



Time and work: duration of work



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European Foundation for the Improvement of Living and Working Conditions

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and Antoine Valeyre

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Foreword

Promoting reconciliation between work and non-working life is essential, both to facilitate entry to the labour market and to enable people to stay there.

This report, based on a secondary analysis of the Foundation's *Third European Survey on Working Conditions*, provides important information on developments regarding working time in Europe. While working time continues to be reduced, both collectively and on average, other trends are perhaps more worrying, such as the increased intensity of work, particularly for those already working long hours. We are also witnessing the spread of working time flexibility linked both to competitiveness targets and to the aim of reconciling professional life and non-working life.

We hope that this report, which contains useful information on these developments, can contribute to a better debate at European level on the organisation and reorganisation of working time in Europe, so that enterprises, employees and government players can work together to find the solutions that best reconcile the interests and concerns of all.

Raymond-Pierre Bodin,
Director

Eric Verborgh,
Deputy Director

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Introduction

This report concerns working hours and time schedules and their implications for living and working conditions, and in particular the effects of long working hours and atypical schedules on health.

Most European countries have experienced a gradual reduction in working hours over the last two decades, either because of trade union pressure or government measures, or the combined effects of both. This trend, from which only the United Kingdom is excluded, generally goes hand in hand with individually arranged time schedules and a variation of individual working hours and rhythms.

It can constitute an improvement of working conditions while also being problematic for some because of the disruptions and stress it generates. In addition, work has intensified and flexibility of working time has increased: variation in the rhythm and duration of working hours, the organisation of work in more or less regular cycles and irregular organisational procedures which disrupt living conditions. In short, it is not certain that recent developments regarding working time and work rhythms have improved the living and working conditions of employees. It is more likely that there has been an improvement for some employees who benefit from the reduced working hours under favourable conditions, and a deterioration for others who are subject to more intense rhythms and unpredictable and irregular time schedules. One of the questions that we explore in this report is the reality and extent of the polarisation of working conditions: the accumulation of advantages on the one hand and, on the other, the accumulation of risks and problems for less protected employees.

The importance attached to the organisation of work when analysing the management of working time, from the point of view of its duration, organisation, rhythm and intensity, has led us to focus in this report on the situation of salaried employees. The working time patterns of non-salaried employees, the self-employed and company managers are of a quite different nature and should be treated accordingly.

Duration of working time

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The question of working time is a key aspect of working conditions and has been the subject of several European Community recommendations and of many government and/or trade union measures in various EU Member States. The trend in working time may be regarded as a key indicator of the improvement of living and working conditions. However, care is advisable when it comes to statistics generated by different national and comparative surveys.

Definition of working time

At first sight, nothing seems easier to measure than working time. But on closer examination the exercise is not as straightforward as it might appear. Take the case of teachers. The question in the survey, 'How many hours do you usually work per week in your main paid job?' can result in several possible answers depending on whether the number of teaching hours is taken into account, or the total number of hours worked includes class preparation and correction of homework. In the latter case, the answer will depend on personal factors: speed of work, difficulty of classes and degree of professional conscientiousness. The answer may also be based on the time that was contractually agreed.

Moreover, the concept of normal working time may be open to interpretation when the periods worked differ from one week to another. Is the period most frequently worked to be taken into account, or the average period? If it is indeed the period usually worked, this approach will not suit a growing number of employees whose working times vary considerably depending on the season.

Lastly, the disparate nature of tasks and levels of responsibility have more than a little to do with clear boundaries for working periods. The development of intellectual and related activities erases the boundaries between work and non-work. Work may be carried on during rest periods and, conversely, but to a lesser degree, leisure activities may be pursued during working time. All of these factors make the subjective assessment of working time relatively uncertain. This uncertainty varies according to each professional category. It has a greater effect on executives, who are free from a fixed time schedule and whose business lunches may be included in working time, than industrial workers for whom the duration of the working day is quite strictly defined by clocking-in procedures.

Measuring working time

For these reasons and for reasons relating to the special features of this survey, caution is advisable if we want to compare the working time that results from this survey with figures from other sources, for instance Eurostat. In this case the working time calculated or, to be more precise, estimated, is usual working time (not average working time) in the context of the main paid job and hence excluding other possible paid activities.

An examination of the breakdown of employees according to their working time shows a considerable tendency towards certain numbers ending in 0 or 5, in particular 30, 35, 40, 45 and 50. These five numbers account for 53% of the answers. Given this, it is difficult to use the data to draw conclusions about some aspects without having more exact figures. The polarisation of the figures between those involving the numbers 5 and 0 may in fact distort the measurement of working time where small groups of workers are concerned. Because of this problem, we were guided by caution and did not to undertake any elaborate exercises.

In addition, the arrangement in working time brackets (Q14R) does not reflect clearly the breakdown in working times. The arrangement is influenced by considerations that are not very straightforward.

Dispersion of time schedules

The breakdown of employees by working time varies widely. It must be noted in particular that quite considerable proportions of employees work very long or very short hours. Almost one in every five employees (17.2%) work over 40 hours a week, while practically as many (16.7%) work fewer than 29 hours (Table 2). It is worthwhile noting, however, that 40 hours is the modal period for over one quarter of employees (27%). Thus the 40-hour week, first demanded by workers in the nineteenth century, still holds sway in Europe in the year 2000.

Table 1 Breakdown of employees by working time bracket according to gender (as a %)

	29 hours or less		30–35 hours		36–39 hours		40 hours		41–44 hours		45 hours or more	
	1995	2000	1995	2000	1995	2000	1995	2000	1995	2000	1995	2000
Men	4.52	5.62	6.9	8.92	33.38	29.18	26.42	32.05	5.78	3.49	23	19.96
Women	27.24	31.16	13.87	16.04	28.98	23.97	19.35	19.67	3.27	2.33	7.29	6.83
Total	14.52	16.75	9.97	12.46	31.44	26.91	23.31	26.66	4.68	2.99	16.08	14.24

Table 2 Breakdown of employees according to working time (as a %)

	Total employees	Full-time employees
29 hours or less	16.7	4.0
30–35 hours	12.5	11.8
36–39 hours	26.9	32.1
40 hours	26.7	31.7
41–44 hours	3.0	3.6
45 hours or more	14.2	16.9

These figures take part-time work into account. In the 15 Member States, 17.5% of employees spontaneously report that they are working part-time (Table 3). Working part-time means working fewer hours than the hours agreed collectively at the enterprise in question. The situation regarding part-time work is therefore related to belonging to a given organisation. Thus what constitutes part-time work in one enterprise may be regarded as full-time work in another.

If full-time employees only are taken into account, the breakdown of working times changes considerably. There is, logically enough, a considerable reduction in the proportion of employees working fewer than 29 hours. They number only 4%, whereas 20.5% of employees work over 40 hours and the 40-hour week is the lot of over one-third 38% of employees (Table 2).

Despite the relative tightening of the range of working hours, and the concentration around 40 hours, the working times practised in 2000 are still vary widely.

Table 3 Percentage of part-time employees by country

	Total	Men	Women
Belgium	19.38	5.79	39.10
Denmark	20.16	8.45	33.69
Germany	17.09	3.08	35.14
Greece	3.46	4.48	1.84
Spain	16.25	8.89	29.10
France	16.01	4.94	29.50
Ireland	17.07	6.83	29.42
Italy	10.54	3.82	20.97
Luxembourg	15.91	3.48	36.69
Netherlands	34.25	14.06	62.70
Austria	16.15	3.58	32.05
Portugal	8.76	5.93	12.07
Finland	11.57	7.10	16.14
Sweden	22.24	9.35	35.38
UK	21.92	4.17	41.62
Total	17.52	5.29	33.36

Discrepancies between different countries

Working times vary significantly from one country to another, reflecting the diversity of social traditions and legislation. In several countries, the 40-hour week is still the norm, or at least the period most frequently worked (Greece, Spain, Luxembourg, Portugal and Sweden). In other countries, the 36–39 hour is becoming the norm (Belgium, Denmark, Germany and France). In the remaining countries, the spread is more marked (Table 4). Some countries stand out because of the incidence of short working weeks (Belgium and the Netherlands), and others for long working weeks (Spain, Ireland, Portugal and the United Kingdom).

The incidence of part-time work differs considerably according to country. It is low in the Mediterranean countries (3.5% in Greece, 10.5% in Italy, and 9% in Portugal), and very high in some northern European countries (34% in the Netherlands, 22% in Sweden, and 22% in the United Kingdom) (Table 3). When part-time employees are excluded, a different breakdown emerges, but that does not significantly alter the above comments (Table 5).

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Table 4 Breakdown of all employees according to working time (as a %)

	Under 29 hours	30–35 hours	36 to 39 hours	40 hours	41 to 44 hours	45 hours or more
Belgium	20.0	9.5	42.9	20.2	0.8	6.6
Denmark	13.7	12.0	54.2	7.3	2.8	10.1
Germany	17.1	9.0	33.6	28.0	2.4	10.0
Greece	9.1	24.2	8.1	41.5	2.8	14.4
Spain	12.5	11.2	6.5	45.6	2.0	19.2
France	14.7	24.6	36.7	8.0	3.7	12.5
Ireland	17.2	11.2	26.2	24.0	3.0	18.3
Italy	14.5	7.0	24.4	34.5	3.8	15.9
Luxembourg	15.2	5.5	3.0	61.5	1.0	13.8
Netherlands	30.3	12.5	19.2	26.3	1.7	10.0
Austria	13.8	7.8	32.5	30.7	2.3	13.0
Portugal	8.1	14.6	3.8	48.0	5.5	20.3
Finland	8.7	10.5	28.7	34.9	2.4	14.9
Sweden	10.9	12.6	10.3	53.9	2.2	10.1
United Kingdom	21.5	10.8	24.7	19.0	3.7	20.4
Total	16.8	12.5	26.9	26.7	3.0	14.2

Table 5 Breakdown of full-time employees according to working time) (as a %)

	Under 29 hours	30 to 35 hours	36 to 39 hours	40 hours	41 to 44 hours	45 hours or more
Belgium	6.81	6.26	52.67	25.06	1.03	10.60
Denmark	1.74	6.63	67.02	8.76	3.46	14.58
Germany	2.98	8.06	40.25	33.71	2.93	15.46
Greece	8.95	24.00	8.25	41.59	2.74	18.01
Spain	3.92	11.30	6.91	53.81	2.26	23.85
France	4.32	24.02	43.21	9.34	4.35	17.78
Ireland	4.72	11.22	31.24	28.00	3.46	28.70
Italy	7.25	5.92	26.90	38.23	4.18	21.54
Luxembourg	4.50	3.84	3.43	71.60	0.79	16.96
Netherlands	3.52	10.58	28.64	35.59	2.58	17.76
Austria	2.45	5.30	37.89	36.26	2.70	18.50
Portugal	3.93	14.99	3.62	50.25	5.80	27.15
Finland	2.96	8.91	31.46	38.09	2.68	18.84
Sweden	1.45	4.23	11.44	67.48	2.79	15.12
United Kingdom	2.49	12.49	30.70	24.16	4.70	31.77
Total	3.96	11.78	32.06	31.65	3.60	20.72

Table 6 Average working hours by country (hours per week)

	Total employees	Men	Women	Full-time employees	Full-time men	Full-time women
Belgium	35.35	38.50	30.77	38.51	39.50	36.28
Denmark	35.33	37.44	32.90	38.53	39.10	37.62
Germany	36.30	39.42	32.28	39.63	40.16	38.62
Greece	38.68	40.21	36.27	38.77	40.28	36.46
Spain	38.47	40.2	33.51	40.65	41.52	38.72
France	36.45	38.86	32.80	38.88	39.59	37.69
Ireland	37.56	41.45	32.88	40.71	42.41	37.99
Italy	37.66	39.95	34.27	39.36	40.58	37.06
Luxembourg	37.87	41.20	32.31	40.26	41.18	37.90
Netherlands	32.50	37.16	25.94	39.24	40.07	36.57
Austria	37.69	40.67	33.92	40.46	41.20	39.14
Portugal	39.59	41.40	37.62	40.68	41.92	39.14
Finland	39.13	40.60	37.62	40.74	41.34	40.05
Sweden	37.47	39.56	35.33	40.48	40.95	39.81
United Kingdom	36.63	42.42	30.20	41.51	43.08	38.66
Total	36.74	39.99	32.53	39.91	40.84	38.19

The differences between the countries can also be seen from the indicators of average working time. Given the differences in the incidence of part-time work from country to country, the fact of whether or not part-time employees are taken into account has a considerable impact on the relative positions of the different countries. For instance, the United Kingdom is eleventh in descending order (36.6 hours) when all employees are included, but second (41.5 hours) when only full-time employees are counted (Table 6). For the 15 Member States, the average working time is under 37 hours (36.74 hours) for all employees and almost 40 hours for full-time employees (39.9 hours).

The average working time for all employees is longest in Portugal (39.6 hours). Working times are relatively long in most Mediterranean countries. This has to do with the small proportion of part-time workers: the gap between the longest and shortest working times (32.5 hours in the Netherlands) is over seven hours. Looking only at full-time employees, the longest working times are found in Finland and Ireland (both 40.7 hours) and the United Kingdom (41.5 hours), while the shortest are in Greece, Belgium, France and Denmark, which have working times of less than 39 hours. The gap between the longest and shortest working times is only three hours.

The discrepancies between the 15 EU Member States show no sign of disappearing. One group of countries, including Belgium, Denmark, Germany, the Netherlands and France, stands out with average weekly working hours of less than 40, while others, Ireland, Finland and the United Kingdom still have long (over 40) weekly working hours.

Discrepancies between professional categories

Working times vary considerably according to professional category (Table 7). Managers have longer working hours, with over 39% of them working 45 hours or more, whereas only 5% of office workers and 17% of industrial workers do so. There is a considerable spread of working hours among services/sales employees, almost 30% of whom work 29 hours or less because of the large number of part-time employees in sales professions, while over 20% of them work 40-hour weeks.

Table 7 Percentage of employees in each category of working time according to working hours

Professional categories	29 hours or less	30–35 hours	36–39 hours	40 hours	40–44 hours	45 hours or more
Senior executives	4.58	9.53	23.39	18.22	4.9	39.4
Middle management	25.26	13.61	21.64	21.2	1.8	16.4
Technicians	14.27	14.55	31.67	23.27	3.2	13.0
Office workers	19.2	16.98	32.63	23.58	2.5	5.1
Service/sales employees	29.97	13.71	18.66	20.83	0.5	13.1
Agricultural workers	4.26	11.07	28.52	33.98	4.8	17.4
Craft workers	4.17	7.08	31.24	39.66	2.9	15.0
Industrial workers	4.34	10.96	28.67	34.65	4.14	17.24
Labourers	28.84	11.51	21.35	25.96	1.68	10.66
Total employees	16.75	12.46	26.91	26.66	2.99	23.43

Table 8 Average working time by socio-professional category (hours per week)

	Total employees	Men	Women	Full-time employees only	Full-time men	Full-time women
Managers	44.16	45.98	40.20	44.97	46.23	41.88
Middle managers	35.31	38.69	31.96	37.72	39.65	35.39
Technicians and engineers	36.80	39.76	33.78	39.73	40.32	38.89
Employees	34.77	38.20	33.10	38.46	39.02	38.09
Sales	33.79	39.86	30.87	40.60	42.45	39.17
Agricultural workers and fishermen	40.04	40.31	37.50	41.26	41.54	39.87
Craft workers	39.75	40.30	35.04	40.46	40.59	39.01
Industrial workers	40.20	40.94	36.48	40.93	41.29	38.90
Labourers	32.69	36.83	28.09	38.57	39.20	37.39
Military	41.49	41.91	33.82	41.71	41.81	39.14
Total	36.74	39.99	32.53	39.91	40.84	38.19

Working time indicators provide a better view of the disparities between categories of employees. It is particularly noteworthy that managers' average working hours are almost 45 hours (44.2 hours), while only agricultural workers (40 hours), industrial workers (40.2 hours) and the military (41.5 hours) otherwise exceed 40 hours (see Table 8). At the other extreme, services/sales staff,

office workers and labourers work less than 35 hours. There is a considerable disparity (11.5 hours) between the working time of managers and that of labourers (32.7 hours). The disparity between the categories is reduced once the effects of part-time work are cancelled out. Managers still have the longest average working hours (45 hours), while middle managers have the shortest (37.7 hours), resulting in a disparity of 7.3 hours between these two categories.

The type of employment contract and level of seniority in the enterprise affect the probability of working certain schedules. Employees with temporary employment contracts (fixed-term contracts, temporary agency contracts or apprentice contracts) are more likely to work part-time or to have short working times, whereas for permanent employees the probability of working part-time decreases with their years of service. Thus part-time work affects, in decreasing order, employees on temporary employment contracts (26.3%), employees with fixed-term contracts and under one year of service (24.8%), followed by those with between one and two years of service (18.7%), and finally those with over two years of service (14.5%). Employees on fixed-term contracts with few years of service are also more likely to be working over 45 hours per week, whereas those with over two years' service are more numerous, proportionally, in the 36–39 hour bracket (Table 82). Starting work on a fixed-term contract means, for women, a greater probability of working short hours (over 42% of them work 29 hours or less per week) and for men, a higher risk of working over 40 hours per week (this affects 29% of men whereas it affects only 23.6% of those with over two years of service).

The differences between socio-professional categories are marked in terms of average working times. Managers work hours that are considerably above the average. Of the other categories, blue-collar workers work the longest hours, slightly over 40, while office workers, sales staff, technicians and middle managers work considerably less than the average hours.

Women's working hours at company level

It can be seen that women in general work shorter hours than men: 31% of women work less than 29 hours compared with 5.6% of men (Table 9). On the other hand, men work long hours, with 20% working 45 hours or more, compared with 6.8% of women.

The main, but not the only, reason for this discrepancy is the spread of part-time work among women. Thirty-three per cent of women work part-time, but only 5% of men (Table 3).

Of the women who work fewer than 29 hours, only 1.25% are managers and 47.5% are employees (offices, services and commerce). These categories account for 14% and 34% respectively of women working 45 hours or more.

Table 9 Breakdown of employees per working time bracket according to gender (as a %)

	29 hours or less	30–35 hours	36–39 hours	40 hours hours	41–44 hours	45 hours or more
Men	5.62	8.92	29.18	32.05	3.49	19.96
Women	31.16	16.04	23.97	19.67	2.33	6.83
Total	16.75	12.46	26.91	26.66	2.99	14.24

Table 10 Frequency of exposure of employees to long working hours per working time bracket (as a %)

Long working hours	Under 29 hours	30–35 hours	36–39 hours	40 hours	40–44 hours	45 hours or more
All the time and almost all the time	22.74	24.66	21.98	25.89	29.03	29.59
Approx. $\frac{3}{4}$ of time	6.25	7.62	7.96	7.72	5.24	6.62
Approx. $\frac{1}{2}$ of time	10.50	11.03	12.33	13.25	10.32	13.75
Approx. $\frac{1}{4}$ of time	10.52	9.04	12.73	11.35	10.49	13.53
Never or almost never	49.70	46.97	43.69	40.84	43.10	35.20
Don't know	0.29	0.68	1.31	0.95	1.82	1.31
Total	100.00	100.00	100.00	100.00	100.00	100.00

Of men working fewer than 29 hours, only 2.3% are managers while 24% are employees. Of those working 45 hours and more, the figures are 15% and 14% respectively.

Women's working time is shorter than that of men in the 15 Member States and in every professional category. In the case of full-time employees, the gap is smaller. Thus, for the average working time indicator, the gap between men and women when all employees, including those who are working part-time, are considered is 7.2 hours. When full-time employees only are taken into account, the gap narrows to 2.9 hours.

In each socio-professional category, even when full-time employees are taken into account, men work much longer hours than women. The discrepancy varies from a minimum of 0.9 hours for employees to a maximum of 4.3 hours for middle managers. It is also considerable (3.3 hours) for service/sales employees (Table 8).

There is also a gap between the working time of men and women in every country, even when full-time employees only are taken into account (Table 6). It ranges from a minimum of 1.1 hours in Sweden to a maximum of 4.4 hours in Ireland.

Even when the effect of part-time work is cancelled out, women work fewer hours than men regardless of socio-professional category and of country.

Older workers' hours of work

One way of coping with the problems encountered by ageing workers could be to reduce their working time. Is this happening? The survey figures do not show any clear correlation between age and working time. The breakdown of employees into working time brackets is not affected by the age variable. In each age group more or less the same proportion of employees works 45 hours and more. Only employees of under 24 years of age are less affected by long working hours (Table 30). The fact that age has little impact on working time can also be seen in relation to average working time. There is no significant difference in average working time between the 25–34 years, 35–44 years, 45–54 years and 55–64 years age groups. All are between 36.5 and 37.1 hours. The over-65s certainly work fewer hours, 33.7, but this has to do with the large proportion (36%) of them working

part-time. When the part-time effect is cancelled out, the average working time of full-time employees is not affected much by age. In fact, employees over 65 years of age work the longest (41) hours (Table 31). However, this statistic is of little significance because of the low numbers in this category. Suffice to say that working time does not decrease with age. Older employees do not work shorter hours than younger ones, irrespective of the indicator taken into account: i.e., average time or breakdown by working time bracket. There is, perhaps, a case for targeted working time reduction measures.

Employees working long working hours

We have pointed out that long working hours, in particular 45 hours or more, affect a large proportion of employees. Almost 17% of full-time employees are affected by these working time levels, hence 14.2% of all employees. Because of the potential risks of long working hours, it is advisable to concentrate closely on the characteristics of the employees concerned.

Men are more exposed to long working hours. Twenty per cent of men work 45 hours or more compared with just under 7% of women (Table 9). Three countries have higher rather than lower proportions of employees working longer hours (45 hours and more), Spain (19%), Portugal (20%) and the United Kingdom (20%) – see Table 6. Managers are particularly affected by long working hours, with 39.4% of them working 45 hours or more per week. Moreover, 16% of middle managers and 17% of agricultural workers work long hours, and they include people of all ages, including the oldest. A modal working time can more or less be associated with each socio-professional category: 45 hours and over for senior managers, 36–39 hours for technicians and office workers, 40 hours for all labouring categories, and 29 hours and under for services and sales employees and for middle managers. It must be noted that the proportion of teachers is partly responsible for the concentration in this last category.

The highest proportions of employees working long hours are concentrated in private companies where 16.5% of employees work 45 hours and more compared with only 8.6% of public enterprise employees (Table 33). Several sectors are characterised by a high proportion (over 20%) of employees working 45 hours and more: the agricultural sector, fishing, forestry work (22.5%), mining (22.5%), construction (21%), hotel and catering sector (21.6%), overland transport (23.4%) and maritime and air transport (25.3%) – see Table 34. Most sectors show wide variations in terms of the working time profile of employees, with some sectors showing particularly wide differences. Such sectors include agriculture, fishing, forestry, the agri-food industry, the printing sector, the wholesale and retail trade, transport and real estate. Other sectors stand out because of the high concentration and marked modal working times: mining, textiles and leather, furnishing and construction (a large proportion of workers working 40 hours), electricity, water and gas companies, post and telecommunications and financial brokerage (modal time, 36–39 hours). Lastly, in some sectors short working hours are highly represented, with the under-29 hours bracket being the modal bracket in hotels and restaurants (bimodal profile with peaks at both extremes), education, health and social work, personal care and other social services and domestic work.

Men, senior managers, private companies and certain sectors such as the primary sector, construction, hotel and restaurants and transport are more affected by long working hours (45 hours or more).

Time devoted to work

To measure the extent of time actually devoted to professional work, travelling times from the home to the place of work must be added to actual working time. The questionnaire contains a question on the time in minutes of everyday travel or commuting. Over half of all employees spend between a quarter of an hour and three-quarters of an hour each day commuting. One quarter of employees spend one hour or more commuting (Table 11).

Table 11 Breakdown of employees in terms of daily commuting (as a %)

Less than 15 minutes	17.4
Between 15 and 29 minutes	23.7
Between 30 and 44 minutes	28.5
Between 45 and 59 minutes	5.3
Between one hour and one-and-a-half hours	15.8
Over an hour-and-a-half	9.3

It might be assumed, *a priori*, that short commuting times would be associated with long working times and vice-versa, one compensating for the other. However, this is not the case, as can be seen when both times are compared. On the contrary, commuting times tend to increase with working times. The correlation between the two is not very marked, but it does exist, particularly at the two extremes. The 25% of employees who work 29 hours or less have a daily commuting time of under 15 minutes, whereas this is the case for only 15% of all employees. At the other extreme, 12% of employees working over 40 hours have a commuting time of over 90 minutes (9.6% of all employees in this case). Thus long working hours frequently go hand in hand with long commuting times.

Table 12 Breakdown of employees according to estimated weekly time taken up by work (as a %)

Under 20 hours	6.9
20–29 hours 59 minutes	9.0
30–39 hours 59 minutes	23.0
40–40 hours 59 minutes	9.8
41–41 hours 59 minutes	9.2
42–42 hours 59 minutes	8.1
43–44 hours 59 minutes	9.0
45–47 hours 59 minutes	10.2
48–54 hours 59 minutes	9.1
55 hours and more	5.7

We calculated weekly time devoted to work by adding travelling times to working times. In producing this calculation, we had to establish a hypothesis regarding the number of days worked. We assumed that each bracket of nine hours of work per week corresponded to one day of work. On this basis we obtained an estimated time devoted to work. According to this estimation, almost 16% of employees devote less than 30 hours a week to work, 23% devote between 30 and 40 hours, while 25% devote 45 or more hours (Table 13).

Table 13 Average time devoted to work, by socio-professional category (in hours per week)

Senior managers	47.8
Middle managers	38.4
Technicians/engineers	40.0
Employees	37.7
Sales	36.1
Agricultural workers and fishermen	42.7
Craft workers	42.8
Industrial workers	42.8
Labourers	35.2
Military	44.6
Total employees	39.6

With respect to all employees, the average time devoted to work is estimated to be 39.6 hours (42.9 hours for men and 35.4 hours for women). For full-time employees, the figures are 43 hours, 43.9 hours and 41.2 hours respectively. There are considerable differences between the socio-professional categories. The time devoted to work by managers is 47.8 hours, while for labourers it is 35.2 hours (Table 13).

As we have seen above, one quarter of employees devote at least one hour per day to commuting. The average weekly time devoted to work by all employees (working time + commuting time) is 39.6 hours (43 hours for full-time employees).

Trends in working hours between 1995 and 2000

The *Third European Survey on Working Conditions* conducted in 2000 contained several questions that were identical to ones in the 1995 survey, notably concerning working time, thus permitting the measurement of the trend in working times and time schedules. A comparison of the results shows a reduction in average working time and relative stability in of atypical time schedules.

From the figures in the survey, working time can be approached in two complementary ways: either a breakdown into classes of working times, or an indicator of average working time. The first approach provides a picture of the breakdown of working times, in particular their spread, and enables countries, socio-professional categories, gender, etc. to be compared. The second approach is more deductive and provides an average value involving an indication of the working time of all employees in a particular category.

A comparison of these two approaches in the end provides us with a global view of the breakdown of working times and an indication of the average working time, enabling employees to be situated and compared according to different criteria. We will now focus on three of them that we consider to be particularly significant: country, socio-professional category and gender. Lastly, the importance of part-time work must be taken into account, and the figures relating to all employees and those confined to full-time employees must be distinguished.

There has been a considerable shift as regards the breakdown of employees per bracket of working time between 1995 and 2000 (Table 1). The proportion of employees working fewer than 35 hours has increased quite considerably, more so for women than for men. At the other extreme, the number of employees working long hours (45 hours and more) has fallen by almost two percentage points (from 16.1 to 14.2%). However, the number of employees working 40 hours has risen. It is probable that this increase is a result of the reduction of the working time of some employees who had been working more than 40 hours.

This trend is reflected in average working times, which fell between 1995 and 2000. For all categories of employees, the average weekly working time fell by one hour between 1995 and 2000, from 37.7 to 36.7 hours.

It would have been interesting to examine the trend in working time for employees working full-time. Unfortunately no question was put that would enable the identification of full-time employees until 2000. To study this trend, however, we took 31 hours as the threshold for full-time work and designated employees working fewer hours than this as working part-time. In fact, some employees working fewer than 31 hours are full-time, while conversely but to a lesser extent, some working more than 31 hours declare themselves to be part-time. The average working time of full-time employees in 2000 was 39.9 hours, while that of employees working over 30 hours per week was 40.4 hours.

This approach increases the average time for employees who regard themselves as full-time, but it means that the trend in working times for this category of employees can be measured. Between 1995 and 2000, the average working time of employees working over 30 hours per week fell by 0.8 hours, from 41.2 hours to 40.4 hours.

Because of the lower proportion of employees working more than 40 hours and the increase in the percentage of those working 29 hours and less, the average working time of all employees fell by one hour between 1995 and 2000.

The working time of the self-employed

Between 1995 and 2000, there was a reduction in the weekly working time of the self-employed, as there was in that of employees (2.6 hours less). It fell from 47.1 hours in 1995 to 44.5 hours in 2000 (see Table 14). This reduction is more marked for women (3.2 hours) than for men (2.2 hours).

Table 14 Trend in average working time of the self-employed between 1995 and 2000 (hours per week)

Year	Total		Men		Women	
	1995	2000	1995	2000	1995	2000
Working time	47.07	44.45	49.11	46.86	43.01	39.80

Table 15 Average working time of the self-employed by country in 2000 (hours per week)

Belgium	49.77
Denmark	43.28
Germany	44.29
Greece	49.01
Spain	47.76
France	49.41
Ireland	50.07
Italy	42.63
Luxembourg	58.39
Netherlands	34.30
Austria	50.47
Portugal	47.89
Finland	47.00
Sweden	41.33
United Kingdom	41.28
Total	44.45

Table 16 Average working time of the self-employed and employees in 2000 (hours per week)

	Total	Men	Women
Self-employed	44.45	46.86	39.80
Employees	36.74	39.99	32.53

Table 15 reveals considerable discrepancies. In the Netherlands, the working hours of the self-employed are very short, 34.3. The longest hours, over 58, are in Luxembourg. This considerable difference obviously relates to different rules governing self-employment. Note the relatively short working time for the self-employed in the United Kingdom, 41.3 hours, lower than the European average and different to the figures for employees. This is probably related to the special status of some self-employed workers in this country, whose status is close to that of employment. The self-employed generally have considerably longer working hours than employees. The figures in the *Third European Survey* do not change this finding. The discrepancy is almost 8 hours per week (44.45 hours for the self-employed compared with 36.7 hours for employees). The difference is a little less for men: (46.9 and 40 hours) than for women (39.8 and 35.5 hours). The working time of self-employed women is considerably shorter than that of men, with the gap between them being almost the same as for employees (Table 16).

These discrepancies between employees and the self-employed should be interpreted with care as the differences in status affect the nature of their work and working time. The working time of the self-employed is not set as rigorously as that of employees, who are in a subordinate situation, whereas the self-employed generally determine their own working time. Exact comparisons are therefore not possible.

The working time of the self-employed decreased on average by 2.6 hours between 1995 and 2000. However it still remains very long, 44.5 hours, with considerable discrepancies between countries, reflecting significant differences in status.

Organisation of working time

2

Extent and characteristics of atypical time schedules

Industrial work has led to the development of time schedules and specific work rhythms, different from so-called normal schedules: 5 working days of 7 or 8 hours, starting between 7.00 and 9.00 am, ending between 4.00 and 6.00 pm and with a midday break lasting from 45 to 90 minutes. These atypical industrial schedules consist of work in teams, fixed or alternating, involving shift work in the evenings or at night, night-work and weekend work. Some service sector jobs activities, notably personal services and sales, involve shift work either in the evening or at the weekend. In addition, flexible working times have led to a diversification of work rhythms and work schedules which change more or less frequently, leading to irregular hours and schedules. The *Third European Survey on Working Conditions* takes partial account of these different atypical working times.

Table 17 Percentage of employees working at night in terms of number of nights worked

Number of nights worked within a month	Years	
	1995	2000
None	82.7	81.6
Between 1 and 4 nights	5.1	6.6
Between 5 and 9 nights	6.1	6.4
Between 10 and 14 nights	2.8	2.5
15 nights or more	3.3	2.7

Table 18 Percentage of employees working Saturdays in terms of number of Saturdays worked

Number of Saturdays worked within one month	Years	
	1995	2000
None	51.6	52.8
1 Saturday	11.1	10.3
2 Saturdays	14.4	15.4
3 Saturdays	5.0	4.8
4 Saturdays or more	17.8	16.6

Table 19 Percentage of employees working Sundays in terms of number of Sundays worked

Number of Sundays worked within one month	Years	
	1995	2000
None	74.8	76.1
1 Sunday	7.6	6.3
2 Sundays	9.2	9.4
3 Sundays	2.8	3.1
4 Sundays or more	5.6	5.1

Table 20 Percentage of employees who report, in terms of weekly time devoted to work

Weekly time devoted to work	that their health or safety is threatened by their work	that their work is the cause of their overall fatigue
Under 20 hours	17.2	13.0
20–29 hours 59 minutes	19.6	19.5
30–30 hours 59 minutes	23.2	18.4
40–40 hours 59 minutes	27.0	21.6
41–41 hours 59 minutes	25.7	19.3
42–42 hours 59 minutes	29.0	22.8
43–44 hours 59 minutes	26.1	24.1
45–47 hours 59 minutes	33.2	25.7
48–54 hours 59 minutes	34.4	29.1
55 hours or more	35.8	36.3

Table 21 Distribution of employees in each age bracket in terms of category of working time (as a %)

Age brackets	29 hours or less	30–35 hours	36–39 hours	40 hours	40–44 hours	45 hours or more
15–24 years	19.6	11.18	26.0	29.5	3.2	10.5
25–34 years	16.2	12.0	27.3	27.8	2.9	13.7
35–34 years	16.0	12.7	27.6	26.2	3.0	14.5
45–54 years	15.1	14.0	27.7	25.0	2.6	15.6
55–64 years	18.6	11.7	24.5	25.4	4.0	15.8
65 years and over	50.0	3.5	2.9	9.1	1.0	33.4
Total	16.7	12.5	26.9	26.7	3.0	23.4

Table 22 Average working time by age bracket (hours per week)

Age brackets	Total employees	Full-time employees only
15–24 years	35.1	39.7
25–34 years	37.0	40.0
35–44 years	37.1	39.9
45–54 years	37.1	39.5
55–64 years	36.5	39.8
65 years or over	33.7	41.0
Total	36.7	39.9

Night-work affects 19% of employees, one-third of whom work between one and four nights per month, another third between five and nine nights per month and another third, 10 nights or more. Evening work, i.e., work between 6.00 pm and 10.00 pm, is more widespread and affects more than two in every five employees (43%). A little over 10% of employees work at least 15 evenings per month. Almost one in every two employees (47%) works at least one Saturday per month, with 17% working every Saturday (Table 19). Sunday work is less frequent, and affects fewer than one

quarter of employees (24%). Five per cent work every Sunday (Table 20). Almost 30% of employees work for more than 10 hours at least one day every month, with 50% working less than five such days.

Table 23 Working time according to frequency of high speed work

		Weekly working time (in hours)	
		Full-time	Full- and part-time
High speed	All the time	39.9	37.0
	Almost all the time	40.6	37.6
	Approx. $\frac{3}{4}$ of the time	39.7	37.1
	Approx. $\frac{1}{2}$ of the time	40.7	37.6
	Approx. $\frac{1}{4}$ of the time	40.3	37.7
	Almost never	39.2	36.2
	Never	39.4	35.5
Total		39.9	36.7

Table 24 Working time according to frequency of working to tight deadlines

		Weekly working time (in hours)	
		Full-time	Full-time and part-time
Working to tight deadlines	All the time	41.3	38.6
	Almost all the time	40.6	38.4
	Approx. $\frac{3}{4}$ of the time	40.0	37.8
	Approx. $\frac{1}{2}$ of the time	40.3	37.8
	Approx. $\frac{1}{4}$ of the time	40.2	37.7
	Almost never	39.0	35.9
	Never	38.7	33.7
Total		39.9	36.7

Table 25 Working time according to lack of time to complete work

		Weekly working time (in hours)	
		Full-time	Full-time and part-time
Lack of time to complete work	Yes	41.1	38.6
	No	39.5	36.2
Total		39.9	36.7

Table 26 Intensity of work according to working time (full-time and part-time)

Proportion of employees working:	Weekly working hours						total
	<30 h	31–35 h	36–39 h	40 h	41–49 h	>=50 h	
Always or almost always at high speed	22.7%	24.7%	22.0%	25.9%	28.8%	30.3%	24.8%
Always or almost always to tight deadlines	22.0%	27.4%	28.0%	30.5%	35.4%	42.4%	29.5%
Lack of time to complete work	16.9%	23.1%	21.7%	19.1%	27.6%	34.6%	22.0%

Table 27 Intensity of work in full-time and part-time jobs

Proportion of employees working:	Part-time	Full-time	Total
Always or almost always at high speed	22.3%	25.3%	24.8%
Always or almost always to tight deadlines	23.1%	30.8%	29.5%
Lack of time to complete work	18.3%	22.7%	22.0%

Table 28 Effects of working time and part-time work on the intensity of work (logit models without structural variables)

Variables explained	Always or almost always at high speed		Always or almost always to tight deadlines		Lack of time to complete work	
	Parameter estimator	Standard gap	Parameter estimator	Standard gap	Parameter estimator	Standard gap
Weekly working hours						
< 30 h	-0.049	0.078	-0.385	0.077	-0.15	0.086
30–35 h	-0.035	0.061	-0.134	0.059	0.239	0.064
36–39 h	-0.216	0.048	-0.12	0.045	0.156	0.051
40 h	reference		reference		reference	
41–49 h	0.147	0.064	0.222	0.061	0.479	0.067
< = 50 h	0.217	0.066	0.519	0.062	0.806	0.066
Full-time and part-time work						
Part-time	-0.156	0.072	-0.073	0.07	-0.002	0.076
Full-time	reference		reference		reference	

NB: statistically significant coefficients to 5% are shown in bold

Table 29 Effects of working time and part-time work on intensity of work (logit models with structural variables)

Variables explained	Always or almost always at high speed		Always or almost always to tight deadlines		Lack of time to complete work	
	Parameter estimator	Standard gap	Parameter estimator	Standard gap	Parameter estimator	Standard gap
Weekly working hours						
< 30 h	0.118	0.087	-0.315	0.087	-0.237	0.092
30–35 h	0.004	0.066	-0.172	0.065	0.112	0.069
36–39 h	-0.218	0.052	-0.241	0.05	0.005	0.055
40 h	reference		reference		reference	
41–49 h	0.236	0.068	0.14	0.066	0.471	0.07
< = 50 h	0.383	0.071	0.41	0.068	0.842	0.071
Full-time and part-time work						
Part-time	-0.357	0.08	-0.083	0.078	-0.032	0.081
Full-time	reference		reference		reference	

NB: statistically significant coefficients to 5% are shown in bold

Table 30 Breakdown of employees for each age bracket according to working time categories (as a %)

Age brackets	29 hours or less	30–35 hours	36–39 hours	40 hours	40–44 hours	45 hours or more
15–24 yrs	19.6	11.18	26.0	29.5	3.2	10.5
25–34 yrs	16.2	12.0	27.3	27.8	2.9	13.7
35–44 yrs	16.0	12.7	27.6	26.2	3.0	14.5
45–54 yrs	15.1	14.0	27.7	25.0	2.6	15.6
55–64 yrs	18.6	11.7	24.5	25.4	4.0	15.8
65 yrs or over	50.0	3.5	2.9	9.1	1.0	33.4
Total	16.7	12.5	26.9	26.7	3.0	23.4

Table 31 Average working times of employees according to age brackets (hours per week)

Age brackets	Total employees	Full-time employees
15–24 years	35.1	39.7
25–34 years	37.0	40.0
35–44 years	37.1	39.9
45–54 years	37.1	39.5
55–64 years	36.5	39.8
65 years and over	33.7	41.0
Total	36.7	39.9

Table 32 Percentage of part-time employees by age

	Total	Men	Women
15–24 years	20.2	11.4	30.3
25–34 years	16.7	4.4	32.5
35–44 years	17.5	3.8	35.2
45–54 years	15.8	3.2	32.6
55–64 years	19.5	8.0	36.8
65 years and over	48.7	30.8	83.5
Total	17.6	5.3	33.5

Table 33 Breakdown of employees by working time bracket, by type of employer (as a %)

	29 hours or less	30–35 hours	36–39 hours	40 hours	41–44 hours	45 hours or more
Public administration	22.0	14.1	33.7	19.3	1.6	9.2
Public enterprises	15.5	16.1	35.2	22.5	2.0	8.6
Private enterprises	14.7	11.5	24.1	29.8	3.5	16.4
Others	26.3	13.1	21.8	20.4	3.5	14.9
Total	16.7	12.5	26.9	19.4	3.0	14.2

Time and work: duration of work

Table 34 Breakdown of employees by working time brackets according to sector (as a %)

	29 hours or less	30–35 hours	36–39 hours	40 hours	41–44 hours	45 hours or more
Agriculture, fisheries	11.0	9.7	18.7	33.7	4.5	22.5
Mining	0.4	2.7	19.8	51.5	3.0	22.5
Food processing	16.4	13.3	21.1	28.0	2.6	18.6
Textiles, clothing, leather, footwear	9.0	7.0	25.2	49.0	2.0	7.9
Timber, paper, cardboard	4.1	5.1	32.2	38.9	9.9	9.7
Printing and publishing	16.3	18.2	28.9	20.1	1.4	15.1
Chemicals, plastics	3.1	6.3	38.1	38.3	2.9	11.3
Metallurgy, engineering	4.3	10.7	29.3	36.9	3.8	15.0
Electrical and electronic manuf.	7.3	17.2	30.3	31.8	4.5	8.9
Manuf. of transport equipment	3.4	13.8	31.8	39.4	0.9	10.7
Miscellaneous industries	6.3	12.2	21.4	42.9	1.8	15.4
Electricity, gas, water	1.3	13.2	45.1	28.2	1.6	10.6
Building	3.3	5.9	24.2	42.7	2.9	21.0
Commerce	23.1	10.6	21.9	23.5	4.4	16.5
Hotels, restaurants	32.9	12.2	9.1	21.6	2.6	21.6
Overland transport	7.6	11.3	26.0	28.7	3.1	23.4
Other transport	10.5	9.9	22.4	27.8	4.1	25.3
Post and telecommunications	12.4	11.8	33.8	22.3	5.7	13.9
Financial activities	12.6	15.5	32.0	24.4	3.8	11.7
Services to companies	14.9	14.9	24.8	23.1	4.1	18.2
Public administration	13.5	13.5	39.1	23.1	1.5	9.3
Education	35.3	16.9	20.1	14.4	1.1	11.3
Health and social services	26.6	14.6	21.1	20.7	2.5	14.6
Personal services	50.6	15.6	6.0	16.9	0.4	10.5
Domestic services	9.8	10.9	21.9	24.9	8.0	24.5

Table 35 Everyday commuting by employees (in minutes) by working time category (as a %)

Daily commuting times	29 hours	30–35 hours	36–39 hours	40 hours	40–44 hours	45 hours or more	All employees
Under 15 minutes	24.6	16.5	14.2	15.7	11.0	16.4	15.6
15–29 minutes	20.0	23.9	23.1	21.8	22.2	20.7	22.2
30–44 minutes	27.8	29.7	30.7	27.5	29.8	23.6	28.2
45–59 minutes	4.1	4.0	5.5	5.4	4.3	4.9	5.1
1 hour – 1 hour 29 minutes	11.5	15.2	16.2	15.9	19.0	16.5	16.0
Over 1 hour 30 minutes	7.8	8.7	9.1	9.7	12.2	11.0	9.6
Unspecified	4.2	2.0	1.2	4.0	1.5	6.8	3.3
Total	100	100	100	100	100	100	100

Table 36 Breakdown of employees by time actually devoted to work (as a %)

Under 20 hours	6.9
20–29 hours 59 minutes	9.0
30–30 hours 59 minutes	23.0
40–40 hours 59 minutes	9.8
41–41 hours 59 minutes	9.2
42–42 hours 59 minutes	8.1
43–44 hours 59 minutes	9.0
45–47 hours 59 minutes	10.2
48–54 hours 59 minutes	9.1
55 hours or more	5.7

Shift work involves 22% of employees. This concept covers various types of practices. It can consist of fixed shift work, with the employee always working the same schedules – morning, afternoon, or night, or work periods alternating with two, three, four or more rotas. Two types of shift work are particularly frequent: morning/afternoon alternation of the 2x8 type and morning/afternoon/night alternation of the 3x8 or 4x8 type, each one of which involves approximately one-third of shift workers (Table 44).

For 76% of employees, the schedule does not change within the month, while for 2.7% it changes once, for 5% it changes twice, for 2.6% it changes three times, and for 4.7% it changes four times, which means weekly changes for most shift workers. Lastly, for 7% of employees the work schedule changes five times or more per month (Table 43). Unfortunately the survey does not contain figures for semi-continuous (3x8) and continuous (4x8 or 5x8) work.

A series of questions explores the regularity of time patterns. Thirty-seven per cent of employees do not work the same number of hours per day. However this irregularity is limited for 58% of them, who work the same number of days per week. Approximately 22% of employees do not work the same number of days per week and 16% do not work either the same number of hours per day or the same number of days per week. One question asks whether work schedules are fixed. For 71% of employees work schedules are fixed and hence variable for the remaining 29%, but it is not known whether this variability is imposed by employers or chosen by employees, which would obviously completely change the nature of the phenomenon. Almost 90% of employees work during the day, which does not mean that they do not work at night or in the evening occasionally (Table 44). Forty-seven per cent of employees, almost one out of every two, have completely regular work schedules, in other words fixed day schedules comprising the same number of hours per day and the same number of days worked in the week. All others are affected to differing degrees by some form of irregularity that is to some extent disruptive. To assess the disruptive nature of the irregularity, however, one decisive element relating to who decides on the variations is missing. The fact that an employee can choose to vary his schedules and working days does not have the same implications for living conditions and health as a situation in which changes are imposed because of the demands of work.

The irregularity of work schedules can also take the form of one or more changes per month. Companies vary work schedules depending on the circumstances (e.g., increased demand) in order

to obtain greater labour flexibility. Almost one quarter (24%) of employees are affected by such schedule changes in the course of a month. Seven per cent of employees can expect more than five changes per month (Table 43).

Atypical work takes many forms: shift work, night-work and evening work, weekend work and irregular schedules, and irregularity of days and times worked. It merits attention because of the extent to which it exists. Twenty-two per cent of employees work shifts, one-third of whom work two alternating shifts and one-third of whom work three or more alternating shifts. Nineteen per cent of employees work at least one night per month, 47% at least one Saturday and 24% at least one Sunday. Irregular work schedules affect 37% of employees who do not work the same number of hours each day, while 22% do not work the same number of days per week. In addition, the work schedules of 24% of employees change in the course of the month.

Table 37 Average time devoted to work (hours per week)

	Men	Women	Total
Full-time employees	43.9	41.2	43.0
Total employees	42.9	35.4	39.6
Part-time employees	28.5	23.7	30.0

Table 38 Breakdown of employees by number of evenings worked in the month (as a %)

	Men	Women	Total
None	52.5	62.3	56.8
Between 1 and 4 evenings	13.4	11.8	12.7
Between 5 and 9 evenings	12.8	9.9	11.5
Between 10 and 14 evenings	8.9	7.3	8.2
15 evenings or more	12.0	8.4	10.4

Table 39 Breakdown of employees by number of nights worked in the month (as a %)

	Men	Women	Total
None	76.0	88.0	81.2
Between 1 and 4 nights	8.1	4.7	6.6
Between 5 and 9 nights	8.2	4.1	6.4
Between 10 and 14 nights	3.3	1.5	2.5
15 nights or more	3.8	1.3	2.7

Table 40 Breakdown of employees by number of Sundays worked in the month (as a %)

	Men	Women	Total
None	75.4	76.4	75.8
1 Sunday	7.3	5.0	6.3
2 Sundays	9.1	9.9	9.4
3 Sundays	2.8	3.4	3.1
4 Sundays or more	5.5	5.3	5.4

Table 41 Breakdown of employees by number of Saturdays worked in the month (as a %)

	Men	Women	Total
None	51.2	54.5	52.6
1 Saturday	12.0	8.0	10.3
2 Saturdays	15.5	15.2	15.4
3 Saturdays	4.9	4.8	4.8
4 Saturdays or more	16.4	17.5	16.9

Table 42 Breakdown of employees by number of days of over 10 hours worked in the month (as a %)

	Men	Women	Total
None	63.2	80.8	70.8
Between 1 and 4 days	17.3	10.6	14.4
Between 5 and 9 days	7.3	3.8	5.7
Between 10 and 14 days	4.2	1.8	3.1
15 or more	7.3	2.5	5.2

Table 43 Breakdown of employees by number of schedule changes in the month according to gender (as a %)

	Men	Women	Total
None	75.0	77.6	76.1
1 change	2.5	3.0	2.7
2 changes	4.5	5.8	5.1
3 changes	2.5	2.7	2.6
4 changes	5.0	4.3	4.7
5 changes	2.1	1.5	1.8
Over 5 changes	8.4	5.2	7.0

Table 44 Percentage of employees working

	Men	Women	Total
A different number of hours per day	37.4	32.6	36.6
A different number of days per week	23.3	20.2	21.9
Variable schedules	30.1	25.8	28.2
Evening or night	10.7	9.3	10.1
In shift work	23.0	20.7	22.0
In two alternating shifts	9.1	10.1	9.5
In three or more alternating shifts	8.8	5.0	7.2

Atypical time schedules and women

Women and men are not subject to atypical schedules to the same degree. Men are, generally speaking, more affected than women, but the gender gap depends on the schedules. The biggest gap concerns occasional night-work, which affects 12% of women, but twice as many (24%) men, (Table 39). The gap is less for days of over 10 hours. They affect 37% of men and 19% of women (Table 42). The gap is considerably less for night-work, 47% of men and 38% of women (Table 38). The gap narrows further for Saturday work, which affects 48% of men and 45% of women (Table 41) and again for Sunday work, 24% of men and 23% of women (Table 40). The gaps are also narrow as regards the variability of the number of hours worked (29% of men and 27% of women), the number of days worked per week (24% of men and 21% of women), work schedules (31% of men and 27% of women), evening or night work (13% of men and 11% of women) (Table 44) and time schedule changes within a month (25% of men and 22% of women) (Table 43). For shift work (all types), a similar proportion of women and men are affected (21% and 23% respectively). More women work in alternating morning/afternoon shifts (9% compared with 7%), but fewer work in three alternating shifts, including a night shift (5% compared with 9%) (Table 44). While more men than women have atypical schedules, the gap is significant only for night-work, from which women have traditionally been excluded, and for long working days. However, the gaps are less important for schedules consisting of two alternating shifts and new atypical schedules linked to flexibility, e.g., variable schedules, schedule changes and changes of working days, and weekend work.

Women are less affected than men by atypical schedules. However, the gap between them is considerable for night-work, work consisting of three or more alternating shifts and long days, which characterise industrial work. There is little difference for other atypical forms, irregular schedules and weekend work.

Atypical time schedules and older employees

Atypical schedules introduce constraints that can be a source of additional fatigue and are therefore more harmful for older employees. Consequently they should be spared those schedules that disrupt sleep, for instance night-work and shift work, and in fact it can be seen that the oldest workers are proportionately less affected by most atypical schedules. However there is one puzzling anomaly relating to employees of 65 years and over. Night-work affects only 12% of employees of between 55 and 64 years, but 13% of employees of 65 and over, whereas for those between 35 and 44 years the rate is 21% (Table 46). In correlation to this, there is a higher proportion of employees in the two highest age brackets working during the day (91% and 93%). Less shift work is worked in these categories (14% for 55–64 year-olds and 3% for 65 year-olds and over compared with 24% for 35–44 year-olds). The proportion of older employees working three alternating shifts is particularly low, 3% for 55 to 64 year-olds and almost zero for 65 year-olds or older people (Table 51).

Table 45 Breakdown of employees by number of evenings worked in the month, according to age (as a %)

	15–24 years	25–34 years	35–44 years	45–54 years	55–64 years	65 years or over	Total
None	56.1	54.5	56.9	57.1	64.4	45.2	56.8
Between 1 and 4 evenings	12.3	12.7	12.5	13.8	11.0	8.4	12.7
Between 5 and 9 evenings	10.4	11.8	12.3	11.7	9.5	14.3	11.5
Between 10 and 14 evenings	8.1	8.8	8.7	7.6	6.8	7.1	8.2
15 evenings or more	12.4	11.9	9.2	9.5	8.0	24.7	10.4

Table 46 Breakdown of employees by number of nights worked in a month, according to age (as a %)

	15–24 years	25–34 years	35–44 years	45–54 years	55–64 years	65 years or over	Total
None	81.9	79.5	79.1	82.7	88.1	86.8	81.2
Between 1 and 4 nights	5.1	7.9	7.4	5.9	4.5	1.9	6.6
Between 5 and 9 nights	6.8	6.5	7.3	6.4	3.0	10.8	6.4
Between 10 and 14 nights	2.7	3.0	2.8	2.4	2.3	0.0	2.5
15 nights or more	2.7	3.0	2.8	2.4	2.3	0.0	2.7

Table 47 Breakdown of employees by number of Sundays worked in a month, according to age (as a %)

	15–24 years	25–34 years	35–44 years	45–54 years	55–64 years	65 years or over	Total
None	73.8	74.7	75.0	76.8	83.1	66.5	75.8
1 Sunday	6.2	7.1	6.0	6.4	3.9	10.6	6.3
2 Sundays	8.6	9.4	11.0	9.0	6.8	10.9	9.4
3 Sundays	3.7	3.2	3.6	2.8	1.0	0.7	3.1
4 Sundays or more	7.7	5.5	4.5	5.0	5.1	1.2	5.4

Table 48 Breakdown of employees by number of Saturdays worked in a month, according to age (as a %)

	15–24 years	25–34 years	35–44 years	45–54 years	55–64 years	65 years or over	Total
None	46.6	51.0	52.6	55.5	60.6	35.6	52.6
1 Saturday	8.1	11.0	11.2	9.9	9.0	16.6	10.3
2 Saturdays	15.4	15.6	16.9	14.1	13.0	19.0	15.4
3 Saturdays	4.8	5.4	5.1	4.9	2.0	8.1	4.8
4 Saturdays or more	25.1	17.0	14.2	15.6	15.4	20.7	16.9

Table 49 Breakdown of employees by number of days of over 10 hours worked in a month, according to age (as a %)

	15–24 years	25–34 years	35–44 years	45–54 years	55–64 years	65 years or over	Total
None	74.0	69.6	69.3	71.5	73.2	69.9	70.8
Between 1 and 4 days	12.4	15.6	15.1	14.5	11.5	5.4	14.4
Between 5 and 9 days	5.4	5.1	6.2	5.7	6.7	13.9	5.7
Between 10 and 14 days	3.0	3.2	3.1	3.1	3.5	2.3	3.1
15 or more days	4.4	6.0	5.5	4.6	4.3	8.3	5.2

Table 50 Breakdown of employees by number of changes of schedule in the month, according to age (as a %)

	15–24 years	25–34 years	35–44 years	45–54 years	55–64 years	65 years or over	Total
No change	76.0	75.5	74.6	77.3	80.7	65.6	76.1
1 change	3.0	3.0	2.6	2.4	2.8	0.7	2.7
2 changes	5.7	4.9	5.2	4.6	5.0	3.9	5.1
3 changes	2.1	2.4	3.4	2.6	1.3	3.9	2.6
4 changes	6.5	5.0	4.1	4.3	3.6	0.7	4.7
5 changes	1.7	2.0	1.8	2.2	0.8	0.3	1.8
More than 5 changes	4.9	7.2	8.2	6.5	5.6	24.8	7.0

Table 51 Breakdown of employees by age, working (as a %)

	15–24 years	25–34 years	35–44 years	45–54 years	55–64 years	65 years and over	Total
a different no. of hours each day	35.8	37.4	38.3	33.1	37.1	63.4	36.6
a different no. of days each week	23.6	22.6	22.4	20.2	18.6	53.0	21.9
variable schedules	26.6	30.2	28.4	26.2	26.4	65.8	28.2
not during the day	13.8	10.7	9.4	9.4	7.1	4.8	10.1
shift work	23.9	23.1	24.1	20.4	14.4	3.2	22.0
2 alternating shifts	10.3	9.6	10.2	9.4	6.7	0.9	9.5
3 or more alternating shifts	6.9	8.0	8.3	6.6	3.1	0.4	7.2

While older workers appear to be shielded from night-work and shift work, the effects of age in terms of irregular schedules, evening and weekend work are more surprising. Relatively speaking, the 55-64 age group is spared from these schedules. Night-work affects only 35% of these employees (Table 45), with the proportion falling to 17% for Sunday work (Table 47), and rising to 40% for Saturday work (Table 48), while it stands at 19% for changes of schedules during the month (Table 50) and 19% for a variation in the number of days worked per week (Table 51), compared with 43%, 25%, 47% and 25% respectively for the 35–44 age group. The surprising factor concerns the over-65s. Fifty-five per cent work in the evening, 33% work on Sundays, 64% on Saturdays, 34% change schedules during the month, with 25% changing five times and more, and 56% do not work the same number of days per week. As regards night-work and shift work,

employees over 65 years of age appear to be most exposed to atypical schedules in the services sector. This obviously reflects the fact that they are employed in work deemed appropriate to their age. Unfortunately, because of the small numbers in this group, more thorough statistical processing is impossible. However, these figures should draw attention to the working conditions of employees who cannot retire at 65 years of age.

Employees in the 55-64 age group are affected to a lesser extent than others by atypical schedules, for instance night-work, shift work, weekend work and irregular schedules. Employees of 65 years and over are, however, more affected by atypical schedules, with the exception of night-work and shift work. They are most affected by atypical schedules specific to the services sector, weekend work and irregular schedules.

The socio-professional categories most affected

The three socio-professional categories most affected by night work are technicians (22%), sales/services employees (23%) and industrial workers (36%) (Table 53). Evening work mainly involves senior management (53%), middle management (51%), services/sales employees (55%) and industrial workers (56%) (Table 52). A higher proportion of services/sales employees work on Sundays (42%), as well as, to a lesser extent, technicians (30%) (Table 54). The employees most affected by Saturday work are services/sales employees, 74% of whom work at least one Saturday per month, with 44% working four or five Saturdays per month (Table 55). Working days of over 10 hours affect senior management (54%) and, to a lesser degree, middle managers (39%) (Table 56). Variations in the number of hours worked affect services/sales employees (30%) and industrial workers (29%) (Table 57). Senior management, middle managers and agricultural and fisheries workers are less likely to have fixed schedules, 52%, 60% and 65% respectively.

Shift work is very unequally distributed by socio-professional categories. It mainly affects industrial workers (43%) and, secondly, services employees and sales people (29%), rather than senior management (9%). Work involving three or four alternating shifts and night-work mainly affects industrial workers (18%) (Table 58). On the basis of these figures, it is possible to see the emergence of different profiles for the socio-professional categories. Alternating shift work is the lot of industrial workers, while long working days with variable schedules affect senior management and to a lesser degree middle management, with services/sales employees bearing the brunt of weekend work.

Employees in precarious employment such as those in temporary agency work and fixed-term contracts are generally more exposed than other employees to various disruptions. It might well be expected that they would be affected in larger proportions by atypical schedules, yet there is no significant discrepancy in this respect between temporary employees and other employees. There is certainly a slightly higher number of temporary agency and fixed-term contract employees working shifts (25.3% and 26% respectively compared with 21.8% for permanent employees). Compared with permanent employees, fewer employees on fixed-term contracts work the same number of hours each day (39.2% compared with 36.1%). A larger proportion of temporary agency employees (51.3%) are affected by Saturday work compared with 47.1% of permanent employees.

Table 52 Breakdown of employees by number of evenings worked in the month in terms of professional category (as a %)

	Senior management	Middle management	Technicians	Office staff	Services and sales	Agriculture and fisheries	Craft workers	Industrial workers	Labourers	Total
None	46.8	48.9	52.0	76.2	45.0	72.1	64.3	43.5	65.3	56.8
1-4	16.3	21.0	14.4	9.1	12.5	7.2	10.3	10.7	8.3	12.7
5-9	18.4	11.2	13.9	6.5	13.5	6.9	9.3	17.6	7.5	11.5
10-14	5.9	7.3	10.7	3.0	11.7	0.9	6.5	15.4	7.7	8.2
15 or more	12.4	11.2	8.8	5.1	16.9	11.6	9.1	12.1	10.6	10.4

Table 53 Breakdown of employees by number of nights worked in the month in terms of professional category (as a %)

	Senior management	Middle management	Technicians	Office staff	Services and sales	Agriculture and fisheries	Craft workers	Industrial workers	Labourers	Total
None	80.5	82.7	77.5	94.8	76.6	86.1	83.7	64.3	85.3	81.2
1-4	11.1	8.3	9.8	2.3	5.9	4.1	5.2	8.0	3.6	6.6
5-9	5.4	6.1	8.3	1.5	6.8	2.3	5.1	14.9	5.7	6.4
10-14	1.2	1.5	2.2	0.5	4.6	0.1	2.7	6.6	1.7	25.0
15 or more	1.6	0.9	1.9	0.7	5.5	6.0	2.6	5.4	3.0	2.7

Table 54 Breakdown of employees by number of Sundays worked in the month in terms of professional category (as a %)

	Senior management	Middle management	Technicians	Office staff	Services and sales	Agriculture and fisheries	Craft workers	Industrial workers	Labourers	Total
None	74.0	73.7	69.3	91.4	57.9	79.8	85.5	71.9	79.9	75.8
1	9.3	5.8	8.2	2.3	7.7	7.7	5.0	8.2	5.4	6.3
2	4.9	9.3	15.0	3.4	15.1	7.0	4.4	13.0	9.2	9.4
3	4.3	2.5	4.9	1.1	6.2	0.2	1.3	3.4	2.3	3.1
4 or more	7.5	8.7	2.7	1.9	12.9	5.3	3.8	3.4	3.3	5.4

Table 55 Breakdown of employees by number of Saturdays worked in the month in terms of professional category (as a %)

	Senior management	Middle management	Technicians	Office staff	Services and sales	Agriculture and fisheries	Craft workers	Industrial workers	Labourers	Total
None	51.2	58.4	53.9	70.2	25.7	49.6	55.2	49.5	54.8	52.6
1	12.4	10.8	11.5	7.6	7.6	11.2	11.9	14.0	7.4	10.3
2	11.4	13.3	18.9	8.5	21.8	14.2	14.1	18.9	14.8	15.4
3	5.4	4.0	5.4	2.6	7.7	0.4	3.6	7.3	4.8	4.8
4 or more	19.6	13.4	10.3	11.1	37.4	24.6	15.2	10.3	18.1	16.9

Table 56 Breakdown of employees by number of days of over 10 hours worked in the month in terms of professional category (as a %)

	Senior management	Middle management	Technicians	Office staff	Services and sales	Agriculture and fisheries	Craft workers	Industrial workers	Labourers	Total
None	46.0	61.3	6.6	83.1	74.1	76.5	69.3	67.6	84.6	70.8
1-4	20.6	20.5	18.5	11.0	11.1	11.0	15.7	12.3	7.7	14.4
5-9	10.2	8.1	6.7	2.4	5.7	1.1	6.2	6.0	2.9	5.7
10-14	6.4	4.6	2.9	1.5	3.4	2.6	3.3	3.5	1.5	3.1
15 or over	16.6	5.0	4.7	1.6	4.8	7.1	4.5	9.9	2.8	5.2

Table 57 Breakdown of employees by number of evenings worked in the month in terms of professional category (as a %)

	Senior management	Middle management	Technicians	Office staff	Services and sales	Agriculture and fisheries	Craft workers	Industrial workers	Labourers	Total
None	70.0	72.6	70.8	85.9	72.1	85.4	78.5	71.2	81.0	76.1
1	1.3	3.5	2.9	2.1	2.9	2.1	3.0	2.9	2.6	2.7
2	2.8	4.8	6.1	3.6	7.1	3.6	4.3	6.6	4.4	5.1
3	2.5	2.9	4.3	1.8	2.5	1.5	2.1	2.7	2.1	2.6
4	3.0	4.8	4.9	2.4	7.5	2.5	4.1	6.2	4.5	4.7
5	2.2	2.6	2.0	0.9	1.7	1.0	2.4	1.2	1.6	1.8
Over 5	18.2	8.6	9.1	3.3	6.1	3.8	5.6	9.4	3.7	7.0

Table 58 Breakdown of employees by professional category, working (as a %)

	Senior management	Middle management	Technicians	Office staff	Services and sales	Agriculture and fisheries	Craft workers	Industrial workers	Labourers	Total
a different no. of hours each day	53.5	57.4	43.0	25.1	40.2	28.9	26.8	29.8	27.7	36.6
a different no. of days each week	21.8	22.7	25.8	12.5	28.5	22.4	18.2	27.0	20.9	21.9
variable schedules	45.5	39.3	31.8	21.1	31.5	34.0	19.0	25.3	22.0	28.2
evening or night shift work	6.9	6.3	11.0	4.9	15.3	5.9	8.7	17.5	12.1	10.1
2 alternating shifts	9.7	14.7	25.4	10.5	28.2	7.5	22.2	42.7	23.2	22.0
3 or more alternating shifts	4.8	5.5	9.8	5.3	13.3	3.6	10.6	19.0	9.2	9.5
	2.5	4.5	10.2	1.7	8.2	1.4	6.4	18.0	7.1	7.2

The number of years of service among permanent employees does not reveal any major differences. It must be noted, however, that employees with only a few years' service are slightly more exposed to flexible schedules, changes in the number of hours worked according to the day, and variable schedules. Forty per cent of employees with less than one year's service do not work the same number of hours each day, whereas the figure for those with over two years' service is 35.3%. By the same token, 30.9% of employees with less than one year's service do not work according to fixed schedules compared with 21.3% of those with over two years' service.

The different atypical schedules are not distributed equally among all the socio-professional categories. Night-work and shift work are mainly the preserve of industrial workers; long days and irregular hours affect managers significantly, while weekend work and variations in schedules are the lot of services and sales employees, who are also the most affected by the various atypical schedules, with the exception of shift work.

Unequal distribution of atypical time schedules

An examination of the extent of the different types of atypical schedules in each country shows quite marked disparities depending on the types of schedules. The differences between the countries are slight for night-work. Greece and Finland (25%) and the United Kingdom (22%) have a higher proportion than average (19%) of employees working at night (Table 60). Evening work is more widespread in Spain (61%), the Netherlands (49%), Greece (53%), Finland (57%) and Sweden (54%) (Table 59). Denmark (33%), Greece (33%), the United Kingdom (31%), Finland (35%) and Sweden (36%) have higher rates for Sunday work (Table 61). The highest levels for Saturday work are found in Greece (66%), Italy (69%) and the United Kingdom (51%) (Table 81). Working days of over 10 hours are widespread in Denmark (34%), the Netherlands (37%), the United Kingdom (35%) and above all Finland (48%) and Sweden (46%) (Table 62). Changes of work schedules during the month affect a higher proportion of employees in Germany (35%), Finland (30%) and Sweden (45%) (Table 63). Employees experiencing variations in the numbers of hours worked per day are more numerous proportionally in Denmark (57%), Sweden (47%), the Netherlands (43%), Finland (48%) and Austria (42%). A variation in the number of days worked per week affects a high proportion of employees in Denmark (31%), Finland (27%), Sweden (28%) and Austria (28%). The proportion of employees not working fixed schedules is considerably higher than the average (28%) in five countries: the Netherlands (39%), the United Kingdom (32%), Finland (40%), Sweden (32%) and Austria (36%). The proportion of employees not working day schedules is higher than the average (10%) in Spain (18%), Luxembourg (22%) and Finland (18%) (Table 64).

Time and work: duration of work

Table 59 Breakdown of employees by number of evenings worked in the month according to country (as a %)

	None	1-4	5-9	10-14	15 or more
Belgium	58.0	13.7	11.9	9.8	5.7
Denmark	61.4	19.9	9.5	5.5	3.0
Germany	64.1	9.8	11.6	9.9	4.7
Greece	46.8	7.6	11.1	14.2	18.0
Spain	39.3	6.9	10.1	7.4	36.3
France	58.3	10.7	10.5	8.5	12.0
Ireland	54.6	15.9	12.4	8.1	9.0
Italy	58.8	11.2	11.3	6.3	11.9
Luxembourg	67.7	10.5	8.5	6.0	6.9
Netherlands	51.2	22.9	13.5	6.5	4.1
Austria	62.2	9.8	12.2	9.0	5.3
Portugal	69.6	8.3	3.8	3.9	11.9
Finland	43.0	21.7	17.8	11.4	6.1
Sweden	45.8	27.0	14.7	8.5	4.1
United Kingdom	54.0	16.3	12.8	7.8	8.9
Total	56.8	12.7	11.5	8.2	10.4

Table 60 Breakdown of employees by number of nights worked in the month according to country (as a %)

	None	1-4	5-9	10-14	15 or more
Belgium	80.0	7.0	7.1	2.6	2.2
Denmark	83.6	7.2	4.2	1.8	2.2
Germany	82.7	5.3	7.8	2.6	1.7
Greece	74.7	5.8	8.1	2.8	6.2
Spain	80.3	6.0	6.3	2.8	4.7
France	82.2	6.4	4.9	2.8	3.7
Ireland	80.7	6.3	5.5	3.1	4.5
Italy	83.9	6.9	5.3	1.0	2.3
Luxembourg	84.3	5.2	3.9	2.9	3.4
Netherlands	80.0	9.4	4.7	2.2	1.1
Austria	81.2	5.8	7.2	2.9	1.2
Portugal	83.8	4.2	3.0	2.1	4.2
Finland	75.1	10.6	8.7	2.6	1.7
Sweden	82.3	7.5	5.0	2.5	2.7
United Kingdom	77.9	7.8	7.9	3.3	2.8
Total	81.2	6.6	6.4	2.5	2.7

Table 61 Breakdown of employees by number of Sundays worked in the month according to country (as a %)

	None	1	2	3	4 or more
Belgium	74.7	7.6	11.0	1.8	4.9
Denmark	67.1	13.2	14.1	2.9	2.7
Germany	79.9	4.4	10.0	1.8	3.9
Greece	67.4	4.7	10.8	4.8	12.3
Spain	79.3	5.1	6.5	3.9	5.2
France	77.4	5.1	9.8	3.1	4.6
Ireland	73.4	7.3	11.0	3.8	4.5
Italy	79.3	6.1	7.0	2.3	5.3
Luxembourg	77.1	4.1	10.5	4.2	4.2
Netherlands	73.6	8.9	10.4	2.3	4.8
Austria	76.5	8.0	7.8	2.5	5.1
Portugal	84.1	4.5	4.3	1.6	5.5
Finland	64.8	11.2	12.9	5.1	5.9
Sweden	64.0	13.3	15.4	2.5	4.8
United Kingdom	69.4	7.4	9.8	5.2	8.2
Total	75.8	6.3	9.4	3.1	5.4

Table 62 Breakdown of employees by number of days of over 10 hours worked in the month according to country (as a %)

	None	1-4	5-9	10-14	15 or more
Belgium	74.0	14.1	5.1	2.5	3.3
Denmark	66.2	22.5	5.0	2.9	2.4
Germany	74.2	13.9	5.6	2.6	3.7
Greece	71.6	10.3	4.3	3.3	7.6
Spain	80.2	8.2	4.6	2.3	4.6
France	73.8	11.7	6.1	3.0	4.9
Ireland	67.9	15.1	7.3	4.9	4.8
Italy	71.8	15.7	5.3	2.1	4.1
Luxembourg	75.8	14.9	3.1	2.7	3.4
Netherlands	63.3	21.9	6.2	2.9	2.6
Austria	65.6	15.0	7.1	3.3	6.0
Portugal	81.3	6.2	3.6	1.9	4.5
Finland	54.5	29.3	9.7	4.0	3.6
Sweden	54.5	30.1	9.4	3.3	2.7
United Kingdom	64.6	14.1	5.8	5.2	10.1
Total	70.9	14.4	5.7	3.1	5.2

Time and work: duration of work

Table 63 Breakdown of employees by number of changes of schedule worked in the month per country (as a %)

	None	1	2	3	4	5	Over 5
Belgium	80.5	2.9	4.1	1.7	5.4	0.8	4.6
Denmark	79.4	4.5	4.1	3.1	2.3	1.1	5.3
Germany	65.5	4.6	6.9	5.3	4.1	4.2	9.3
Greece	84.3	3.1	4.0	1.5	1.7	1.0	4.3
Spain	83.8	1.0	3.0	1.8	5.5	0.2	4.6
France	80.0	1.2	3.5	2.3	4.5	1.2	7.2
Ireland	82.0	2.4	4.3	1.5	5.7	0.7	3.4
Italy	81.6	1.0	5.0	1.4	5.0	1.2	4.8
Luxembourg	82.1	2.3	2.9	1.9	4.8	0.5	5.5
Netherlands	83.0	2.8	2.9	1.9	5.2	1.1	3.2
Austria	81.3	1.4	3.1	1.6	4.0	2.0	6.6
Portugal	93.3	0.9	1.9	1.0	2.1	0.3	0.5
Finland	69.8	4.7	67.0	3.6	3.3	4.9	6.6
Sweden	55.2	7.1	11.3	4.4	6.0	4.4	11.5
United Kingdom	76.4	2.9	5.4	0.8	5.5	0.6	8.5
Total	76.1	2.7	5.1	2.6	4.7	1.8	7.0

Table 64 Percentage of employees by country working different types of atypical schedules

	A different no. of hours	A different no. of days	Variable schedules	Non-day	Shift work	Two alternating shifts	Three or more shifts
Belgium	35.5	21.6	23.7	11.8	23.6	10.0	7.0
Denmark	57.2	30.7	27.1	23.8	9.1	2.5	3.6
Germany	38.7	23.8	27.3	4.6	21.8	10.4	8.8
Greece	24.4	16.1	20.4	15.7	24.7	9.4	12.8
Spain	26.5	18.2	22.3	17.6	26.6	8.0	10.6
France	39.3	22.4	29.2	13.5	20.9	9.5	4.6
Ireland	26.9	15.5	24.7	10.9	20.4	8.3	5.1
Italy	31.8	19.6	23.4	8.6	26.3	13.8	7.6
Luxembourg	33.0	22.4	30.0	22.0	17.8	6.3	8.4
Netherlands	42.8	25.3	39.1	5.8	12.5	3.6	7.1
Austria	42.3	28.1	35.7	9.7	15.5	7.1	6.0
Portugal	20.1	10.6	18.6	6.8	10.4	4.1	2.7
Finland	47.6	26.6	39.9	17.9	22.9	11.0	9.4
Sweden	47.1	27.6	32.0	16.9	18.4	8.7	4.7
United Kingdom	36.1	20.9	31.8	10.1	25.2	9.8	6.4
Total	36.6	21.9	28.2	10.1	22.0	9.5	7.2

There are thus differences between the countries regarding the proportions of employees working atypical schedules. However, they cannot be explained by means of just one survey. To understand these characteristics, reference must be made to the historical, social and political contexts in the

different countries. We would therefore caution against jumping to conclusions. The fact that in Finland and Sweden, for example, a combination of several atypical factors affect work schedules does not automatically mean that these countries have poor quality working conditions. The context in which atypical schedules are worked can alleviate or aggravate their consequences. Given the lack of knowledge about the context and about other aspects of working conditions, we should not rush to judgment. By way of illustration, the very high level of evening work in Spain is related to a tradition of late work schedules in keeping with Spanish social norms, which are offset by the 'siesta' tradition or a midday break lasting several hours.

High levels of night-work and weekend work are found in two countries in particular, Greece and the United Kingdom. Two others, Sweden and Finland, have above-average proportions of employees involved in several atypical schedules, weekend work and irregular schedules, and, in addition, many employees are engaged in night-work.

Profiles of employees concerned

We now focus on employees who work long hours and also work atypical schedules which are particularly trying: night-work, Sunday work and shift work.

Long working hours do not mean that employees are spared from night-work. The proportion of employees working at night does not drop with the prolongation of working hours. In the 41–44 hours bracket, 18% of employees work at night, with this proportion rising to 31% among those working 45 hours. It is mainly men who are affected; 80% of employees working 41–44 hours are men, while they make up 84% of those working 45 hours or more. They are mainly employees aged between 25 and 54 years. Few older employees are found in this group. In terms of socio-professional categories, the group consists of almost equal numbers of managers, services and sales employees, technicians and industrial workers. Three countries lead in terms of this category of night-workers with long hours – the United Kingdom, Germany and France. Almost one-third of employees of 65 years and over who work 45 hours and more are in the United Kingdom.

Employees who work 45 hours or more and work at least one Sunday per month account for 6% of all employees. Of these, 79% are men, representing most socio-professional categories, the main one being services and sales employees. The most numerous age groups are, in descending order, 35–44 years, 25–34 years and 45–54 years. Few older employees are found in this group (less than 7% of the total).

Shift workers working 45 hours or more account for 2.6% of all employees. Seventy-seven per cent of them are men. Few of them are over 54 years, with the majority aged between 25 and 54. The predominant category is services and sales employees, followed by craft workers and technicians.

A typical profile of employees exposed both to long working hours and to difficult schedules emerges from this brief examination. The vast majority are middle-aged men mainly belonging to four categories – services and sales employees, senior managers, technicians and industrial workers.

Relative stability of atypical time schedules between 1995 and 2000

Between 1995 and 2000, the proportion of employees working atypical schedules (night-work, Saturday and Sunday work, alternating shift work) rose only slightly. The proportion of employees working at night increased a little (18.4% compared to 17.3%) (Table 18). Employees working at least one night per month are the most numerous (3.3%), but those working over 15 nights are less numerous (2.7%). It is the group working between one and four nights per month which has increased the most (from 5.1% to 6.6%). This increase in night-work is therefore more a result of the spread of irregular schedules involving occasional night-work than an increase in regular night-work (shift work). It can be inferred from this that this new type of night-work is linked to new services activities and that the decline in regular night-work reflects the reduction in manual work.

The percentage of employees working Saturdays and Sundays changed very little (Tables 18 and 19), with only a slight decline between the two surveys. In 1995, 75% of employees did not work any Sundays and 52% did not work any Saturdays, while in 2000 these figures were 76% and 53% respectively.

Measuring the trend in the proportion of employees involved in shift work is complicated by the fact that the questions put in 2000 differed from those put in 1995. In the 1995 survey, employees were asked whether they worked rotating schedules and, if they did, to state the number of rotas. In 2000 this concept was replaced by that of shift work involving fixed shifts. To make a comparison we therefore took the percentage of employees working alternating shifts in 2000. These proportions are 15.1% and 16.8% respectively, indicating an increase in this type of schedule. This increase is mainly due to the increase in the proportion of employees working three shifts or more, which rose from 6.9% to 7.2%.

Between 1995 and 2000 the proportion of employees working atypical schedules changed very little. Weekend work dropped slightly while occasional night-work rose. The most marked trend concerns alternating shift work which has increased, particularly alternation involving two shifts.

Implications for health of long working hours

Long working times and long hours devoted to work have a considerable effect on several aspects of employees' health. This emerges in particular from the answers to the following questions: 'Do you think your health or safety is at risk because of your work, or not?' and 'Does your work affect your health or not? If so, how does it affect your health?' These questions reveal how employees perceive the effects of their work on their health without, however, providing objective data. The first question is perceived to have more serious implications for health than the second. Be that as it may, the answers to these two questions show that as their working times and times devoted to work increase, a growing proportion of employees feel that their health is being affected.

Only 17% of employees who devote under 30 hours per week to work consider that their work is a risk to their health or safety, while the figure is 33% for those working between 45 and 48 hours. In the 48–55 hour bracket, the figure is 34% and for over 55 hours, 36%.

The same correlation can be seen for working time. Nineteen per cent of employees working fewer than 30 hours per week consider that their health or safety is at risk because of their work. This proportion rises with increases in working time; it is 23% for the 30–35 hour bracket, 25% for the 36–39 hour bracket, 29% for the 40-hour bracket and 35% for the over-40 hour bracket. Too many employees (59%) report that their work affects their health in one way or another. The longer the time worked, the greater the number of employees who consider that their work affects their health: 51% of employees working fewer than 30 hours think this, and this proportion rises to 68% for those working 45 hours and more.

The longer working times are, the more employees feel that their work is causing certain health problems. The frequency of some of the problems is significantly correlated to working time: backache, headaches, stomach pain, shoulder and neck muscular pain, upper and lower limbs, injuries, overall fatigue and stress, insomnia, anxiety and irritability.

Almost 15% of employees state that their work is responsible for their headaches, with this proportion rising to 18% for those working over 40 hours. Backache is attributed to work by 33% of employees, and by 38% of those working 45 hours and more. Stomach pain concerns a higher proportion of employees with longer working times – 4% of employees in general, 6% of those working between 40 and 45 hours, and 7% of those working 45 hours and more. Work is blamed for muscular pain in the shoulders and neck by 23% of employees, but by 27% of those working over 40 hours. The same applies to muscular pain in the upper limbs; the figure is 12% for all employees and 15% for those working over 40 hours. Muscular pain in the lower limbs is attributed by 11% of all employees, by 16% of those working between 40 and 45 hours and by 14% of those working 45 hours and more. Approximately 7% of employees blame their work for an injury, with this proportion rising to 12% for those working between 40 hours and 45 hours.

Work-related stress is mentioned by 28% of all employees – by 35% of those working between 40 hours and 45 hours and by 39% of those working 45 hours or more. Longer working hours increase the probability of employees feeling overall fatigue. This is the case for 18% of those working under 30 hours, 19% of those working between 30 and 35 hours, 20% for those working 36–39 hours, 23% for those working 40 hours, 25% for those working between 40 and 45 hours, and 33% for those working 45 hours or more. Insomnia is caused by work in the view of 8% of employees. This figure rises to almost 13% for those working over 40 hours. Seven per cent of employees consider

that they suffer from anxiety because of their work, with the figure rising to 10% for those working over 40 hours. Lastly, 11% of employees blame their work for their irritability, while this rises to 19% of those working between 40 and 45 hours and 15% for those working 45 hours or more.

While working time and various health problems appear to be clearly linked in the minds of employees, this may be a result of other related factors, for example, gender, sector of employment or age. A logistical regression simulating the *ceteris paribus* reasoning can help ascertain whether the working time variable indisputably bears some of the responsibility. The exercise confirms the influence of working time on the following problems: backache, headaches, stomach pain, muscular pain in the shoulders and neck, muscular pain in the upper limbs, injuries, stress, overall fatigue and insomnia. The correlations are particularly pertinent for stomach pains, shoulder and neck pain, overall fatigue and stress.

Increased working time and time actually devoted to work are clearly correlated in employees' minds with the view that their health and safety are at risk because of their work. The same correlation appears with the increase in health problems including headaches, muscular pains, fatigue, anxiety and sleeping problems. In short, employees are more inclined to blame their work for threatening their health and for their health problems when they have to work long hours.

Table 65 Proportion of employees engaged in shift work in 1995 and 2000 (as a %)

	1995	2000
Two alternating rotas	8.2	9.6
Three and more alternating rotas	6.9	7.2
Total alternating schedules	15.1	16.8

Table 66 Proportion of employees stating that their health is affected by their work according to weekly working times, by type of problem (as a %)

	29 hours or less	30–34 hours	36–39 hours	40 hours	40–44 hours	45 hours or more	Total employees
Health affected	51.2	54.5	58.4	62.6	62.6	68.3	59.4
Hearing problems	3.1	6.0	7.9	10.4	8.0	9.3	7.7
Vision problems	5.0	9.7	8.9	9.0	13.8	9.7	8.6
Backache	27.3	30.0	32.2	35.4	31.3	38.1	32.8
Headaches	12.9	13.1	14.7	15.8	18.1	18.3	15.1
Stomach pain	2.5	3.0	3.7	4.4	6.2	6.8	4.1
Muscular pain in shoulders and neck	17.5	19.7	22.0	25.4	27.0	26.4	22.6
Muscular pain in lower limbs	8.0	9.9	9.1	12.8	16.2	13.7	10.9
Muscular pain in upper limbs	8.8	10.0	12.4	14.3	14.7	15.0	12.5
Injury	4.1	4.8	7.6	8.9	11.6	9.1	7.4
Stress	21.6	27.4	27.4	26.6	35.3	39.0	28.1
Overall fatigue	17.7	19.0	20.0	22.9	24.7	33.3	22.3
Insomnia	5.0	7.6	7.7	8.0	12.8	12.5	8.2
Anxiety	5.1	8.1	6.8	5.4	9.9	10.1	6.9
Irritability	8.3	9.2	10.8	9.5	18.7	15.2	10.7

Table 67 Percentage of employees who consider that their work threatens their health or safety by working time bracket

Age	Percentage of employees
15–24 years	19.3
25–34 years	23.0
35–44 years	25.1
45–54 years	29.0
55–64 years	26.9
65 years or over	37.0
Total	26.7

Table 68 Estimated duration of time devoted to work in terms of gender (hours per week)

	Including part-time	Full-time only
Men	42.89	43.91
Women	35.40	41.24
Total	39.60	43.01

Implications for health of atypical time schedules

The various atypical schedules – successive rotas, cyclical or irregular working schedules, night-work and weekend work – are often associated with health problems. This is clear from the overlapping of questions concerning atypical schedules and question Q35, ‘Does your work affect your health, or not? If yes, how does it affect your health?’ This is shown in Tables 69–80.

Some 68.3% of employees who work at least one night per month consider that their work affects their health, whereas this is the case for only 57.4% of those who never work at night (Table 69). Several health problems appear to be connected with night work – hearing, skin problems, backache, headaches, stomach pains, injuries, stress, overall fatigue, insomnia and irritability. The highest figures are for insomnia: 18.2% of those working at night complain of insomnia problems compared with 5.9% of employees who never work at night. The effects of night work on stress, overall fatigue and stomach pains are widely acknowledged and they emerge clearly here. Other problems are more surprising. It is difficult to see *a priori* why night work would have an effect on hearing or cause skin problems. We will confine ourselves to this observation as we do not have the resources to establish the reason for this. It may be said, however, that night work often involves trying and hazardous working conditions and, when combined with such dangerous work, it is an aggravating factor.

Table 69 Proportion of employees reporting that their health is affected by their work depending on whether or not they work at night, by type of problem (as a %)

	Not working at night	Working at least one night per month
Health affected	57.4	68.3
Hearing problems	6.5	13.1
Skin problems	5.1	10.2
Backache	31.3	39.6
Headaches	14.4	18.1
Stomach pain	3.3	7.8
Injury	6.3	11.8
Stress	26.4	36.0
Overall fatigue	20.8	28.8
Insomnia	5.9	18.2
Irritability	9.7	15.5

Table 70 Proportion of employees reporting that their health is affected by their work, depending on whether or not they work in the evening, by type of problem (as a %)

	Not working in the evening	Working at least one evening per month
Health affected	54.1	66.3
Hearing problems	5.7	10.4
Backache	30.0	36.5
Headaches	13.0	17.9
Stomach pain	3.1	5.5
Stress	22.6	35.7
Overall fatigue	18.4	27.5
Insomnia	4.7	12.8
Anxiety	5.1	9.3
Irritability	8.1	14.3

Time and work: duration of work

The effects of evening work are less obvious, which is not surprising since working in the evening disrupts natural and social rhythms less than night work. Nevertheless, employees state that working in the evening causes certain problems. Of employees working at least one evening per month, 66.3% state that their work affects their health compared with 54.1% of those who never work in the evening (Table 70). There is also an effect as regards insomnia because 12.8% of employees working in the evening state that they have insomnia problems compared with 4.7% of those who never work in the evening. The other comments regarding night work made above apply to evening work also.

Many employees state that Sunday work affects their health: 66.9% of those working on Sundays compared with 57% of those who never work on a Sunday (Table 71). Generally speaking, the problems are less clear-cut than in the case of night-work, making analysis very difficult.

The same applies to the effects of working Saturdays; there is a correlation but health problems cannot be attributed solely to Saturday work (Table 72).

Changing schedules at least once a month has considerable effects on health problems. In particular, it is a factor in stress, insomnia and fatigue. Of employees subject to these changes, 67.6% declare that their health is affected by their work compared with 56.9% of those not subject to such changes (Table 73).

Table 71 Proportion of employees reporting that their health is affected by their work, depending on whether or not they work Sundays, by type of problem (as a %)

	Not working Sundays	Working at least one Sunday per month
Health affected	57.0	66.9
Skin problems	5.0	9.3
Backache	30.7	39.4
Stomach pain	3.4	6.5
Muscular pain in shoulders and neck	21.3	27.0
Muscular pain in upper limbs	11.7	14.9
Muscular pain in lower limbs	9.8	14.3
Injury	6.5	9.8
Stress	25.5	36.9
Overall fatigue	20.2	29.0
Insomnia problems	6.0	15.1
Anxiety	5.7	10.6
Irritability	9.5	14.9

Table 72 Proportion of employees reporting that their health is affected by their work, depending on whether or not they work Saturdays, by type of problem (as a %)

	Not working Saturdays	Working at least one Saturday per month
Health affected	55.8	63.4
Skin problems	4.5	7.7
Backache	29.4	36.7
Muscular pain in shoulders and neck	20.4	25.3
Muscular pain in upper limbs	11.0	14.2
Muscular pain in lower limbs	8.6	13.3
Injury	5.7	9.0
Stress	24.5	32.4
Overall fatigue	19.2	25.8
Insomnia	6.0	10.6
Anxiety	5.5	8.4
Irritability	8.5	13.3

Table 73 Proportion of employees reporting that their health is affected by their work, depending on whether or not they change schedules during the month, by type of problem (as a %)

	No change	Change at least once in the month
Health affected	56.9	67.6
Backache	30.5	40.1
Headaches	13.6	20.0
Stomach pain	3.2	7.2
Muscular pain in shoulders and neck	21.0	28.1
Muscular pain in upper limbs	11.4	16.1
Injury	6.4	10.2
Stress	25.5	36.6
Overall fatigue	20.9	26.9
Insomnia	6.6	16.6
Irritability	9.5	14.7

Table 74 Proportion of employees reporting that their health is affected by their work, depending on whether or not they work days of over 10 hours, by type of problem (as a %)

	No days of over 10 hours	At least one day of over 10 hours in the month
Health affected	55.2	69.9
Hearing problems	6.8	10.1
Vision problems	7.6	11.1
Backache	30.8	37.8
Headaches	13.2	19.9
Stomach pain	3.0	7.0
Muscular pain in shoulders and neck	20.7	27.8
Muscular pain in upper limbs	11.3	15.3
Injury	6.1	10.3
Stress	23.2	40.5
Overall fatigue	19.6	29.2
Insomnia problems	6.0	13.5
Anxiety	5.4	10.7
Irritability	9.1	15.0

Working over 10 hours at least one day a month has particularly significant effects on the feeling that health has been affected by work. These effects are even more significant than for night-work since 69.9% of employees working days of over 10 hours state that this affects their health, whereas this is the case for 68.3% of those working at night. The most significant effect is stress – 40.5% of employees who have to work days of over 10 hours consider that this causes stress, whereas only 23.2% of employees who never work more than 10 hours per day do so (Table 74).

Employees who work atypical schedules blame them for a number of health problems, both general and specific. The problems differ depending on the characteristics of the schedules. Three types of schedules are regarded as being particularly harmful for health – night-work, working days of over 10 hours and changing schedule within the month. The most marked effects are insomnia, stress, fatigue and irritability.

Table 75 Proportion of employees reporting that their health is affected by their work, depending on whether or not they are engaged in shift work, by type of problem (as a %)

	Shift work	Yes	No
My work affects my health		67.0	57.2
Hearing problems		15.2	5.6
Skin problems		10.6	4.7
Backache		40.4	30.5
Headaches		18.3	14.2
Stomach pain		6.4	3.5
Muscular pain in shoulders and neck		28.0	21.1
Muscular pain in upper limbs		16.4	11.3
Muscular pain in lower limbs		14.9	9.7
Injury		10.3	6.5
Stress		34.6	26.4
Overall fatigue		28.9	20.4
Insomnia		15.4	6.1
Irritability		14.4	9.7

Table 76 Proportion of employees reporting that their health is affected by their work, depending on the regularity of their daily working time (as a %)

	The same number of hours each day	A different number of hours each day
Health affected	57.0	63.6
Headaches	13.6	17.9
Stress	23.7	35.9
Overall fatigue	20.0	26.4
Insomnia problems	6.4	11.4
Anxiety	5.6	9.2
Irritability	8.6	14.5

Table 77 Proportion of employees reporting that their health is affected by their work, depending on whether or not they work the same number of days each week, by type of problem (as a %)

	The same number of days each week	A different number of days each week
Health affected	57.6	65.8
Headaches	14.5	17.2
Stomach pain	3.7	5.5
Muscular pain in shoulders and neck	21.4	27.3
Muscular pain in upper limbs	11.8	15.0
Injury	6.1	10.3
Stress	25.9	36.1
Overall fatigue	20.9	27.1
Insomnia	6.7	13.7
Anxiety	5.9	10.4
Irritability	9.6	14.9

Table 78 Proportion of employees reporting that their health is affected by their work, depending on whether or not they work fixed schedules, by type of problem (as a %)

	Fixed schedules	No fixed schedules
Health affected	57.7	64.0
Headaches	14.5	17.0
Stress	25.1	36.0
Overall fatigue	21.0	25.9
Insomnia	6.9	11.4
Anxiety	6.3	8.6
Irritability	9.6	13.7

Table 79 Proportion of employees reporting that their health is affected by their work, depending on whether or not they work during the day, by type of problem (as a %)

	Working during the day	Not working during the day
Health affected	58.5	66.8
Hearing problems	7.2	11.6
Backache	32.0	39.5
Muscular pain in shoulders and neck	22.0	28.3
Muscular pain in upper limbs	12.0	16.5
Muscular pain in lower limbs	10.4	14.4
Injury	7.1	9.6
Stress	27.4	34.1
Overall fatigue	21.8	26.6
Insomnia	7.3	15.1

Table 80 Proportion of employees reporting that their health is affected by their work, depending on the type of shift work, by type of problem (as a %)

	Schedule type (with break of 4 hours)	Perm. night shift	Perm. afternoon shift	Perm. morning shift	Alternating morn/ afternoon shift	Alternating day/night shift	Alternating morning/ afternoon/ night shift
My work affects							
My health	73.0	61.3	67.7	46.3	67.5	71.4	68.6
Hearing	15.4	7.7	9.5	10.0	17.4	17.0	16.3
Stomach pain	11.8	3.8	5.0	2.8	5.4	6.1	8.0
Injury	9.6	6.7	1.1	9.5	9.2	12.8	12.5
Stress	35.1	34.2	31.8	18.8	36.7	35.4	33.9
Overall fatigue	26.3	21.9	27.6	22.1	29.0	30.3	31.7
Insomnia	16.2	14.8	4.8	4.3	10.2	19.7	22.0
Irritability	20.2	9.6	8.6	6.8	12.5	21.0	15.9

Table 81 Breakdown of employees according to number of Saturdays worked in the month, by country (as a %)

	None	1	2	3	4 or more
Belgium	59.9	11.8	13.6	4	10.7
Denmark	57.9	16	18.5	3.2	4.4
Germany	55.6	11.7	19.2	4.4	9.1
Greece	43.8	5.7	11.8	6.2	32.5
Spain	56.2	6.6	12.7	4.9	19.6
France	53.0	8.8	13.8	5.2	19.2
Ireland	51.6	9.9	16.1	7.1	15.3
Italy	41.4	7.4	11.0	4.4	35.9
Luxembourg	54.1	9.5	11.9	7.2	17.3
Netherlands	58.6	12.6	13.7	3.7	11.4
Austria	52.9	13.1	16.1	5.4	12.5
Portugal	59.9	4.2	10.2	2.3	23.4
Finland	55.1	13.4	17.6	7.5	6.4
Sweden	61.4	14.5	17.9	3.1	3.1
United Kingdom	49.2	11.8	16.6	6.1	16.3
Total	52.6	10.3	15.4	4.8	16.9

Table 82 Breakdown of employees according to working time categories, by contract status and years of service (as a %)

	Open-ended contract				Total
	Temporary contract	Less than one year's service	1–2 years service	Over 2 years service	
Part-time	26.3	24.8	18.7	14.5	17.5
36–39 hours	27.0	27.5	25.6	34.2	32.2
45 hours and more	15.8	19.8	20.3	16.7	16.9

NB: 26.3% of employees on temporary contracts work part-time.

According to the hypotheses generally put forward, while working time is being reduced, the intensity of work is increasing. Macroeconomic studies acknowledge that the reduction of weekly working hours observed in the long term is partly offset by the increased intensification of work (Carré, Dubois and Malinvaud 1972, p. 108). Moreover, according to recent research carried out in France following the working hour reduction agreements under the Robien law and the Aubry laws, the numbers of employees declaring that they have less time to carry out the same tasks are much higher than those who state otherwise (Estrade, Méda and Orain, 2001). One therefore expects a negative relationship between intensity and working time when comparing the situation of employees interviewed in 2000 in the context of the Foundation's survey. However, as we are going to show, an analysis of the statistics indicates on the contrary that a strong and positive relationship exists between intensity and working time. First, we will explain this relationship, and then we will endeavour to interpret it. Lastly, we will examine the main differences that emerge when professional groups and sectors of economic activity are compared.

A positive relationship between work intensity and working time

The *Third European Survey on Working Conditions* can be used to examine the relationship between the intensity of work and working time. This analysis is based on measurements of the intensity of work using indicators relating to the frequency of work at high speeds, the frequency of working to tight deadlines and the lack of time to complete their work. Working time is assessed using a weekly average. Working time gives rise to two estimates for any given category of employees; one is based on taking all the employees into account, and the other on full-time employees only.

Average weekly working hours of employees tend to increase with the intensity of their work. The relationship is very clear and regular with work involving tight deadlines (Table 23). For full-time employees, working time rises from 38.7 hours for employees reporting that they never have to work to tight deadlines to 41.3 hours for those reporting that they always work to tight deadlines. When part-time employees are included, this does not change the result; the average working times, which are lower, then rise from 33.7 to 38.6 hours with deadline pressure. Similarly, as can be seen from Table 25, considerably higher working times are observed for employees reporting that they have not enough time to complete their work (41.1 hours for full-time employees, 38.6 for all employees) than for those who do have enough time (39.5 hours for full-time employees and 36.2 for all employees). There are fewer differences when working at high speeds is used as an indicator of intensity of work (Table 23). An increase in working times is observed only for short sequences of high speed work. When the high speeds take up one quarter of working time, weekly working times become stable.

Conversely, the degree of intensity of work tends to increase with working time. This can be checked with the three indicators used for intensity of work (Table 26). The proportion of employees working almost continually (always or almost always) at high speeds rises from 23% when they work fewer than 30 hours per week to 30% when they work over 50 hours. The increase in the intensity of work with working time is even stronger for the other two indicators. Thus the number of employees working almost continuously to tight deadlines increases regularly with working time and almost doubles between under 30 hours per week and over 50 hours (from 22% to 42%). Similarly, the proportion of employees with insufficient time to complete their work is

more than two times higher when employees work over 50 hours than when they work under 30 hours (35% and 17% respectively). As shown in Table 27, the indicators for intensity of work among part-time employees are quite similar to those of employees who work fewer than 30 hours per week. Part-time employees report working with significantly less intensity than full-time employees.

Econometric analysis of the effects of working time on work intensity

The effect of working time and of part-time work on work intensity has been tested using econometric models and qualitative logit variables. A first series of econometric models is intended to explain three variables of work intensity – working at almost continuously high speeds, working almost always to tight deadlines and not having enough time to do the job. These models are based on two explanatory variables – weekly working hours and part-time or full-time work. Table 28, which shows the results of these models, confirms the positive effect of working time on work intensity. With respect to the 40-hour reference week, working more than 40 hours increases the probability of having intense work for the three work intensity variables adopted; this is even more pronounced in respect of working more than 50 hours. Conversely, working less than 40 hours, and in particular less than 30 hours, reduces the probability of working to almost continuously tight deadlines. The probability of working at almost continuously high speeds is reduced when the hours worked are a little under 40 hours (36–39 hours) and above all with part-time work, the effect of which is much stronger than that of the shortest working hours (under 36 hours), which correspond to a large extent to part-time work. Lastly it seems that working between 30 and 39 hours has a positive effect on the probability of employees having insufficient time to complete their work. This divergent result compared with the previous ones is not confirmed, however, when the biases are cancelled out by various structural variables.

To neutralise the structural biases in the analysis of the effects of working time on work intensity, a second series of econometric models has been tested by introducing structural variables as explanatory variables. These structural variables are added to the two variables of weekly working time and part-time or full-time work to explain the three work intensity variables studied. The structural variables introduced as additional explanatory variables are profession, employment status, gender, age, years of service, country, sector, status of company and size of company. As can be seen from Table 29, the use of these structural variables does not radically change the results of the econometric analyses in the simple models. In fact the positive effects of working time on work intensity variables are fully confirmed. The only difference compared with the simple models is for lack of time to complete their work. While long working times increase the probability of having enough time to do the job, working times of between 30 and 39 hours do not have any statistically significant effect and working times of under 30 hours have a negative effect. These results coincide with those obtained from models relating to other work intensity indicators.

The cross-selection analyses carried out show a positive relationship between working time and work intensity regardless of whether it is measured by the indicators of high speed, tight deadlines or lack of time. The analyses of the econometric models very largely confirm this paradoxical result.

Reasons for the positive relationship between duration and intensity of work

There are several hypotheses that may explain the positive relationship between duration and intensity of work

The first hypothesis concerns overtime. When companies resort to overtime to adapt production as tightly as possible to increases in demand, the employees have to cope with extra working time, thus average work intensity is higher than during normal periods. The result is that long working hours associated with overtime correspond to periods of work that are often more intensive. A second hypothesis is based more specifically on the characteristics of the work of executives. With heavier workloads, executives very frequently work beyond legal work schedules, while often working at an extremely intensive level. Given that their overtime is not paid, intensity and long hours are two inseparable aspects of jobs involving heavy workloads.

Lastly, a third hypothesis concerns the subjective nature of questions on work intensity. It is possible that long working hours, which result in greater fatigue, cause employees to report more readily that they are working intensively.

Work intensity and working time by profession

The situations regarding duration and intensity in the different professions are compared using as indicators average weekly working time and the deductive indicator of work intensity defined above by the average numbers of employees working at almost continuously high speeds, to almost continuously tight deadlines or not having enough time to do their jobs. This comparison confirms, as regards professional groups, the positive relationship which we have established between work duration and intensity, as shown in Figure 1 concerning the situation of full-time and part-time employees. On the one hand there are executives, and to a lesser extent industrial and craft workers, with both long working hours and very intensive work, and on the other there are administrative and sales/service staff whose situation is the opposite. Only two occupations, agricultural workers and soldiers, which are not very big in number, are exceptions to this general relationship because their work is not intensive and they have long working hours. Relatively high work intensity compared with working time can be observed in two very big groups in large industrial units, industrial workers and unskilled labourers.

Work intensity and working time by economic sector

Work duration and intensity situations in the different economic sectors are compared using the same method as for professional groups. As shown in Figure 2, the comparison of economic sectors reveals a positive relation between work duration and intensity, which confirms the corresponding linear correlation coefficient, which is significant from 5%. At one extreme there are sectors such as the timber and cardboard industries, and overland transport, which are characterised simultaneously by high work intensity and long working hours while, at the other, domestic services, education and personal services are characterised by relatively low work intensity and not particularly long hours. Not all economic sectors comply with the general positive relation between work duration and intensity. Some sectors have low intensity combined with long hours, for

example, mining and electricity, water and gas generation and distribution. On the other hand, industries like transport equipment manufacturing and electrical and electronic equipment have a particularly high level of intensity compared with work duration.

Figure 1 Work intensity and working time by profession

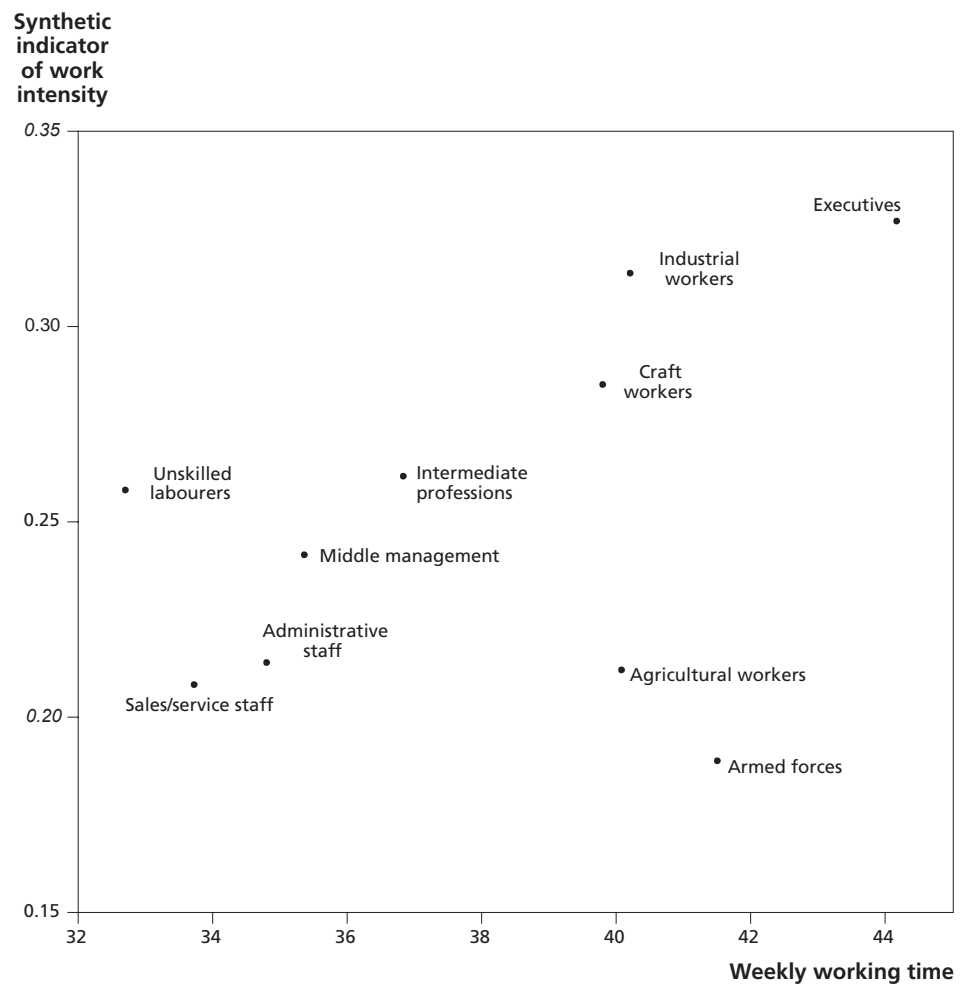
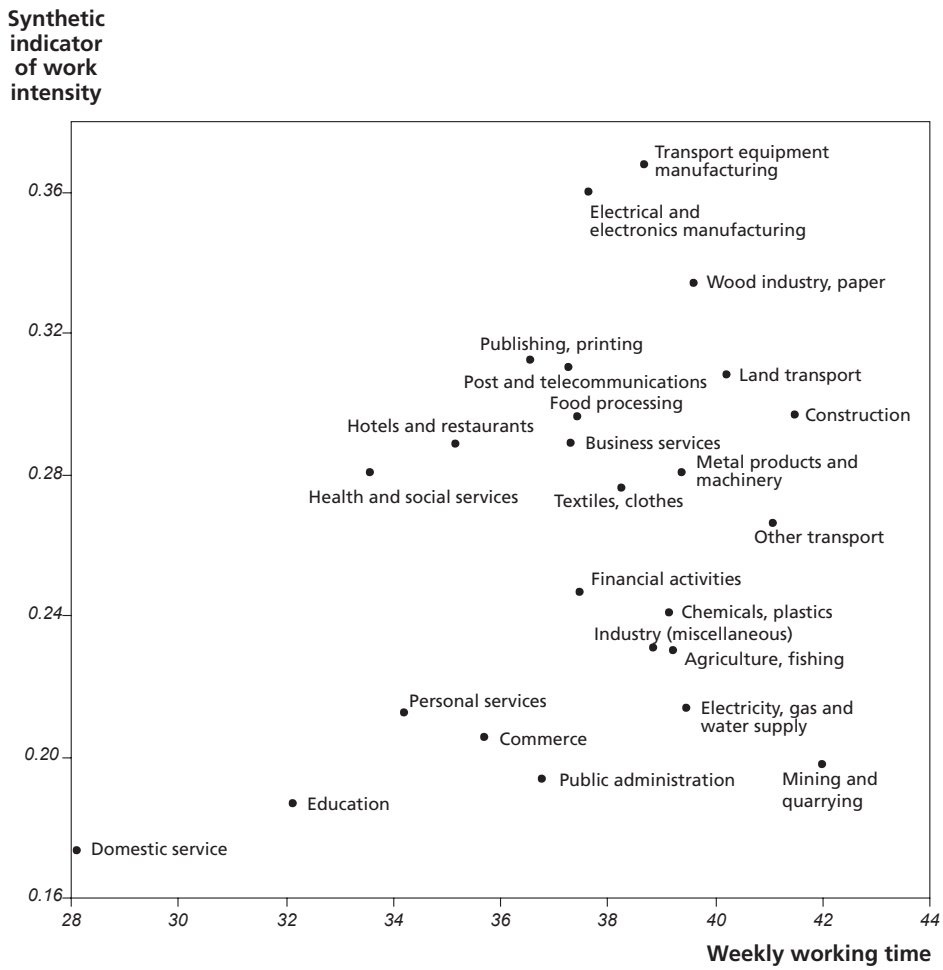


Figure 2 Work intensity and working time, by economic sector



The average weekly working hours of European employees fell by one hour between 1995 and 2000, and now stands at 36 hours 40 minutes (39 hours 55 minutes for full-time employees). This reduction is a result both of the lower proportion of employees working more than 40 hours and the increased percentage of those working 29 hours and less. These averages conceal very wide differences; 17% of employees work 29 hours or less per week whereas 14% work 45 hours per week.

The working time of the self-employed fell by 2.6 hours. However, it remains very high: 44.5 hours with considerable discrepancies between countries, reflecting marked differences in status.

One quarter of employees spend at least one hour per day commuting. Average weekly time devoted fully to work is 39.6 hours for all employees (working time + commuting time) and 43 hours for full-time employees.

Despite the relative reduction in disparities, working times of employees continued to vary widely in 2000. The disparities between EU Member States persist. The average working time is considerably lower than 40 hours in Belgium, Denmark, Germany, France and the Netherlands, while in Ireland, Finland and the United Kingdom it remains above 40 hours.

Differences between socio-professional categories are considerable. Executives work considerably more hours than the average. Of the other categories, manual workers have to work the longest hours, while employees, sales employees, technicians and middle managers work considerably fewer hours than the average.

Despite a strong downward trend, some employees still work long hours (45 hours and more). This is particularly true of executives, in private companies and in some sectors such as agriculture, construction, catering and transport. Older employees do not work fewer hours than younger ones although this would be desirable because of the health risks,.

Atypical schedules affect a large number of employees; 22% are engaged in shift work, with one-third working two alternating rotas and one-third working three or more alternating rotas. Nineteen per cent of employees work at least one night per month, 47% work at least one Saturday per month and 24% at least one Sunday. Irregular schedules affect 37% of employees who do not work the same number of hours each day, while 22% do not work the same number of days per week. In addition, 24% of employees experience a change of schedule within the month.

Women are less affected by atypical schedules than men. However, while the gap is wide for night-work, work involving three or more alternating rotas and long days, which characterise industrial work, it is narrow for other forms of atypical work – irregular work schedules and weekend work. Employees aged between 55 and 64 are affected by atypical schedules to a lesser extent than others, particularly as regards night-work, shift work, weekend work and irregular schedules, without however being fully spared. However, employees aged 65 and over are seriously affected by atypical schedules, with the exception of night-work and shift work. They are most affected by atypical schedules specific to services, weekend work and irregular schedules.

The various atypical schedules are not distributed equally between all the socio-professional categories. Night-work and shift work mainly involve industrial workers, while long days and

irregular schedules are found mainly among executives. Weekend work and variations in schedules affect services/sales employees, and the latter are also most affected by different atypical schedules, with the exception of shift work.

Two countries are more particularly affected by night-work and weekend work, Greece and the United Kingdom. Two others have higher than average numbers of employees with several atypical schedules (weekend work and irregular schedules) – Finland and Sweden, where large numbers of employees are also engaged in night-work.

Some employees are exposed to both long working hours and to difficult schedules, mainly middle-aged men who belong essentially to four categories – services/sales employees, executives, technicians and industrial workers.

Between 1995 and 2000 the proportion of employees working atypical schedules changed very little. Weekend work fell slightly while occasional night-work increased. The most marked development concerns alternating shift work, which increased, particularly as regards the alternation of two shifts.

Increased working time and time devoted to work are clearly linked by employees with the growing view that their health and safety are at risk because of their work. The same link emerges with the identification of an increase in several health problems, including headaches, muscular pains, fatigue, anxiety and insomnia. Employees are much more inclined to blame their work as being a risk to their health and as the reason for a health problem if they are forced to work long hours.

Employees who work atypical schedules blame these schedules for a number of health problems. The problems differ according to the characteristics of the schedules. Three types of schedule are regarded as being particularly harmful to health. These are night-work, working days of over 10 hours and the changing of schedules within a month. The most marked effects are insomnia, stress, fatigue and irritability.

Contrary to the generally acknowledged hypothesis, a statistical analysis shows that there is a positive relationship between work intensity and duration. Average weekly working hours of employees tend to increase with the intensity of their work. The relationship is very clear and regular as regards working to tight deadlines. Much longer working times are identified for employees who do not have enough time to do complete their work than for those who do have enough time. Conversely, the degree of intensity of work tends to rise with working time. Thus the proportion of employees who work almost continuously to tight deadlines increases regularly with working time, and almost doubles between under 30 hours' work per week and over 50 hours. Similarly, the proportion of employees who do not have enough time to do the job doubles when employees work over 50 hours compared with when they work less than 30 hours.

Compared with the 40-hour reference week, working more than 40 hours, and particularly more than 50 hours, increases the likelihood that an employee will have to work intensively, for the three work-intensity variables used. Conversely, working fewer than 40 hours, and above all fewer than 30, helps to reduce the probability of working almost continuously to tight deadlines. The probability of working at almost continuously high speeds is reduced by working times of just under 40 hours, and above all by part-time work.

Several hypotheses may be put forward to explain this paradoxical relation between work intensity and duration:

1. Role of overtime

When companies resort to overtime to adapt production as tightly as possible to increases in demand, employees have to cope with extra working time, thus average work intensity is higher than during normal periods.

2. Characteristics of the work of executives

With heavier workloads, executives very frequently work beyond legal work schedules, while often working at an extremely intensive level.

3. Subjective nature of questions on work intensity

It is possible that long working hours, which result in greater fatigue, induce employees to report more readily that they are working intensively.

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Time and work: duration of work

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This report looks at working hours and work schedules and their implications for living and working conditions. Most European countries have experienced a gradual reduction in working hours over the past two decades, accompanied by different working time arrangements and a variation in individual working hours and rhythms. While this has in general led to an improvement in working conditions, it can also be problematic for some people because of the disruption in work and the stress it generates. In addition, work itself has intensified and the flexibility of working time has resulted in variations in the pattern and duration of working times, the organisation of work in more or less regular cycles and irregular organisational procedures, all of which can lead to a disruption of the normal patterns of living. In short, it is not certain that recent developments in the area of working time and work rhythms have significantly improved the living and working conditions of employees.

The European Foundation for the Improvement of Living and Working Conditions is a tripartite EU body, whose role is to provide key actors in social policy making with findings, knowledge and advice drawn from comparative research. The Foundation was established in 1975 by Council Regulation EEC No 1365/75 of 26 May 1975.

