 for men and 24 for women in 1977-78 (Table 4). Inequality did not change from 1993 to 1998 for male employees, while it first declined and then went back to the 1993 value for female employees. The picture is broadly similar for the decile ratio, although the fall during the 1980s is less pronounced for men's earnings and the rise in the mid-1990s is more modest for women's. Monthly earnings of women employed full-time were considerably less dispersed than in the full sample, but the behaviour over time was similar. For men, the exclusion of part-time workers, a small minority, makes virtually no difference to the inequality pattern except in 1998, which shows a fall instead of a stability.

[9] The composition of the sample for 1981 is at odds with other external information, particularly for women. We therefore disregard the dispersion of women's wages measured in this year.

Chart 4

**PERCENTILE RATIOS TO NATIONAL MEDIAN OF REAL MONTHLY NET EARNINGS BY SEX AND REGION, 1977-1998**

(percentage values; national median = 100)



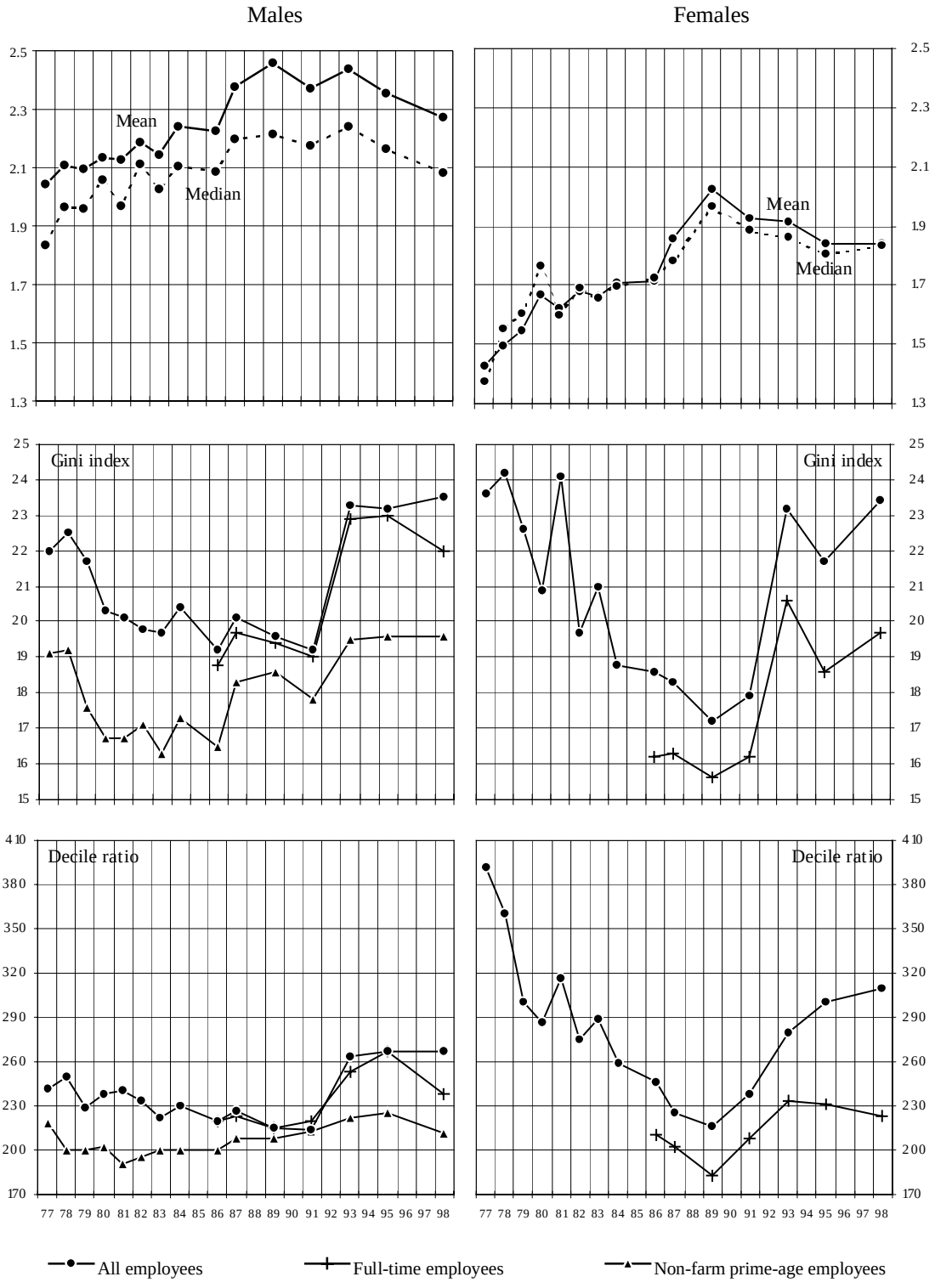

*Source*: authors' elaboration on data from SHIW-HA (Release 1.0).

With regard to geographical differences, at the end of 1970s mean real monthly earnings in the South were 15 per cent lower than in the North (Chart 3). This difference shrank in the 1980s, especially in the second half, and in 1989 the gap was virtually closed. In the following decade the geographical differential widened again. Between 1989 and 1998 mean real earnings fell by 5.8 per cent in the North and by 16.3 per cent in the South so that at the end of the period the average southern wage was 13 per cent lower than the average northern wage.[10] The narrowing of the gap in the 1980s mainly reflected substantial improvements in the bottom half of the southern wage distribution, which were completely undone in the 1990s; conversely, the top southern deciles gained nothing relative to the national median in the first sub-period but did better their positions in the following decade (Chart 4). Measures of income inequality display the same basic behaviour in both areas of the country, although variations are larger in the South, partly as a consequence of the smaller sample size (Chart 6). Earnings dispersion tended to be less in the North than in the South at the beginning and at the end of the period but greater in 1987, 1989 and 1991, when it was at its lowest in the country as a whole.

[10] The changes in geographical differential for net monthly earnings per job position in the SHIW are much more marked than for gross earnings per full-time equivalent employee in national accounts. The latter show small fluctuations around a flat trend. The discrepancy may be partly explained by the different definitions of earnings, and in particular by their being *net* of personal income taxes and employees' social security contributions in the SHIW but *gross* in national accounts. However, most of the discrepancy is likely to arise from the intrinsic differences between the two sources. On the one hand, the SHIW figures are liable to erratic movements induced by small sample size. On the other hand, the method used in the national accounts to impute mean values to employed standard labour units may tend to smooth out earnings variability, leading to more stable dynamics. Data drawn from INPS (2001), which refer to pre-tax earnings in the non-farm private sector, show North-South differentials similar both in levels and in their widening tendency over the period 1991-97 to those found in the SHIW.

Chart 5

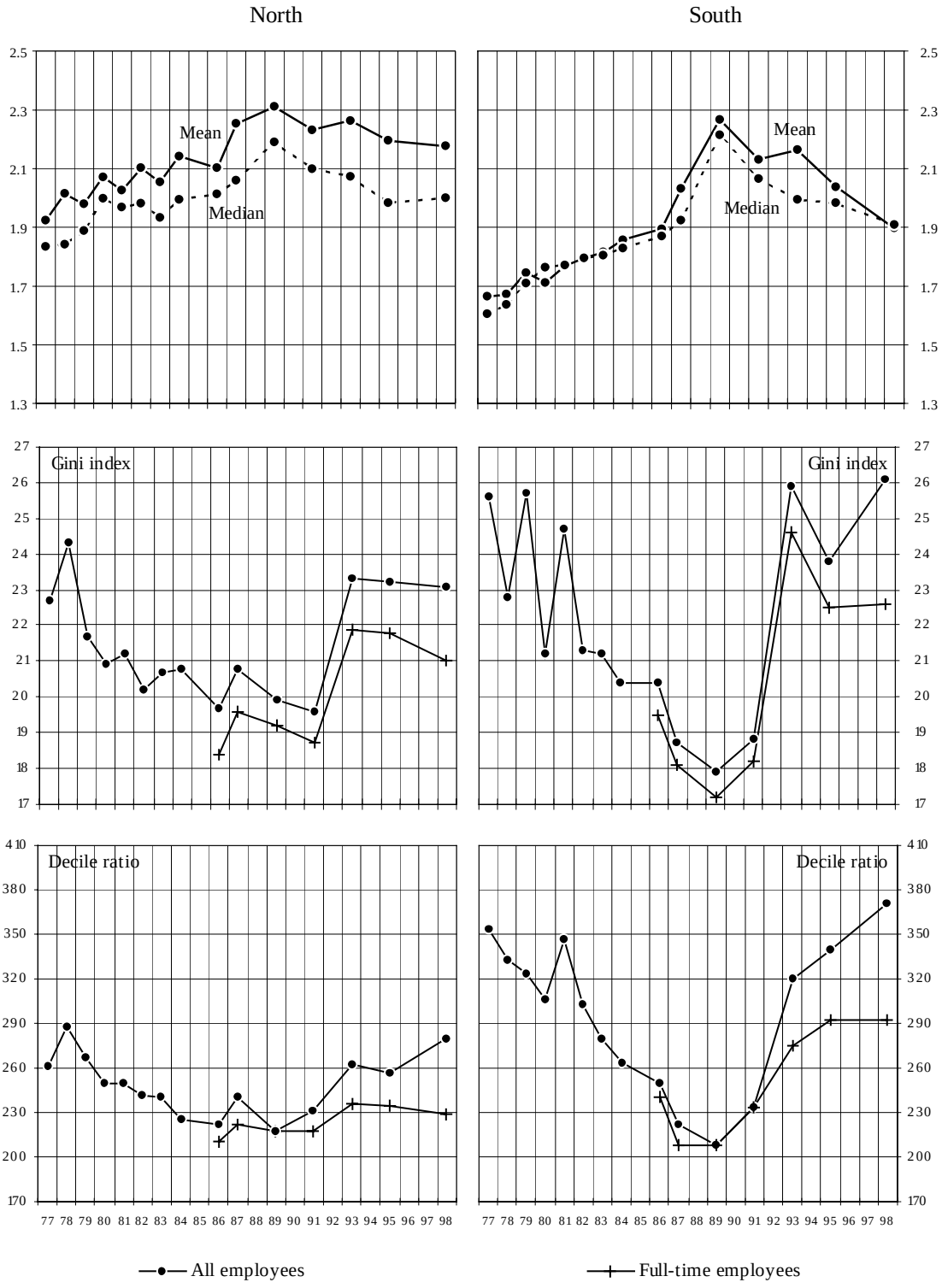
**DISTRIBUTION OF REAL MONTHLY NET EARNINGS BY SEX, 1977-1998**
(million lire at 1998 prices and per cent)




*Source*: authors' elaboration on data from SHIW-HA (Release 1.0).

Chart 6

**DISTRIBUTION OF REAL MONTHLY NET EARNINGS BY REGION, 1977-1998**
(million lire at 1998 prices and per cent)




*Source*: authors' elaboration on data from SHIW-HA (Release 1.0).

### *3.3 Summing up*

To sum up, the SHIW evidence suggests a definite temporal pattern for overall wage inequality in Italy. The distribution of net earnings narrowed from the late 1970s until the end of the 1980s, and especially in the first part of the period; it abruptly widened in the early 1990s and underwent little modification in the rest of the decade. The intensity of changes and year-to-year variations may differ, but this pattern broadly describes the evolution of earnings inequality in the main sub-groups of the population: full-time employees, both male and female salaried workers, both residents in the North and in the South. However, this picture must be rectified for prime-age non-agricultural male workers employed throughout the whole year, for whom the tendency towards greater inequality had already emerged in the mid-1980s and manifested itself in a less extreme form. This asymmetry between core employment and the full sample indicates that the relevant changes were concentrated among workers at the margins of the labour market.

The long phase of diminishing earnings inequality that ended in the 1980s is largely confirmed by the other scattered evidence available, including the information on wage differentials provided in national accounts (see Sestito, 1992; Erickson and Ichino, 1995; Brandolini, 2000b). There is also a fairly general consensus that this phase dates back to the late 1960s and early 1970s, the post-war period in which industrial conflict was at its highest. In those years, bargaining power shifted sharply in favour of workers and their strongly egalitarian demands, such as equal (lump-sum) pay raises for all workers regardless of grade (e.g. Regalia, Regini and Reyneri, 1978; Erickson and Ichino, 1995). Later on, these demands translated into the 1975 reform of the wage indexation mechanism, which granted a flat-sum wage increase for each percentage point rise in the cost-of-living index. Until early 1980s, the operation of this mechanism in the presence of double-digit inflation rates imparted a strong egalitarian push to the evolution of the earnings structure, which was only partially compensated by decentralised bargaining. On the basis of evidence up to 1991, Erickson and Ichino (1995, p. 298) concluded that “the overall picture of Italy … is of a country with a compressed wage structure that is not yet undergoing the rapid decompression experienced elsewhere during the 1980s”.

The severe political and economic crisis of the early 1990s saw the number of resident employees, as measured in the national accounts, plummet by 670,000, or 4.0 per cent, in the fourth quarter of 1993 from the historical peak recorded in the second quarter of 1992. As is shown above, this drop in employment was accompanied by a substantial widening of wage spreads. In the rest of the 1990s, inequality did not revert to the low levels of the previous decade and, if anything, it showed a tendency to increase further.

The economic crisis as well as concomitant institutional changes may have unleashed a decompression of the wage structure, originating in factors already at work in other advanced countries. Manacorda (2000), for instance, argues that a tendency comparable in amplitude to that experienced in the United States was latent since the early 1980s but failed to emerge because of the egalitarian wage indexation mechanism. Descriptive evidence hinting at a weakening of egalitarian demands during the 1980s is summarised by Regalia and Regini (1996, pp. 823-6), who report that, in the manufacturing sector, performance-related premia and individual bonuses gradually spread, with the support of unions, through bargaining agreements at company level. After 1994, the phasing-out of contribution relief for southern firms could partly account for the return to wider geographical differentials: some firms may have been able to transfer part of the higher labour cost burden[11] onto the most vulnerable workers, reducing their net earnings. A further factor in the 1990s may have been the spread of part-time and fixed-term employment contracts. In any case, our evidence suggests that changes in the wage structure mostly affected marginal employees, or those at the bottom of the wage scale.

## 4. Low-paid employment

After documenting changes in the entire distribution of net earnings, we now turn our attention to its lower tail, and more precisely to low-paid workers, i.e. those "... workers who earn less than two thirds of median earnings for all full-time workers"

[11] According to the regional accounts (Istat, 2001a), the difference in the implicit payroll tax rates – computed as the ratio of employers' social security contributions to gross wages and salaries – narrowed from 9 to 6.6 percentage points between 1995 and 1998.

(OECD, 1996, p. 69). As was seen in section 2, part-time contracts were not separately regulated by law until 1984 and no information was gathered in the SHIW; their diffusion was, however, almost negligible. We have therefore chosen to set the low-pay cut-off by reference to the overall distribution until 1984 and to the distribution for full-time jobs only from 1986 onwards. That the medians of the two distributions coincide in 1986, 1987 and 1989 provides some support for this choice.

Before looking at the data on low-paid workers, a short digression on institutional arrangements is in order. In Italy there is no compulsory minimum wage, but "minima" are fixed in the national contracts signed by unions and employers' associations. Despite relatively strong centralisation and co-ordination of bargaining, a national contract is binding only for a firm which is member of an employers' association signing the contract. No formal rule prevents an independent firm from paying wages lower than the contractual ones. On the other hand, several forces operate to extend the actual coverage of national minima: (1) courts tend to use them as a yardstick, providing an incentive for dissatisfied employees to call for the court's intervention and for unions to support such claims; (2) financial subsidies to firms are often made conditional on complying with contractual rates; (3) employers' social security contributions are computed on the greater between the actual earnings and the contractual minimum. In so far as it acts as a minimum wage, the national contract would imply a much higher floor, relative to the average or median wage, than that usually fixed by law or by wage councils where a mandatory system applies. To some degree this may adversely affect the level of employment, although the large size of the Italian underground economy testifies to the extent to which contractual minima are not applied.[12]

The evolution of the share of low-paid jobs parallels that of earnings inequality and, with opposite sign, that of the ratio of the bottom decile to the median (Chart 7; Table 6). As was seen above, the gains at the bottom of the distribution for all job positions were rather substantial in the 1980s, and the incidence of low-paid workers

[12] According to the old system of the national accounts (ESA 1979), from 1980 to 1997 the share of non-regular salaried employment went up, along with a widening of the earnings gap relative to regular employment. Notwithstanding the substantial downward revision caused by the adoption of the new system (ESA 1995), the proportion of non-regular employees increased from below 15 per cent in 1992 to 16.5 per cent in 1999 (Istat, 2001b).

halved from 16.9 per cent in 1977 to a minimum of 8.1 per cent in 1989. The proportion rose to 15.7 in 1993, and after a fall in 1995, reached a peak 18.3 per cent in 1998. The incidence of low-paid employment is less among full-time workers but tends to move as in the full sample until mid-1990s. But the rise in low-paid jobs between 1993 and 1998 is fully accounted for by the spread of part-time work, as the incidence among full-time workers remains around 12 per cent. Among prime-age male non-farm workers employed year-round, the proportion of low-paid jobs remained fairly stable around 2 per cent until 1995; it rose to 4 per cent in 1998.

Chart 7

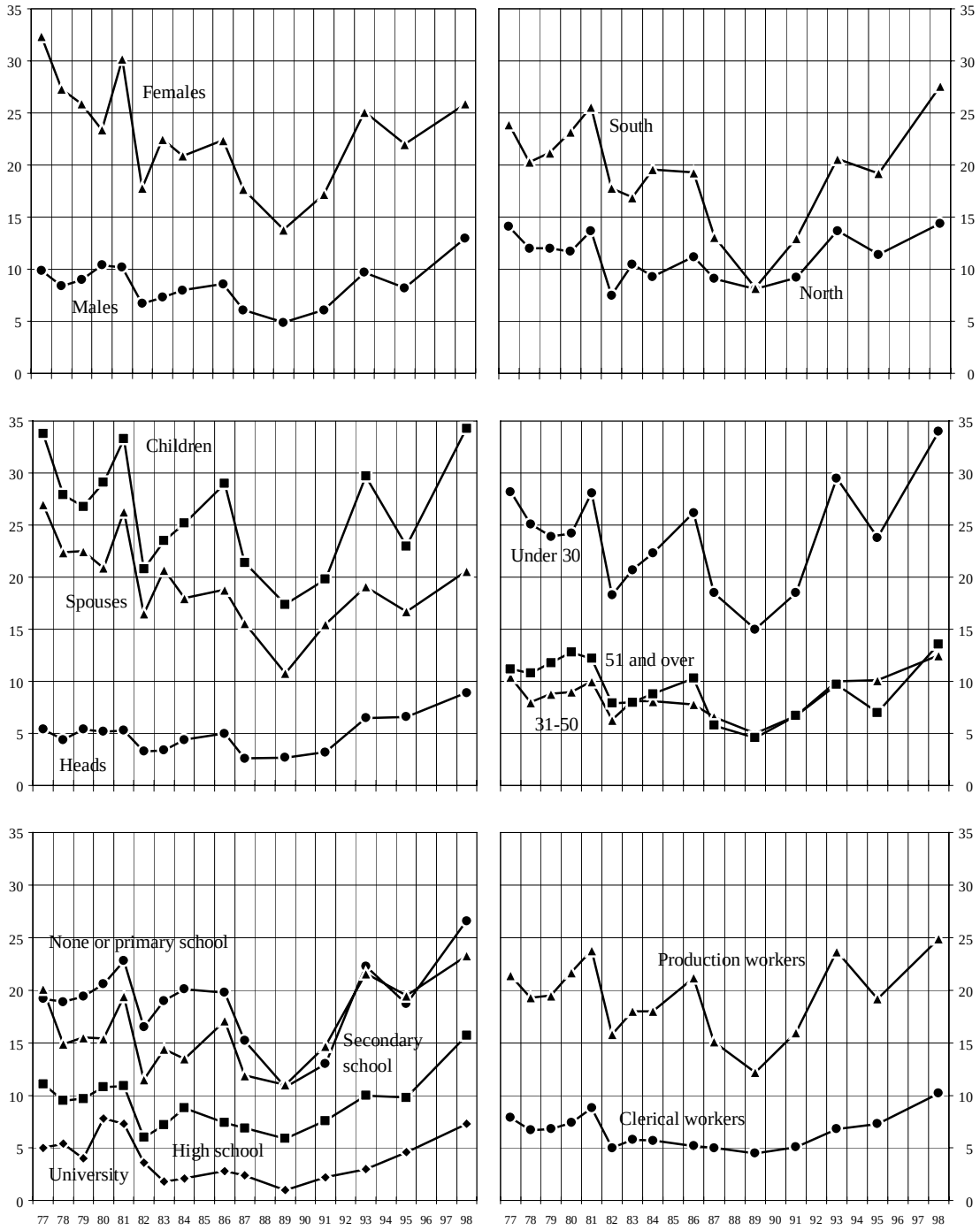
**SHARE OF LOW-PAID WORKERS, 1977-1998**
(percentage values)


*Source*: authors' elaboration on data from SHIW-HA (Release 1.0).

The time profile for the share of low-paid jobs is common across socio-demographic groups: for all groups, it declines more or less regularly up to 1989 and rises in the 1990s, with the exception of 1995 (Chart 8; Table 6). While time patterns

Chart 8

**SHARE OF LOW-PAID WORKERS BY PERSONAL CHARACTERISTICS, 1977-1998**
(percentage values)




*Source*: authors' elaboration on data from SHIW-HA (Release 1.0).

**INCIDENCE OF LOW-PAID EMPLOYEES, 1977-1998**
(per cent)

| Personal characteristic | All job positions | | | | | | | | | | | | | | | Full-time job positions | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1986 | 1987 | 1989 | 1991 | 1993 | 1995 | 1998 | 1986 | 1987 | 1989 | 1991 | 1993 | 1995 | 1998 |
| Sex | | | | | | | | | | | | | | | | | | | | | | |
| male | 9.9 | 8.4 | 9.0 | 10.4 | 10.2 | 6.7 | 7.3 | 8.0 | 8.6 | 6.1 | 4.9 | 6.1 | 9.7 | 8.2 | 13.0 | 7.6 | 5.3 | 4.5 | 5.5 | 8.8 | 7.5 | 9.8 |
| female | 32.4 | 27.3 | 25.9 | 23.4 | 30.2 | 17.8 | 22.5 | 20.9 | 22.4 | 17.7 | 13.8 | 17.2 | 25.1 | 22.0 | 25.9 | 16.1 | 12.0 | 10.0 | 12.4 | 17.3 | 13.5 | 16.1 |
| Household position (a) | | | | | | | | | | | | | | | | | | | | | | |
| head | 5.4 | 4.4 | 5.4 | 5.2 | 5.3 | 3.3 | 3.4 | 4.4 | 5.0 | 2.6 | 2.7 | 3.2 | 6.5 | 6.6 | 8.9 | 3.8 | 1.8 | 2.0 | 2.7 | 4.7 | 4.6 | 5.9 |
| spouse | 27.0 | 22.4 | 22.5 | 20.9 | 26.3 | 16.5 | 20.7 | 18.0 | 18.8 | 15.6 | 10.8 | 15.5 | 19.1 | 16.7 | 20.6 | 11.5 | 9.9 | 7.3 | 10.1 | 11.8 | 8.3 | 10.0 |
| child | 33.8 | 27.9 | 26.8 | 29.1 | 33.3 | 20.8 | 23.5 | 25.2 | 29.0 | 21.4 | 17.4 | 19.8 | 29.7 | 23.0 | 34.3 | 26.5 | 18.4 | 15.6 | 16.8 | 26.3 | 19.9 | 27.9 |
| Age | | | | | | | | | | | | | | | | | | | | | | |
| under 30 | 28.2 | 25.1 | 23.9 | 24.2 | 28.1 | 18.3 | 20.7 | 22.3 | 26.2 | 18.5 | 15.0 | 18.5 | 29.5 | 23.8 | 34.0 | 23.3 | 15.6 | 13.1 | 15.3 | 25.7 | 19.7 | 26.2 |
| 31-50 | 10.4 | 8.0 | 8.8 | 9.0 | 10.0 | 6.3 | 8.1 | 8.1 | 7.8 | 6.6 | 5.0 | 6.7 | 10.0 | 10.1 | 12.5 | 4.9 | 4.0 | 3.4 | 4.7 | 6.1 | 6.0 | 7.0 |
| 51 and over | 11.2 | 10.8 | 11.8 | 12.8 | 12.2 | 7.9 | 8.0 | 8.8 | 10.3 | 5.8 | 4.6 | 6.7 | 9.7 | 7.0 | 13.6 | 7.1 | 3.8 | 3.2 | 4.9 | 6.9 | 4.0 | 9.6 |
| Education | | | | | | | | | | | | | | | | | | | | | | |
| none or primary | 19.2 | 18.9 | 19.4 | 20.6 | 22.8 | 16.5 | 19.0 | 20.1 | 19.8 | 15.2 | 10.8 | 13.0 | 22.3 | 18.7 | 26.6 | 14.6 | 11.1 | 7.9 | 9.7 | 17.0 | 12.8 | 19.0 |
| secondary | 20.1 | 14.9 | 15.5 | 15.4 | 19.4 | 11.5 | 14.4 | 13.5 | 17.1 | 11.9 | 11.0 | 14.7 | 21.6 | 19.5 | 23.3 | 14.4 | 9.6 | 9.6 | 12.1 | 17.9 | 15.1 | 15.8 |
| high school | 11.1 | 9.5 | 9.7 | 10.8 | 10.9 | 6.0 | 7.2 | 8.8 | 7.4 | 6.9 | 5.9 | 7.6 | 10.0 | 9.8 | 15.7 | 5.5 | 4.6 | 4.3 | 5.4 | 6.4 | 6.1 | 10.3 |
| university | 5.0 | 5.4 | 4.0 | 7.8 | 7.3 | 3.6 | 1.8 | 2.1 | 2.8 | 2.4 | 1.0 | 2.2 | 3.0 | 4.6 | 7.3 | 1.6 | 1.1 | 0.4 | 1.8 | 1.3 | 4.2 | 4.7 |
| Geographical area | | | | | | | | | | | | | | | | | | | | | | |
| North | 14.1 | 12.0 | 12.0 | 11.7 | 13.7 | 7.5 | 10.5 | 9.3 | 11.2 | 9.1 | 8.1 | 9.2 | 13.7 | 11.4 | 14.4 | 8.0 | 5.8 | 6.2 | 6.7 | 9.4 | 7.0 | 8.6 |
| South | 23.9 | 20.3 | 21.2 | 23.2 | 25.6 | 17.8 | 16.9 | 19.6 | 19.3 | 13.1 | 8.2 | 13.0 | 20.6 | 19.2 | 27.6 | 16.7 | 12.0 | 7.0 | 11.2 | 18.1 | 16.3 | 20.9 |
| Economic branch | | | | | | | | | | | | | | | | | | | | | | |
| agriculture and fishery | 29.7 | 33.2 | 32.6 | 33.3 | 47.3 | 32.6 | 32.1 | 40.4 | 38.4 | 18.6 | 17.3 | 23.2 | 49.3 | 26.2 | 45.1 | 38.3 | 17.4 | 17.7 | 22.5 | 44.8 | 25.2 | 39.7 |
| industry | 14.4 | 12.9 | 13.7 | 13.8 | 18.5 | 10.7 | 10.3 | 8.8 | 11.4 | 9.9 | 9.0 | 10.8 | 14.7 | 12.3 | 16.6 | 9.8 | 8.6 | 7.5 | 9.5 | 12.9 | 10.5 | 13.4 |
| trade and lodging | 31.8 | 20.7 | 25.4 | 25.0 | 30.4 | 18.2 | 24.4 | 23.5 | 26.6 | 19.9 | 12.8 | 13.7 | 29.1 | 25.0 | 24.9 | 21.8 | 14.4 | 10.1 | 9.1 | 22.4 | 16.8 | 14.6 |
| transport and credit | 3.8 | 4.6 | 3.1 | 4.7 | 2.4 | 2.7 | 4.4 | 1.5 | 1.9 | 2.1 | 2.6 | 5.6 | 5.3 | 4.4 | 12.0 | 1.6 | 1.5 | 1.6 | 4.3 | 2.3 | 1.7 | 8.8 |
| other services | 19.0 | 14.5 | 13.4 | 13.8 | 12.6 | 7.4 | 9.9 | 11.9 | 12.5 | 8.4 | 6.5 | 8.7 | 12.4 | 12.8 | 16.1 | 7.8 | 4.8 | 4.5 | 5.6 | 7.9 | 7.8 | 8.5 |
| Job status (b) | | | | | | | | | | | | | | | | | | | | | | |
| production workers | 21.4 | 19.3 | 19.5 | 21.7 | 23.8 | 15.8 | 18.0 | 18.0 | 21.2 | 15.1 | 12.2 | 16.0 | 23.7 | 19.2 | 24.9 | 17.1 | 11.7 | 10.4 | 13.0 | 19.6 | 14.7 | 18.1 |
| clerical workers | 7.9 | 6.7 | 6.8 | 7.4 | 8.8 | 5.0 | 5.8 | 5.7 | 5.2 | 5.0 | 4.5 | 5.1 | 6.8 | 7.3 | 10.2 | 3.5 | 3.2 | 2.9 | 3.4 | 3.9 | 4.1 | 6.4 |
| Job length | | | | | | | | | | | | | | | | | | | | | | |
| all year | 13.8 | 9.8 | 10.3 | 10.3 | 13.0 | 7.4 | 9.2 | 7.7 | 9.8 | 7.1 | 7.3 | 8.2 | 11.3 | 10.9 | 13.2 | 7.9 | 5.0 | 5.8 | 6.1 | 8.5 | 7.2 | 9.1 |
| part year | 39.6 | 40.7 | 41.9 | 44.7 | 41.3 | 29.2 | 34.6 | 42.3 | 32.8 | 31.1 | 18.7 | 32.7 | 40.2 | 29.2 | 50.3 | 26.1 | 27.9 | 16.6 | 30.3 | 34.0 | 25.5 | 37.7 |
| Prime workers (c) | 3.0 | 0.9 | 2.4 | 2.2 | 2.0 | 1.7 | 2.0 | 1.6 | 1.5 | 1.4 | 1.7 | 1.7 | 2.0 | 2.4 | 4.1 | 1.3 | 0.7 | 1.6 | 1.5 | 1.8 | 2.1 | 3.3 |
| All employees | 16.9 | 14.4 | 14.6 | 15.0 | 17.1 | 10.5 | 12.4 | 12.5 | 13.5 | 10.2 | 8.1 | 10.3 | 15.7 | 13.7 | 18.3 | 10.5 | 7.5 | 6.4 | 7.9 | 11.9 | 9.7 | 12.2 |

*Source*: authors' elaboration on data from SHIW-HA (Release 1.0). (a) Figures for "other members" were not reported because of their small share in population. (b) Figures for "managerial workers" were not reported because of their small share in population. (c) Non-farm prime-age male workers employed year-round.

are homogenous, levels differ greatly across groups. Women's probability of being low-paid is three times that of men; only in the 1990s did this difference narrow slightly. By contrast, the share of low-paid workers in the South in 1998 was twice as large as in the North; in that year the regional gap reached a record value, reversing the convergence that had characterised the 1980s. Spouses and children, mainly those younger than 30, are the groups most commonly affected by low pay. The relative position of the children of household heads deteriorated dramatically in 1998, when one in three of those employed had a low-paid job. Poorly educated and manual workers suffer a greater risk of being low-paid than persons with a university degree or employed in clerical positions. However, higher education has been losing the ability to shelter people from the risk of being low-paid: compared with 1977, the risk was greater in 1998 for all workers, regardless of their level of education.

In spite of the recent increase, in the mid-1990s the average incidence of low-paid employment (for full-time jobs) was relatively low by international standards: it was much lower than in the Anglo-Saxon countries and Japan, more or less in line with the countries of continental Europe, and greater only than in the traditionally more equal countries, such as Belgium, Finland and Sweden (OECD, 1996; Keese, Puymoyen and Swaim, 1998). Also the composition of the low-paid employment according to several socio-demographic characteristics quite closely resembles the pattern in other countries.

## 5. Low pay and poverty

In this final section, we examine the relationship between low pay and poverty. As is standard practice, we set the poverty line at half the median of household equivalent income. To check whether the results depend on the choice of the poverty line, we also consider two alternative thresholds set at 40 and 60 per cent of the median. The household's income is the sum of all after-tax incomes received by the members, including the imputed rent on owner-occupied dwellings but excluding interest and dividends, for they are recorded in the SHIW only after 1987. The equivalence scale used to deflate income is that utilised in official poverty statistics in Italy (see Inquiry Commission on Poverty, 1997, pp. 37-9).

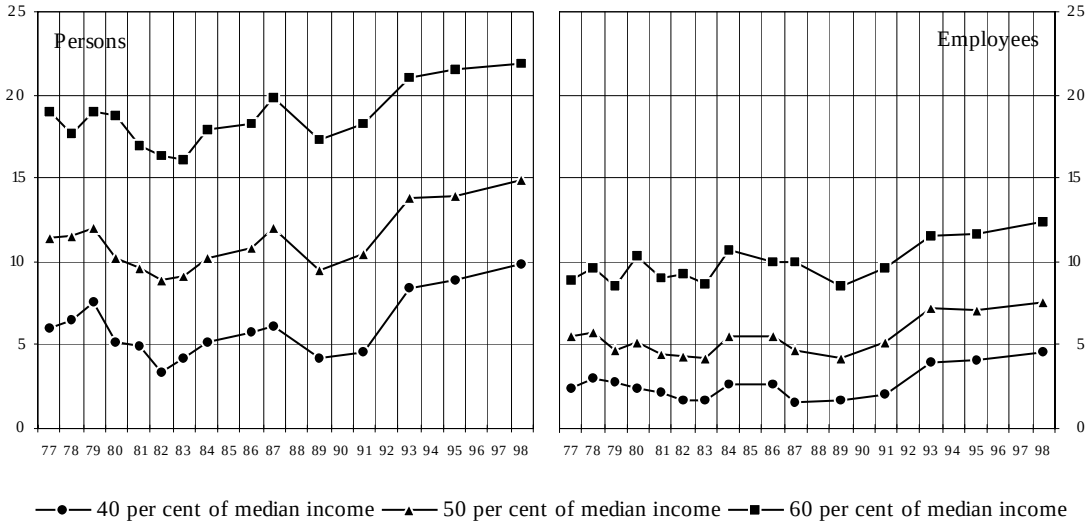
The dynamics of poverty are shown in the left-hand panel of Chart 9. Between 1977 and 1991, the proportion of persons in poor households ranged from 9 to 12 per cent,

oscillating around a flat trend; it jumped to 14 per cent in 1993 and 1995, and to 15 per cent in 1998. The time pattern remains virtually the same, albeit on different levels, when the poverty line is set at either 40 or 60 per cent of the median. The ratio for employees is about half that of total population, being around 5 per cent until 1991 and over 7 per cent in the remaining of the 1990s (Chart 9, right-hand panel).

Chart 9

**HEADCOUNT POVERTY RATIOS AMONG PERSONS AND EMPLOYEES BY DIFFERENT POVERTY LINES, 1977-1998**

(percentage values of persons or employees in poor households)




*Source*: authors' elaboration on data from SHIW-HA (Release 1.0). Income is defined as equivalent households' after-tax incomes, including imputed rental income from owner-occupied dwellings, but excluding net interest and dividends. The equivalence scale is that of the official Italian poverty commission (see Inquiry Commission on Poverty, 1997, pp. 37-9).

The link between household poverty and low pay is summarised in Table 7. In 1998, 3.7 per cent of all primary jobs were low-paid and held by an employee living in a household with equivalent income below the poverty line: the odds of being low-paid were 1 in 2 for poor employees against 1 in 6 for non-poor employees. On the other hand, having a low-paid job was not necessarily an indicator of poverty, as 4 of 5 low-paid workers lived in non-poor households. The main reason is that wages and salaries are not the only source of income. On average, in 1998 they made up 34 per cent of total disposable income as defined here, while income from self-employment accounted for 17 per cent, pensions and other transfers

for 30 per cent, and returns on real assets, including the imputed rent on owner-occupied dwellings, for the remaining 19 per cent. Moreover, as is shown in Table 6, low pay is predominantly a feature of supplementary earners, whose incomes tend to complement those of the primary earner, without altering the household's income status. The figures in Table 8 confirm these observations for the entire period: being low-paid is much more likely for poor employees, but the large majority of low-paid jobs are found in non-poor households. Table 8 also reports the Pearson $\chi^2$ independence test, which shows that the null hypothesis of no association between low pay and poverty is strongly rejected in all years.

Table 7

**LOW-PAID PRIMARY JOBS AND POVERTY, 1998**

| | Numbers in thousands | | | Percentage shares of total | | |
|---|---|---|---|---|---|---|
| | Low-paid | Non-low-paid | All | Low-paid | Non-low-paid | All |
| Poor | 549 | 592 | 1,141 | 3.7 | 3.9 | 7.6 |
| Non-poor | 2,189 | 11,695 | 13,884 | 14.6 | 77.8 | 92.4 |
| All | 2,738 | 12,287 | 15,025 | 18.3 | 81.7 | 100.0 |

*Source*: authors' elaboration on data from SHIW-HA (Release 1.0). An employee is considered poor when he/she lives in a household whose income is below 50 per cent of the median income. Income is defined as equivalent households' after-tax incomes, including imputed rental income from owner-occupied dwellings, but excluding net interest and dividends. The equivalence scale is the one utilised to compute official poverty statistics in Italy (see Inquiry Commission on Poverty, 1997, pp. 37-9).

Low pay is only one dimension of the link between household poverty and the labour market, the other important dimension being the household's "employment rate", i.e. the amount of work performed by its members. The interesting question is which characteristic – "employment rate" or "low-paid status" – is more closely correlated with poverty. We have defined two further labour market indicators: the total number of months worked and the number of months worked in self-employment, both expressed as ratios to the maximum number of months that a person can work (12 in general, 3 for students). We have also distinguished, for all variables, between the head and other adult members (i.e. aged between 18 and 65) pooled together (their low-paid status is the average of individual dummies). The Pearson $\chi^2$ test of independence shows that all these variables, when considered separately, are closely correlated with poverty status.

Table 8

**LOW-PAID PRIMARY JOBS AND POVERTY, 1977-1998**
(percentage values)

| Year | Incidence of low-paid jobs | | Distribution of low-paid jobs | | | Pearson $\chi^2$ independence test (b) |
|---|---|---|---|---|---|---|
| | Poor employees (a) | Non-poor employees | Poor employees (a) | Non-poor employees | Total | |
| 1977 | 40.8 | 15.4 | 13.4 | 86.6 | 100.0 | 62.7 |
| 1978 | 45.6 | 12.5 | 18.2 | 81.8 | 100.0 | 151.8 |
| 1979 | 44.0 | 13.2 | 14.1 | 85.9 | 100.0 | 104.7 |
| 1980 | 48.6 | 13.1 | 16.9 | 83.1 | 100.0 | 139.5 |
| 1981 | 49.1 | 15.6 | 12.7 | 87.3 | 100.0 | 127.4 |
| 1982 | 31.7 | 9.6 | 13.1 | 86.9 | 100.0 | 211.1 |
| 1983 | 34.8 | 11.4 | 11.8 | 88.2 | 100.0 | 143.6 |
| 1984 | 39.3 | 10.9 | 17.5 | 82.5 | 100.0 | 183.6 |
| 1986 | 32.8 | 12.4 | 13.4 | 86.6 | 100.0 | 194.6 |
| 1987 | 19.5 | 9.7 | 9.1 | 90.9 | 100.0 | 328.2 |
| 1989 | 14.7 | 7.8 | 7.5 | 92.5 | 100.0 | 491.7 |
| 1991 | 21.6 | 9.6 | 11.0 | 89.0 | 100.0 | 331.8 |
| 1993 | 47.4 | 13.2 | 21.8 | 78.2 | 100.0 | 369.3 |
| 1995 | 41.5 | 11.5 | 21.7 | 78.3 | 100.0 | 344.7 |
| 1998 | 48.1 | 15.8 | 20.0 | 80.0 | 100.0 | 286.6 |

*Source*: authors' elaboration on data from SHIW-HA (Release 1.0). (a) An employee is considered poor when he/she lives in a household whose income is below 50 per cent of the median income. Income is defined as equivalent households' after-tax incomes, including imputed rental income from owner-occupied dwellings, but excluding net interest and dividends. The equivalence scale is the one utilised to compute official poverty statistics in Italy (see Inquiry Commission on Poverty, 1997, pp. 37-9). (b) Test of the null hypothesis that the classifications of low-paid jobs and poor employees are independent; since both classifications are binary, the test has 1 degree of freedom.

To compare the relative strength of the correlation, we have regressed household poverty against these labour market variables, after inserting a number of controls (a dummy taking value zero when the head is older than 65 and value 1 otherwise; the household's size; the number of children; a dummy for home owners; and the amount of pensions and other transfers received, both divided by the number of equivalent persons). The results are not to be interpreted as the parameters of a structural model – as the labour market indicators as well as most of the controls are endogenous variables that we are not trying to model – but

rather as multivariate correlation coefficients. Robustness checks make us fairly confident that the endogeneity bias should not substantially alter our conclusions.[13]

In Table 9 we report the results from estimating a probit model pooling together all years (year dummies not reported). The positive association between the probability of being poor and low wages is significant only for the household heads. More relevant is the number of months worked, especially when performed by household members other than the head, and in a salaried job. On the basis of the estimated coefficients, the head holding a low-paid job has roughly the same effect as working one month less as an employee. Results for control variables are in line with expectations. The household's size is positively associated with the risk of poverty, particularly when the additional members are minor children, whose marginal effect is twice as large as that of an adult. Home ownership and both types of transfers are negatively correlated with the probability of being poor. The modest effect of the other (non-pension) transfers confirms the poor targeting of the Italian welfare system.

Regressions conducted separately year-by-year allow us to qualify the picture (Table 10). In Chart 10 we plot the marginal effects (including a 4-standard-error symmetric band) estimated on a yearly basis for the four variables capturing labour market status: the employment rate and low-paid status, separately for household heads and other adult members. (We ignore the effects of the other covariates, which are reasonably stable over time.) The positive correlation between poverty and low-paid household head was statistically significant but quantitatively small in the late 1970s; it faded away in the following decade; it rose considerably between 1987 and 1993 and fell again by 1998, remaining four times higher than in 1977, however. While consistently significant over time, the marginal effect of the number of months worked by the head exhibited a rather similar, if opposite, pattern. Overall, both effects are now more substantial than they were at the beginning of our sample period. The changes are less dramatic for other adults: the coefficient of low-paid status is almost never statistically significant, while that of the

[13] We run several regressions, of the type shown below, excluding one variable at a time, and we examined the changes in the estimated coefficients of the remaining variables. If the endogeneity bias is strong, we would expect substantial changes because of the correlation between the excluded variable and the remaining regressors. Our tests show that only the coefficient of the low paid variable is substantially altered by the sequential omission of one of the regessors, while the other coefficients, in particular those for months worked, are virtually unaffected.

employment rate is consistently negative and significant. To sum up, the separate regressions confirm that the probability of being in poverty is more strongly associated with the amount of employment in the household, particularly of members other than the head, than with low pay. However, the low-paid status of the head has become more important in the last decade.

We looked for corroboration of the results discussed so far by considering two alternative poverty thresholds, and by looking at the deepness of poverty rather than the poverty risk. Re-estimating the probit models for poverty thresholds set at 40 and 60 per cent of the median equivalent income, we found that the absolute values of the marginal effects tend to be somewhat more pronounced, the higher the threshold, though their time patterns are very much unchanged (Chart 11). Secondly, regressing the "poverty gap" of poor households (i.e. the percentage shortfall of their income from the poverty line, set here at half the median) on the same set of explanatory variables shows a high correlation with the employment rate, although now the effect is stronger for the household head (Table 9, last two columns).[14] The difference between the two models is more evident in the year-by-year regressions: in the poverty risk model, the months worked by other members are more important than those worked by the head in most of the period, but not in the 1990s (Chart 10); in the poverty gap model, they have similar effects, but the coefficient of the former is poorly estimated and becomes significant only in the 1990s (Chart 12). Conversely, the poverty gap exhibits a weak correlation with the low-paid status of either the head or any other member.

Few other differences are notable. First, the number of children is positively associated with the household's probability of being in poverty, but is uncorrelated with the poverty gap. Second, household size is correlated negatively with the poverty gap and positively with the probability of being poor. Third, the income shortfall is strongly and negatively correlated with the size of both forms of transfer.

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[14] The importance of the employment status of the head in determining the household's total income was stressed by Rettore and Rizzi (1996) in a framework substantially different from ours. They found that spells of unemployment for members other than the head do not significantly affect the household's income, whereas those of the head can lead to a fall as large as 60 per cent.

Table 9

**PROBABILITY OF BEING IN POVERTY AND POVERTY GAP, POOLED MODEL, 1977-1998**

| | Probability of being in poverty | | | | Poverty gap | |
|---|---|---|---|---|---|---|
| | Coeffi-cient | Standard errors | Marginal effect (a) | Standard errors | Coeffi-cient | Standard errors |
| Constant | -0.5652 | 0.0455 | - | - | 0.5722 | 0.0118 |
| Household head | | | | | | |
| Low-paid employee | 0.0661 | 0.0237 | 0.0065 | 0.0023 | 0.0039 | 0.0082 |
| Age 18-65 | -0.0673 | 0.0249 | -0.0912 | 0.0042 | 0.0052 | 0.0077 |
| Months worked | -0.7040 | 0.0258 | -0.0687 | 0.0026 | -0.2578 | 0.0096 |
| Months worked in self-employment | 0.2791 | 0.0307 | 0.0272 | 0.0030 | 0.0818 | 0.0109 |
| Other adult household members | | | | | | |
| Low-paid employee | 0.0555 | 0.0371 | 0.0054 | 0.0036 | 0.0070 | 0.0132 |
| Months worked | -1.6198 | 0.0686 | -0.1580 | 0.0060 | -0.2182 | 0.0273 |
| Months worked in self-employment | 0.7619 | 0.0725 | 0.0743 | 0.0069 | 0.1382 | 0.0290 |
| Number of members | 0.1315 | 0.0089 | 0.0128 | 0.0009 | -0.0066 | 0.0018 |
| Number of children | 0.1314 | 0.0058 | 0.0128 | 0.0006 | -0.0023 | 0.0026 |
| Home owner | -0.5913 | 0.0139 | -0.0704 | 0.00207 | -0.0677 | 0.0046 |
| Pension per equivalent person (1 million lire at 1998 price) | -0.1000 | 0.00023 | -0.0098 | 0.0002 | -0.0418 | 0.0012 |
| Other transfers per equivalent person (1 million lire at 1998 price) | -0.0126 | 0.0060 | -0.0012 | 0.0006 | -0.0291 | 0.0028 |
| Log likelihood | | -21,736 | | | | |
| Pseudo $R^2$ | | 0.2030 | | | 0.26 | |
| Number of observations | | 83,981 | | | 8,385 | |

*Source*: authors' elaboration on data from SHIW-HA (Release 1.0). (a) The marginal effect is the partial derivative of the probability with respect to the regressor, evaluated at the sample means.

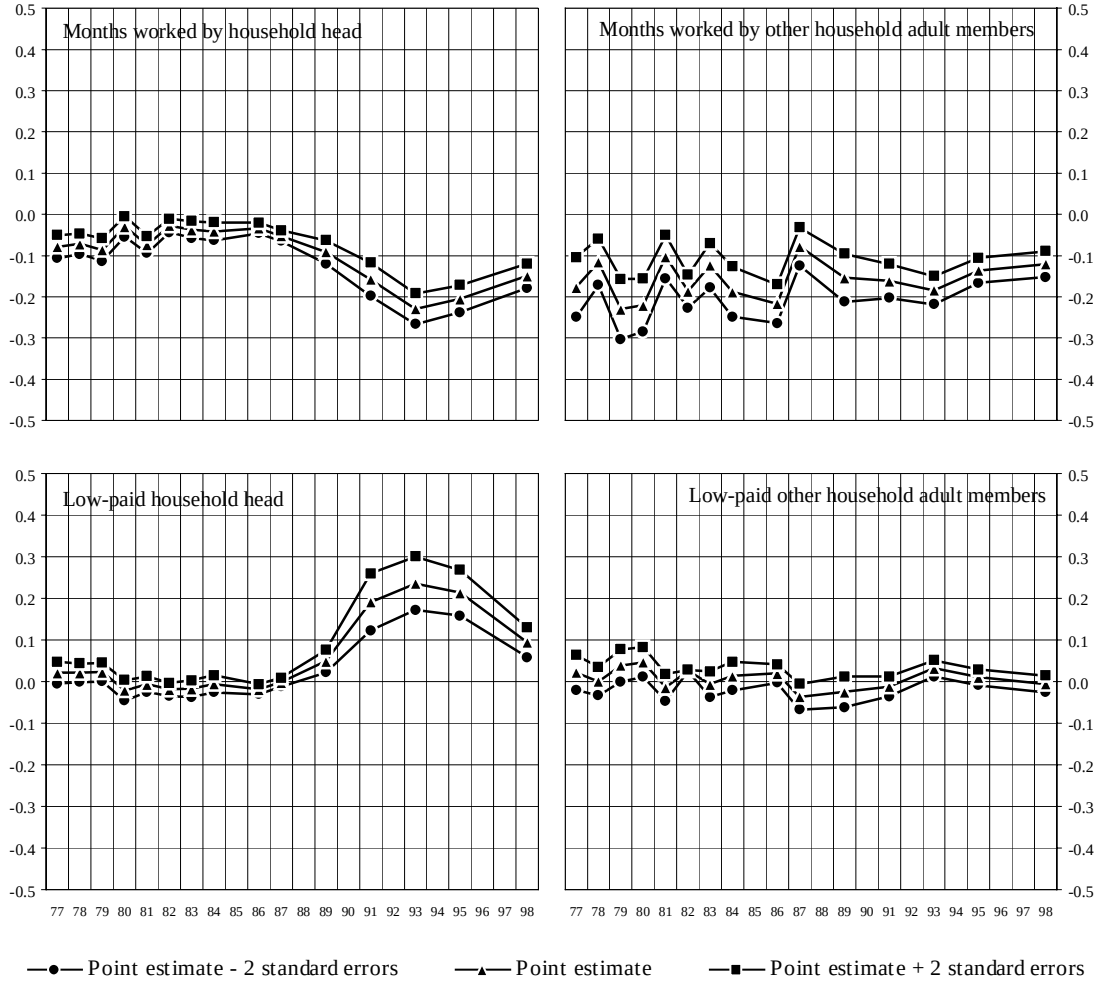
**PROBABILITY OF BEING IN POVERTY, SEPARATE REGRESSIONS BY YEAR, 1977-1998, MARGINAL EFFECTS**
(standard errors in italics)

| | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1986 | 1987 | 1989 | 1991 | 1993 | 1995 | 1998 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Household head | | | | | | | | | | | | | | | |
| Low-paid employee | 0.0217 | 0.0213 | 0.0232 | -0.0209 | -0.0060 | -0,0187 | -0.0169 | -0.0051 | -0.0183 | -0.0012 | 0.0492 | 0.1915 | 0.2364 | 0.2136 | 0.0944 |
| | *0.0131* | *0.112* | *0.0112* | *0.0123* | *0.0094* | *0.0079* | *0.0100* | *0.0101* | *0.0059* | *0.0053* | *0.0133* | *0.0343* | *0.0321* | *0.0275* | *0.0178* |
| Age 18-65 | -0.1838 | -0.1392 | -0.1289 | -0.1562 | -0.0769 | -0.0564 | -0.0882 | -0.0754 | -0.0974 | -0.0615 | -0.0451 | -0.0794 | -0.0550 | -0.0725 | -0.0879 |
| | *0.029* | *0.0270* | *0.0270* | *0.0276* | *0.0178* | *0.0167* | *0.0201* | *0.0196* | *0.0155* | *0.0132* | *0.0102* | *0.0124* | *0.0105* | *0.0109* | *0.0126* |
| Months worked | -0.0787 | -0.0715 | -0.0858 | -0.0295 | -0.0737 | -0.0273 | -0.0370 | -0.0411 | -0.0330 | -0.0518 | -0.0910 | -0.1576 | -0.2290 | -0.2049 | -0.1489 |
| | *0.0140* | *0.0125* | *0.0136* | *0.0126* | *0.0103* | *0.0081* | *0.0102* | *0.0108* | *0.0064* | *0.0065* | *0.0141* | *0.0202* | *0.0187* | *0.0165* | *0.0148* |
| Months worked | 0.0163 | 0.0312 | 0.0374 | 0.0104 | 0.0220 | -0.0161 | 0.0106 | -0.0118 | 0.0 | 0.0 | 0.0049 | 0.0032 | 0.0666 | 0.0598 | 0.0328 |
| in self-employment | *0.0234* | *0.0207* | *0.0187* | *0.0214* | *0.0169* | *0.0155* | *0.0164* | *0.0197* | *0.0* | *0.0* | *0.0057* | *0.0061* | *0.0079* | *0.0078* | *0.0072* |
| Other adult household members | | | | | | | | | | | | | | | |
| Low-paid employee | 0.0222 | 0.0009 | 0.0389 | 0.0472 | -0.0136 | 0.0266 | -0.0060 | 0.0135 | 0.0199 | -0.0363 | -0.0247 | -0.0112 | 0.0321 | 0.0106 | -0.0055 |
| | *0.0210* | *0.0171* | *0.0195* | *0.0178* | *0.0162* | *0.0010* | *0.0155* | *0.0170* | *0.0110* | *0.0153* | *0.0186* | *0.0119* | *0.0099* | *0.0094* | *0.0099* |
| Months worked | -0.1767 | -0.1154 | -0.2299 | -0.2202 | -0.1026 | -0.1866 | -0.1238 | -0.1876 | -0.2169 | -0.0780 | -0.1540 | -0.1614 | -0.1841 | -0.1359 | -0.1205 |
| | *0.0364* | *0.0282* | *0.0366* | *0.0321* | *0.0262* | *0.01989* | *0.0270* | *0.0304* | *0.0234* | *0.0232* | *0.0291* | *0.0205* | *0.0171* | *0.0150* | *0.0157* |
| Months worked | 0.0757 | -0.0589 | -0.0116 | -0.0195 | -0.0184 | 0.0168 | -0.0164 | 0.0560 | 0.0 | 0.0 | 0.0436 | 0.0974 | 0.0993 | 0.0628 | 0.0700 |
| in self-employment | *0.0519* | *0.0946* | *0.1085* | *0.0890* | *0.0653* | *0.0824* | *0.0848* | *0.0596* | *0.0* | *0.0* | *0.0301* | *0.0183* | *0.0147* | *0.0131* | *0.0138* |
| Number of members | 0.0092 | 0.0088 | 0.009 | 0.0038 | 0.0128 | 0.0040 | 0.0111 | 0.0082 | 0.0149 | 0.0181 | 0.0144 | 0.0166 | 0.0113 | 0.0135 | 0.0094 |
| | *0.0035* | *0.0033* | *0.0033* | *0.0031* | *0.0024* | *0.0018* | *0.0026* | *0.0028* | *0.0019* | *0.0019* | *0.0020* | *0.0020* | *0.0018* | *0.0018* | *0.0018* |
| Number of children | 0.0110 | 0.0197 | 0.0159 | 0.0149 | 0.0076 | 0.0082 | 0.0148 | 0.0203 | 0.0081 | 0.0113 | 0.0120 | 0.0088 | 0.0131 | 0.0085 | 0.0119 |
| | *0.0054* | *0.0050* | *0.0053* | *0.0050* | *0.0037* | *0.0031* | *0.0041* | *0.0044* | *0.0028* | *0.0027* | *0.0025* | *0.0022* | *0.0028* | *0.0026* | *0.0028* |
| Home owner | -0.0657 | -0.0427 | -0.0494 | -0.0331 | -0.0236 | -0.0177 | -0.0481 | -0.0410 | -0.0487 | -0.0574 | -0.0614 | -0.0671 | -0.1072 | -0.1294 | -0.1091 |
| | *0.0101* | *0.0089* | *0.0096* | *0.0090* | *0.0068* | *0.0058* | *0.0083* | *0.0090* | *0.0058* | *0.0061* | *0.0070* | *0.0077* | *0.0081* | *0.0090* | *0.0095* |
| Pension per equivalent person | -0.0142 | -0.0087 | -0.0010 | -0.0107 | -0.0087 | -0.0058 | -0.0075 | -0.0078 | -0.01 | -0.0063 | -0.0045 | -0.0052 | -0.0102 | -0.0105 | -0.0113 |
| (1 million lire at 1998 prices) | *0.0018* | *0.0015* | *0.0015* | *0.0014* | *0.0011* | *0.0011* | *0.0011* | *0.0011* | *0.0008* | *0.0006* | *0.0006* | *0.0006* | *0.0006* | *0.0006* | *0.0006* |
| Other transfers per equivalent person (1 million lire at 1998 prices) | -0.019 | 0.0187 | 0.0018 | 0.0047 | -0.0060 | -0.0033 | -0.0030 | -0.0043 | 0.0018 | 0.0012 | 0.0004 | 0.0018 | -0.0035 | -0.0043 | -0.0065 |
| | *0.0416* | *0.0188* | *0.0095* | *0.0061* | *0.0046* | *0.0037* | *0.0059* | *0.0056* | *0.0022* | *0.0016* | *0.0013* | *0.0009* | *0.0016* | *0.0017* | *0.0019* |
| Log likelihood | -814 | -771 | -806 | -794 | -992 | -886 | -973 | -1,102 | -2,136 | -1,906 | -1,986 | -1,935 | -2,067 | -2,024 | -1,838 |
| Pseudo $R^2$ | 0.15 | 0.14 | 0.15 | 0.15 | 0.17 | 0.16 | 0.14 | 0.13 | 0.17 | 0.19 | 0.21 | 0.28 | 0.30 | 0.32 | 0.31 |
| Number of observations | 2,915 | 3,044 | 2,886 | 2,980 | 4,091 | 3,967 | 4,107 | 4,172 | 8,022 | 8,027 | 8,260 | 8,188 | 8,089 | 8,093 | 7,140 |

*Source*: authors' elaboration on data from SHIW-HA (Release 1.0). The marginal effect is the partial derivative of the probability with respect to the regressor, evaluated at the sample means.

Chart 10

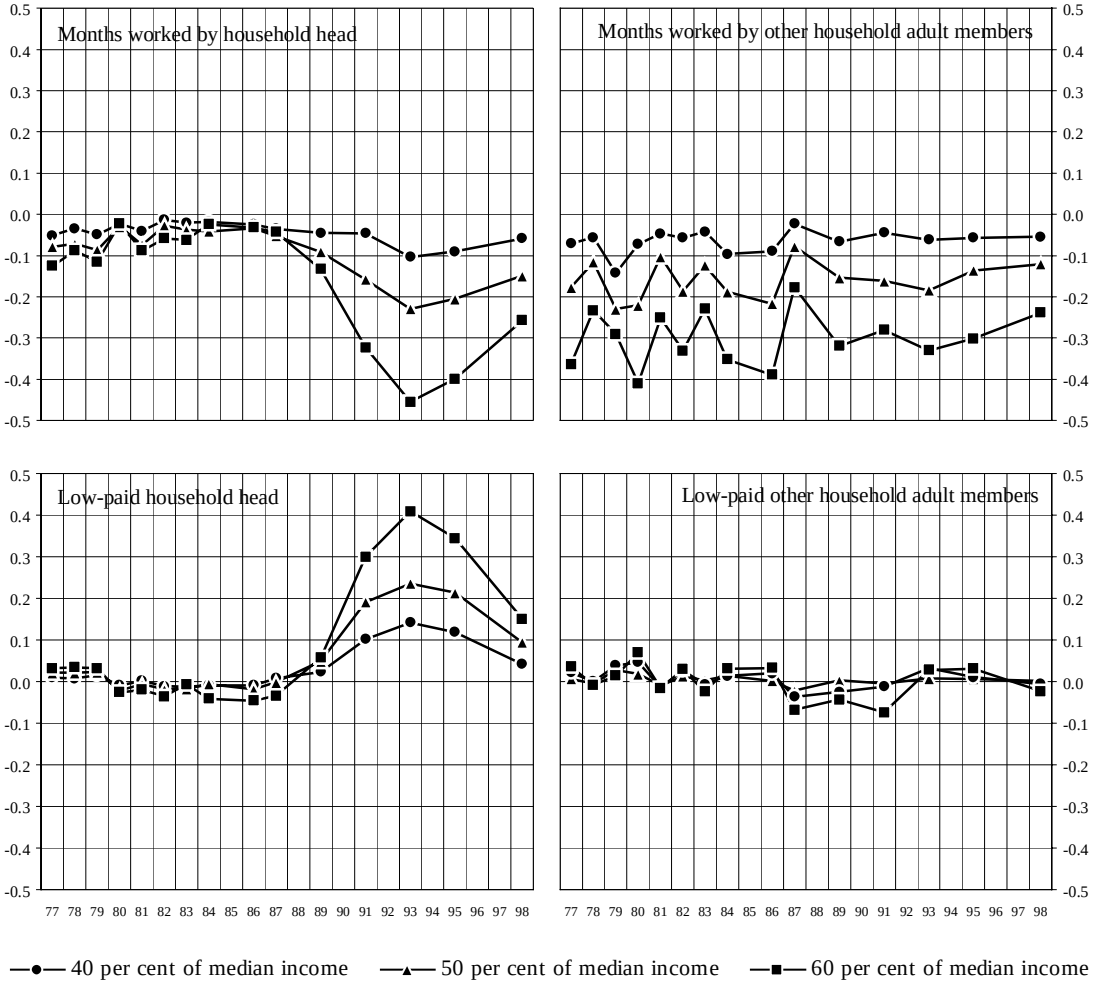
**MARGINAL EFFECTS ON THE PROBABILITY OF BEING IN POVERTY, 1977-1998**




*Source*: authors' elaboration on data from SHIW-HA (Release 1.0). A household is considered poor when its income is below 50 per cent of the median income. Income is defined as equivalent households' after-tax incomes, including imputed rental income from owner-occupied dwellings, but excluding net interest and dividends. The equivalence scale is the one utilised to compute official poverty statistics in Italy (see Inquiry Commission on Poverty, 1997, pp. 37-9).

Chart 11

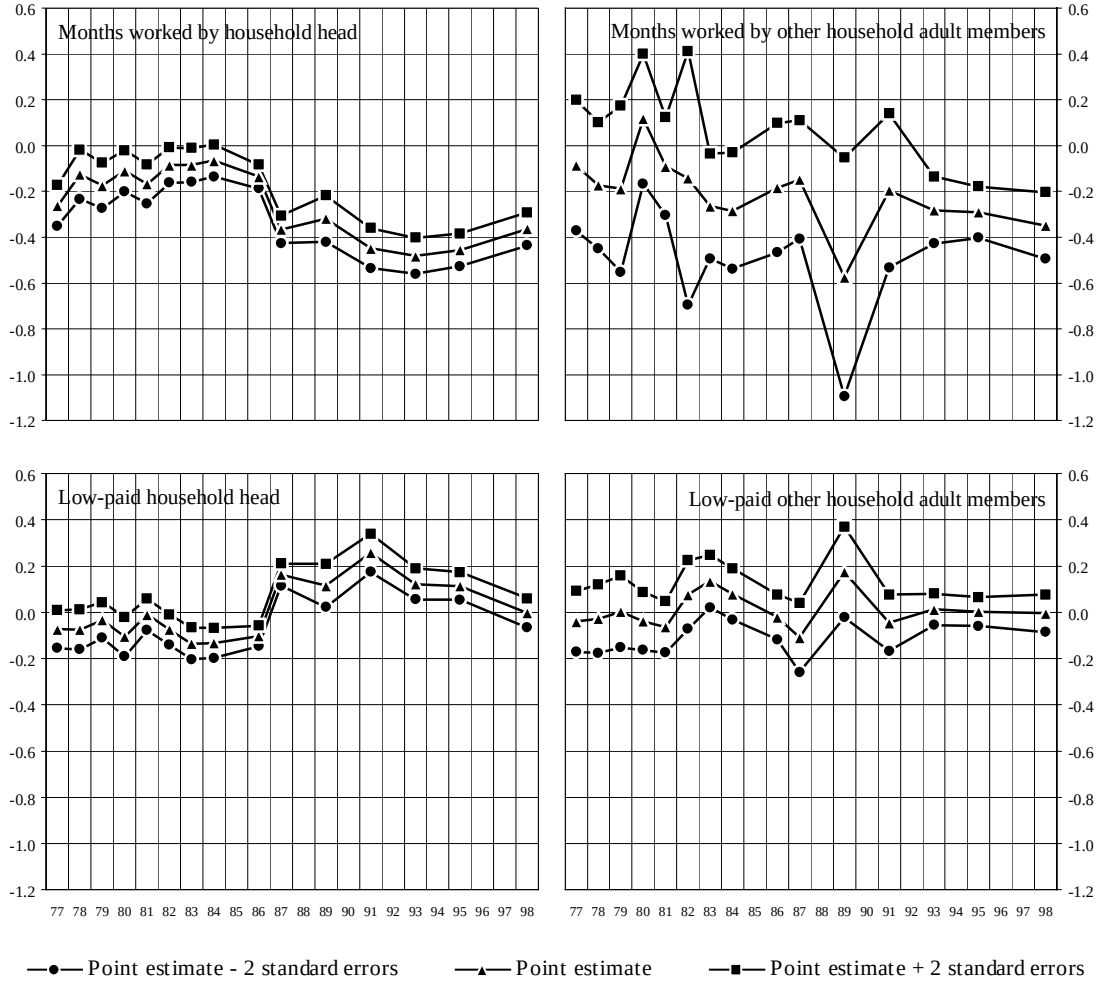
**MARGINAL EFFECTS ON THE PROBABILITY OF BEING IN POVERTY, 1977-1998**




*Source*: authors' elaboration on data from SHIW-HA (Release 1.0). A household is considered poor when its income is below 40, 50 and 60 per cent of the median income, respectively. Income is defined as equivalent households' after-tax incomes, including imputed rental income from owner-occupied dwellings, but excluding net interest and dividends. The equivalence scale is the one utilised to compute official poverty statistics in Italy (see Inquiry Commission on Poverty, 1997, pp. 37-9).

Chart 12

**MARGINAL EFFECTS ON THE POVERTY GAP, 1977-1998**




*Source*: authors' elaboration on data from SHIW-HA (Release 1.0). The poverty gap is the percentage ratio of the difference between poverty line and income of a poor household to the poverty line. A household is considered poor when its income is below 50 per cent of the median income. Income is defined as equivalent households' after-tax incomes, including imputed rental income from owner-occupied dwellings, but excluding net interest and dividends. The equivalence scale is the one utilised to compute official poverty statistics in Italy (see Inquiry Commission on Poverty, 1997, pp. 37-9).

## 6. Conclusions

In this paper we have examined the distribution of net monthly earnings in Italy in the period from 1977 to 1998, on the basis of the data from the Historical Archive of the Bank of Italy's Survey of Household Income and Wealth. The main results are the following.

First, the inequality in the distribution of net earnings decreased from the late 1970s until the end of the 1980s, and especially in the first part of the period; it abruptly increased in the early 1990s and underwent little modification in the remainder of the decade. This pattern also broadly fits the evolution of earnings inequality within major population sub-groups such as full-time employees, men and women, residents in the North and residents in the South. Among prime-age non-agricultural male workers employed throughout the whole year, however, the tendency towards greater inequality emerged in the mid-1980s and manifested itself in a less extreme form. This asymmetry between core employment and the full sample indicates that the significant changes were concentrated among workers at the margin of the labour market.

Second, the diffusion of low-paid jobs evolved in parallel with that of earnings inequality. The proportion of low-paid workers declined from 17 per cent in 1977 to a minimum 8 per cent in 1989, rose to 16 per cent in 1993, and after a fall in 1995, reached a peak of 18 per cent in 1998. The rise of low-paid jobs between 1993 and 1998 is entirely accounted for by the spread of part-time work, as the incidence of low pay among full-time workers remained around 12 per cent. As in the other advanced economies, young people, women and generally persons who are not household heads, the less educated and manual workers, employees in agriculture and trade and lodging are over-represented among the low-paid jobs.

Third, the probability of being in poverty is more closely correlated with the amount of employment in the household, particularly employment of members other than the head, than with low pay. However, the correlation with the low-paid status of the head has strengthened considerably in the last decade. Also the depth of poverty is correlated more with the employment rate than it is with low pay, irrespective of the earner's position in the household.

## Appendix: Information about employees in the SHIW, 1977-1998

The Survey of Household Income and Wealth (SHIW) was conducted yearly by the Bank of Italy from 1965 to 1987 (except for 1985), every other year until 1995 and then in 1998, to gather information on personal income and wealth. Separate information is collected for each source of income for all household members, and the household income is obtained as the sum of these elementary components.

The survey's Historical Archive (SHIW-HA; see Banca d'Italia, 2000b) contains standardised information for years from 1977 onwards (microdata for preceding years are no longer available). The archive includes elementary variables gathered on a regular basis: among others, the personal characteristics of each household member and the incomes earned and job status of each income recipient. It also includes a set of sampling weights adjusted to bring some socio-demographic marginal distributions into line with the corresponding distributions found in Istat's population statistics and labour force survey. In the paper we use this set of adjusted weights (the use of the original weights would not alter the main results), multiplied by a factor equal to the ratio of the total Italian population to the number of individuals in the survey.

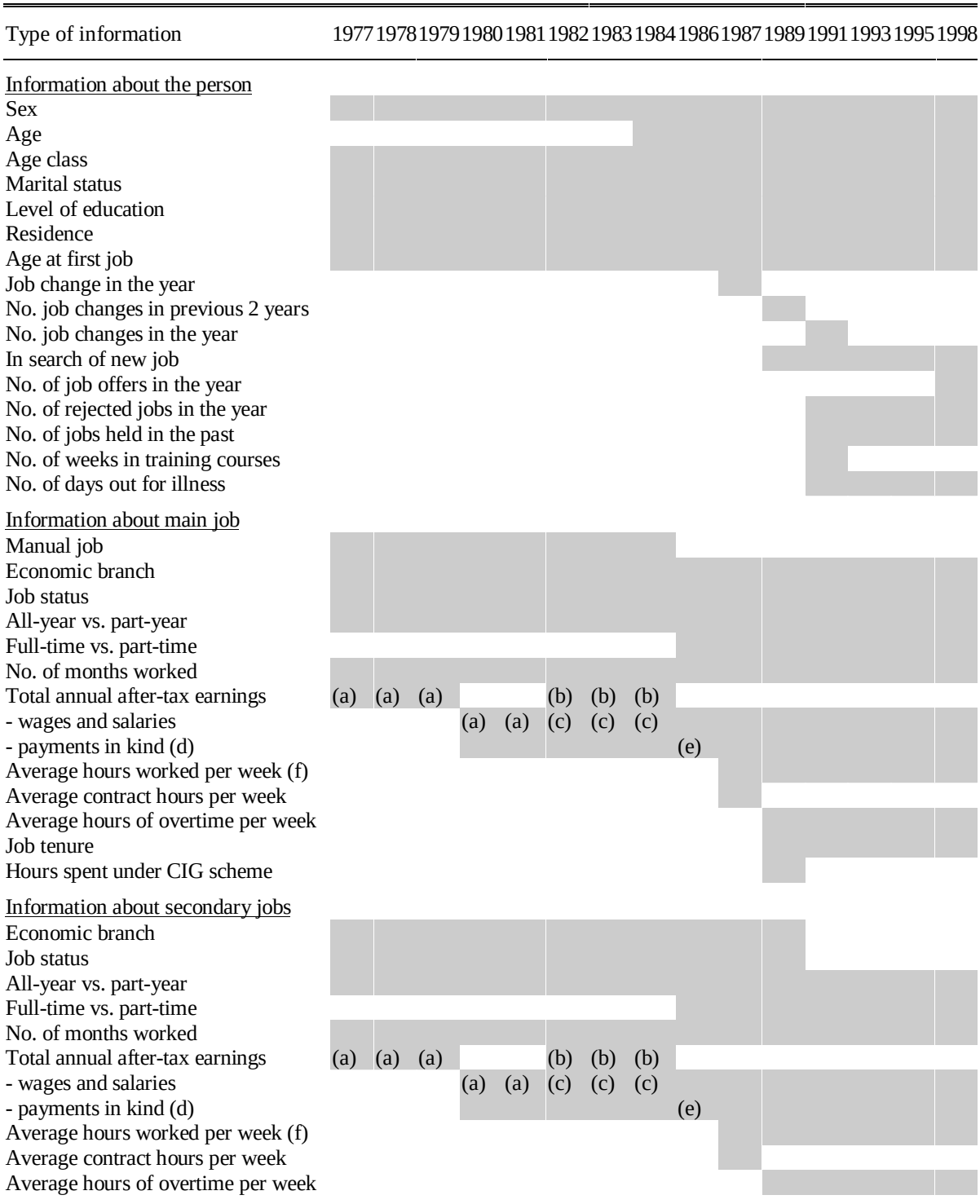
In spite of the many changes which have affected the SHIW (Brandolini, 1999), a set of basic questions about employees and their job positions has remained virtually unmodified over time; this set has been significantly broadened in the last few surveys. Full detail of the information gathered in each survey (except for few questions asked only once), starting with 1977, is shown in Table A1. For the whole period we can distinguish between main and secondary jobs, and between jobs held for the whole year and jobs held for only part of the year; in the latter case, we know the number of months worked. The breakdown into full-time and part-time jobs is known since 1986 only, and age classes have to be used instead of persons' true ages because the information is missing before 1984.

The definition of earnings has remained stable, apart from minimal rewording: earnings are recorded net of taxes and social security contributions, and include all monetary and in-kind payments received by the worker in the year, though separate information is available only after 1980 (a minor discontinuity arises in 1986, since in-kind earnings were asked only to workers employed in the agricultural sector). Monthly earnings are obtained by dividing the annual amount by the number of months worked (set at 12 in the very few cases when it was missing).

The classification of occupations and economic branches has changed frequently (Tables A2 and A3). We distinguish among 3 occupations (production workers, clerical workers, managerial workers) and 5 economic branches: (1) agricultural, forestry and fishery products; (2) industry (including energy products, manufacturing, and construction); (3) wholesale and retail trade, recovery and repair services, lodging and catering services; (4) transport and communication services, and services of credit and insurance institutions; (5) other market services to businesses and households, general public services and non-market services provided by general government (covering both market and non-market activities).

Table A1

**INFORMATION ABOUT EMPLOYEES AND THEIR JOB POSITIONS**




*Source*: SHIW questionnaires. (a) For part-year jobs calculated as total monthly earnings by number of months worked. (b) Part-year jobs only, calculated as total monthly earnings by number of months worked. (c) All-year jobs only. (d) For part-year jobs collected on a yearly basis. (e) Only for workers in the agricultural sector. (f) Including overtime.

Table A2

**CLASSIFICATION OF OCCUPATIONS**

| 1977-1984 | 1986 | 1987 (a) | 1989-1991 | 1993-1998 |
|---|---|---|---|---|
| directors | directors | directors<br>administrators<br>headmasters | directors<br>administrators<br>headmasters | directors<br>administrators<br>headmasters |
| | | judges<br>university teachers | judges<br>university teachers | judges<br>university teachers |
| clerical workers | managerial workers | managerial workers | managerial workers | managerial workers |
| | foremen | foremen | foremen | foremen |
| | teachers | teachers | teachers | teachers |
| | clerical workers | clerical workers | clerical workers | clerical workers |
| other employees | manual workers<br>other employees | manual workers | manual workers | manual workers |

*Source*: SHIW questionnaires. (a) The questionnaire listed separately as an occupation: "member of Parliament and of regional and local councils"; 2 persons (out of 9,461) declared that such was their primary job and other 3 indicated it as their secondary job (out of 270).

Table A3

**CLASSIFICATION OF ECONOMIC BRANCHES**

| Economic branch | Survey years | | | | | |
|---|---|---|---|---|---|---|
| | 1977-1984 | 1986 | 1987 | 1989 | 1991 | 1993-98 |
| agricultural, forestry and fishery products | | | | | | |
| fuel and power products (a) | | | | | | |
| manufactured products (b) | | | | | | |
| building and construction | | | | | | |
| recovery and repair services | | | | | | |
| wholesale and retail trade | | | | | | |
| lodging and catering services | | | | | | |
| transport and communication services | | | | | | |
| services of credit and insurance institutions | | | | | | |
| market services to businesses | | | | | | |
| other market personal services | | | | | | |
| non-market services provided by government | | | | | | |
| general public services | | | | | | |
| international organisations (c) | | | | | | |

*Source*: SHIW questionnaires. (a) Further separated into 2 branches in 1987. (b) Further separated into 3 branches in 1987. (c) Until 1989 this sector was not specified; in 1991 it was included among non-market services provided by general government. In 1993, 8 persons (out of 8,121) fell in this category.

Like most sample surveys on households' incomes, the SHIW suffers from problems of sample selection bias, non-reporting and under-reporting (e.g. Brandolini and Cannari, 1994; Cannari and Gavosto, 1995; Brandolini, 1999). In all years of our sample, the number of salaried employees is higher in the SHIW than in the Istat's Labour Force Survey (LFS),

while the number of wage-earners is closer; on balance, the employees appear to be over-represented, to a lesser extent in more recent surveys (Table A4). (To enhance comparability we re-scaled the total population size in the SHIW to equal that in the LFS.) Part of the discrepancy can be explained by the different definition of labour market status, which is defined as the prevalent occupation in the year in the SHIW, and as the yearly average of conditions recorded at the moment of the interviews (conducted in January, April, July and October) in the LFS. The SHIW-HA (see Banca d'Italia, 2000b, p. 12) provides an alternative set of weights adjusted to bring socio-demographic marginal distributions into line with the corresponding distributions found in the LFS and population statistics. Differences relative to the LFS statistics are somewhat attenuated, though not cancelled (last three columns of Table A4). In the paper, we use the set of adjusted weights.

Table A4

**EMPLOYEES IN THE LFS AND THE SHIW, 1977-1998**
(thousands of persons)

| Year | LFS (a) | | | SHIW (original weights) (b) | | | SHIW (adjusted weights) (c) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Wage earners | Salaried employees | Total | Wage earners | Salaried employees | Total | Wage earners | Salaried employees | Total |
| 1977 | 9,773 | 4,589 | 14,362 | 10,903 | 5,355 | 16,258 | 9,416 | 4,569 | 13,985 |
| 1978 | 9,593 | 4,770 | 14,363 | 10,989 | 6,778 | 17,767 | 8,695 | 5,282 | 13,977 |
| 1979 | 9,643 | 4,968 | 14,611 | 11,099 | 6,529 | 17,628 | 8,925 | 5,211 | 14,136 |
| 1980 | 9,655 | 5,153 | 14,808 | 9,299 | 7,900 | 17,199 | 7,709 | 6,500 | 14,209 |
| 1981 | 9,500 | 5,326 | 14,826 | 9,719 | 7,863 | 17,582 | 7,880 | 6,274 | 14,154 |
| 1982 | 9,232 | 5,568 | 14,800 | 9,199 | 8,786 | 17,985 | 7,232 | 6,821 | 14,053 |
| 1983 | 8,959 | 5,712 | 14,671 | 9,474 | 7,775 | 17,249 | 7,801 | 6,296 | 14,097 |
| 1984 | 8,524 | 5,954 | 14,478 | 9,372 | 7,509 | 16,881 | 7,906 | 6,188 | 14,094 |
| 1986 | 8,364 | 6,340 | 14,704 | 8,365 | 7,249 | 15,614 | 7,526 | 6,806 | 14,332 |
| 1987 | 8,204 | 6,505 | 14,709 | 8,269 | 7,964 | 16,233 | 7,706 | 7,134 | 14,840 |
| 1989 | 8,161 | 6,776 | 14,937 | 7,881 | 8,735 | 16,616 | 7,217 | 7,912 | 15,129 |
| 1991 | 8,285 | 7,194 | 15,479 | 7,226 | 8,581 | 15,807 | 7,000 | 8,470 | 15,470 |
| 1993 | 6,981 | 7,630 | 14,611 | 7,024 | 7,862 | 14,886 | 6,731 | 7,652 | 14,383 |
| 1995 | 7,015 | 7,189 | 14,204 | 7,067 | 7,666 | 14,733 | 6,807 | 7,481 | 14,288 |
| 1998 | 7,441 | 7,107 | 14,548 | 7,013 | 8,188 | 15,201 | 6,601 | 7,784 | 14,385 |

*Source*: *SHIW*: authors' elaboration on data from SHIW-HA (Release 1.0). *LFS*: Istat, data from the labour force surveys. (a) Because of the extensive revisions carried out in 1984 and 1992, the figures cannot be interpreted as consistent time series. (b) Data computed using the original sample weights, which correct for the differential response rate in each stratum, with the SHIW total population size re-scaled to equal the LFS size. (c) Data computed using the adjusted weights derived from post-stratifying the sample according to the socio-demographic characteristics of the population, with the SHIW total population size re-scaled to equal the LFS size.

The number of employees as derived from the respondents' declaration may differ from the number of primary job positions for which information is available, either for a coding error, or, more likely, because some respondents moved to a new job or changed their status during the year. In the whole period, such differences in the SHIW are negligible, except in 1993, 1995 and 1998 where they are in the order of 4 per cent (Table A5). In the paper we always refer to job positions. Apart from the relatively close correspondence with

the LFS figures brought about by the use of the adjusted weights, we may note that the SHIW totals exceed the number of regular employees recorded in national accounts (NA), though they fall short of the total number of employees (Table A5). Thus, it seems that the SHIW manages to capture some part of non-regular employment. (Notice that the NA figures cover all persons employed in resident production establishments, including non-resident and institutionalised persons, while the SHIW and the LFS data refer to resident households.)

Table A5

**EMPLOYEES IN THE NA, THE LFS AND THE SHIW, 1986-1998**
(thousands of persons)

| Year | NA | | | LFS (a) | SHIW (adjusted weights) (b) | | |
|---|---|---|---|---|---|---|---|
| | Regular workers | Non-regular workers | Total | Total | Declared job status | Primary job positions | Adjusted primary job positions (c) |
| 1977 | | | | 14,362 | 13,985 | 13,900 | 13,205 |
| 1978 | | | | 14,363 | 13,977 | 13,907 | 12,980 |
| 1979 | | | | 14,611 | 14,136 | 14,079 | 13,140 |
| 1980 | | | | 14,808 | 14,209 | 14,174 | 13,229 |
| 1981 | | | | 14,826 | 14,154 | 14,110 | 13,052 |
| 1982 | | | | 14,800 | 14,053 | 14,208 | 13,142 |
| 1983 | | | | 14,671 | 14,097 | 14,025 | 13,207 |
| 1984 | | | | 14,478 | 14,094 | 14,066 | 13,128 |
| 1986 | | | | 14,704 | 14,332 | 14,301 | 13,110 |
| 1987 | | | | 14,709 | 14,840 | 14,868 | 13,877 |
| 1989 | | | | 14,937 | 15,129 | 15,096 | 14,592 |
| 1991 | | | | 15,479 | 15,470 | 15,710 | 15,055 |
| 1993 | 13,916 | 2,456 | 16,372 | 14,611 | 14,383 | 14,886 | 13,770 |
| 1995 | 13,539 | 2,533 | 16,072 | 14,204 | 14,288 | 14,935 | 13,690 |
| 1998 | 13,759 | 2,708 | 16,467 | 14,548 | 14,385 | 14,908 | 14,039 |

*Source*: *SHIW*: authors' elaboration on data from SHIW-HA (Release 1.0). *LFS*: Istat, data from the labour force surveys. *NA*: Istat (2001b). (a) Because of the extensive revisions carried out in 1984 and 1992, the figures cannot be interpreted as consistent time series. (b) Data computed using the adjusted weights derived from post-stratifying the sample according to the socio-demographic characteristics of the population, with the SHIW total population size re-scaled to equal the LFS size. (c) Number of primary job positions multiplied by the average number of months worked divided by 12.

Wages and salaries appear to be imperfectly covered in the SHIW, but the under-estimation is less serious than for other income sources: on average, from 1977 to 1995, the grossed-up survey totals (based on the adjusted weights) fall short of the corresponding NA (ESA 1979) figures by 22 per cent (Brandolini, 1999, p. 219, Table 11). This discrepancy reflects a number of factors: (a) the underlying difference in definitions, which are often irreducible; (b) the incomplete coverage of non-regular employment just mentioned; (c) the difficulties encountered by the SHIW in capturing secondary jobs (see Brandolini, 1999, for a more extensive discussion).

## References


Abbate, C., and A. Baldassarini (1995). "Contenuto informativo degli archivi INPS e confronto con altre fonti sul mercato del lavoro". *Economia & Lavoro*, 28, No. 2, 115-133.

Addabbo, T. (1997). "Part-Time Work in Italy". In H.-P. Blossfeld and C. Hakim (eds.), *Between Equalization and Marginalization. Women Working Part-Time in Europe and the United States of America*, 113-132. Oxford: Oxford University Press.

Banca d'Italia (2000a). *Annual Report*. Rome: Banca d'Italia.

Banca d'Italia (2000b). *Archivio storico dell'Indagine sui bilanci delle famiglie italiane, 1977-98. Versione 1.0. Aggiornamento al 18 aprile 2000*. Edited by G. D'Alessio and I. Faiella. Banca d'Italia: Roma.

Brandolini, A. (1999). "The Distribution of Personal Income in Post-War Italy: Source Description, Data Quality, and the Time Pattern of Income Inequality". *Giornale degli Economisti e Annali di Economia*, 58, 183-239.

Brandolini, A. (2000a). "'The Problematic Measurement of Income from Self-employment': A Comment". Paper presented at the Seminar on Household Income Statistics organised by Eurostat, Luxembourg, 13-14 December 1999.

Brandolini, A. (2000b). "Appunti per una storia della distribuzione del reddito in Italia nel secondo dopoguerra". *Rivista di storia economica*, 16, 215-230.

Brandolini, A., and L. Cannari (1994). "Methodological Appendix: The Bank of Italy's Survey of Household Income and Wealth". In A. Ando, L. Guiso, and I. Visco (eds.), *Saving and the Accumulation of Wealth. Essays on Italian Households and Government Saving Behaviour*, 369-386. Cambridge: Cambridge University Press.

Cannari, L. (1993). "Povertà e livello dei prezzi". In Commissione d'indagine sulla povertà e sull'emarginazione, *Terzo rapporto sulla povertà in Italia*. Roma: Istituto Poligrafico e Zecca dello Stato.

Cannari, L., and A. Gavosto (1995). "L'indagine della Banca d'Italia sui bilanci delle famiglie: una descrizione dei dati sul mercato del lavoro". *Economia & Lavoro*, 28, No. 1, 63-79.

Caruso, M., R. Sabbatini and P. Sestito (1993). "Inflazione e tendenze di lungo periodo nelle differenze geografiche del costo della vita". *Moneta e Credito*, 46, 349-378.

Casavola, P., P. Cipollone and P. Sestito (1999). "Determinants of Pay in the Italian Labor Market: Jobs and Workers". In J. C. Haltiwanger, J. I. Lane, J. R. Spletzer, J. J. M. Theeuwes and K. R. Troske (eds.), *The Creation and Analysis of Employer-Employee Matched Data*, 25-58. Amsterdam: North Holland.

Cowell, F. A. (1989). "Sampling Variance and Decomposable Inequality Measures". *Journal of Econometrics*, 42, 27-41.

Erickson, C. L., and A. Ichino (1995). "Wage Differentials in Italy: Market Forces, Institutions, and Inflation". In R. B. Freeman and L. F. Katz (eds.), *Differences and Changes in Wage Structures*, 265-305. Chicago, IL: University of Chicago Press.

Keese, M., A. Puymoyen and P. Swaim (1998). "The Incidence and Dynamics of Low-Paid Employment in OECD Countries". In R. Asplund, P. J. Sloane and I. Theodossiou (eds.), *Low Pay and Earnings Mobility in Europe*, 223-265. Cheltenham: Edward Elgar.

Inquiry Commission on Poverty (1997). *Poverty in Italy. 1980-95*. Roma: Istituto Poligrafico e Zecca dello Stato.

INPS (2001). *Banche Dati Statistiche. Osservatorio sui lavoratori dipendenti*. At: http:// www.inps.it/doc/sas_stat/dipendenti/dipendenti.html.

Istat (2001a). *Conti economici territoriali secondo il Sec95. Dati analitici, anni 1995-1998*. At: http://www.istat.it/Primpag/contiter/presentazione.html.

Istat (2001b). *L'occupazione non regolare nelle stime di contabilità nazionale secondo il Sec95. Anni 1992-1999. Dati analitici, maggio 2001*. At: http://www.istat.it/Anotizie/ Acom/connaz/occupazione.html.

Istituto italiano per la promozione del lavoro a tempo parziale (1980). *Il lavoro part-time. Realtà sociale e aspetti giuridico-sindacali*. Milano: Etas libri.

Lucifora, C. (1996). "L'analisi del mercato del lavoro con micro-dati: l'utilizzo degli archivi amministrativi INPS". *Economia & Lavoro*, 29, No. 3, 3-20.

Lucifora, C. (1998). "Working Poor? An analysis of Low-Wage Employment in Italy". In R. Asplund, P. J. Sloane and I. Theodossiou (eds.), *Low Pay and Earnings Mobility in Europe*, 185-208. Cheltenham: Edward Elgar.

Manacorda, M. (2000). "The Fall and Rise of Earnings Inequality in Italy. A Semiparametric Analysis of the Role of Institutional and Market Forces". UC Berkeley, Center for Labor Economics, Mimeo.

OECD (1996). "Earnings Inequality, Low-Paid Employment and Earnings Mobility". In *Employment Outlook*, 59-108. Paris: OECD.

Regalia, I., M. Regini and E. Reyneri (1978). "Labour Conflicts and Industrial Relations in Italy". In C. Crouch and A. Pizzorno (eds.), *The Resurgence of Class Conflict in Western Europe since 1968*, vol. I. National Studies, 101-158. London and Basingstoke: Macmillan.

Regalia, I., and M. Regini (1996). "Sindacato e relazioni industriali". In *Storia dell'Italia repubblicana. Volume III. L'Italia nella crisi mondiale. L'ultimo ventennio. I. Economia e società*, 777-836. Torino: Einaudi.

Rettore, E., and D. Rizzi (1996). "Indicatori settoriali di povertà: (non)occupazione". Mimeo.

Sestito, P. (1992). “Costanti e variazioni nella struttura dei differenziali retributivi in Italia”. In *Ricerche applicate e modelli per la politica economica*, 877-902. Roma: Banca d”Italia.

Wolfson, M. C. (1994). “When Inequalities Diverge”. *American Economic Review Papers and Proceedings*, 84, 353-358.

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