Are the French Happy with the 35-Hours Workweek?

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Abstract

Aiming at lowering unemployment, the French government mandated the reduction of the standard workweek from 39 to 35 hours in 1998 to be implemented in large firms by 2000 and in small firms by 2002. The difference in timing by firm size is used to set up a quasi-experimental design to analyze the effect of the law on workers' welfare. The law may have worked as a coordination mechanism to improve welfare in the presence of strong positive complementarities in leisure among individuals, or it may have introduced distortions and made workers worse off. Estimates from the French Labor Force Survey for the years 1993 to 2000 suggest that the law did not make workers happier. The 35-hours mandate increased the proportion of dual-job holdings and the transitions from large to small firms, which may have been motivated by the desire to work more hours. Estimates using data on subjective satisfaction with hours of work from the Eurobarometer suggest that those who were affected by the law became less satisfied with their hours of work. The law also increased wages in large firms relative to small firms to compensate workers for the reduction in hours and keep the same monthly income. As a result, large firms replaced some workers with cheaper unemployed individuals. The net employment effect is harder to quantify, but the estimates suggest it was not significant.

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A. Motivation

There has been a steady decrease in hours of work in Europe compared with the United States and Japan since the 1970s (Figure 1). While in the 1960s annual hours per person employed were the same in the United States and in France, they are now much below U.S. levels. The same pattern can be observed in other European countries and today the average American works approximately 400 hours more per year than the average European. The reasons for this reduction have been a topic of recent debate. Alesina, Glaeser and Sacerdote (2005) show that labor market regulations and unionization are important determinants of the difference in hours worked between the United States and Europe. They raise an interesting point: "A very hard question to answer is whether labor unions and labor regulation introduce distortions that reduce welfare or whether they are a way of coordinating on a more desirable equilibrium with fewer hours worked". They argue that, if there are complementarities in leisure activities, the "social multiplier effect", everyone would benefit from a coordinated reduction in working time.

This paper looks at the benefits of coordinated workweek reductions with a focus on France. Since the 1980s, a sequence of laws have reduced the workweek in France. The law enacted in 1998 mandated a reduction of the workweek to 35 hours in large firms by 2000 and in small firms by 2002. The purpose of this reduction was to increase employment through work sharing, as the government expected that a given amount of work would be divided by a larger number of employees. Implicitly, the government assumed this policy to be welfare enhancing as the benefits from reducing unemployment (because of higher individual self-esteem, lower fiscal deficits, and, maybe, higher output) would offset any welfare losses from constraining firms' and workers' workweek decisions. Besides, the workweek reduction law could have worked as a coordination mechanism to a better social outcome if there were strong complementarities in leisure, motivated by the desire to spend weekends or holidays with other people or by the decrease in the social stigma of having more leisure.

The paper uses the firm size-specific timing of the latest laws, which generated useful heterogeneity in the population of affected individuals and firms, to evaluate the welfare effects of the coordinated workweek reduction in France. Using data from the French Labor Force Survey and matched information for firm size from SIRENE, a firm-level survey, individuals were classified as part of the experiment group if working in large firms and of the control group if working in small firms. The micro database also permits controlling for individual characteristics and business cycle effects, which are particularly important because strong economic growth and other labor market reforms of the early and mid-1990s boosted aggregate French employment in the second half of the 1990s and beginning of the 2000s.[2] We are not aware of any study that explore such heterogeneity to evaluate the impact of the law on workers' welfare while at the same time controlling for key aggregate and individual effects.

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[2] See Estevão and Nargis (2002).

The paper shows that, in all likelihood, the 35-hours workweek laws did decrease welfare. First, a significant share of individuals working in large firms tried to either maintain their initial workweek by securing a second job or transitioning to a small firm, or be compensated for the workweek reduction through higher hourly wages. Second, the ensuing cost increase from lower "cheap" hours (i.e. hours paid at normal rates without overtime premium) and higher hourly wages, forced large firms to fire employees, thus undermining the main aim of the policy, and hire workers at lower hourly wages from the unemployment pool. On net, the 35-hours workweek laws probably left employment levels in large firms unchanged. Ancillary results using data from the Eurobarometer also show that workers became less satisfied with their hours of work as a result of the reduction in the workweek.

The next section describes the legal background for the workweek reductions in France. Section C discusses some related work. Section D looks at workers' perceptions about hours restrictions in several European countries. Section E presents a theoretical analysis of the effects of restrictions in hours when there are complementarities in leisure. Section F describes the data and our empirical strategy. Section G explains the empirical findings. Section H concludes.

B. Background

The length of the workweek in France has been reduced by a sequence of laws. This is a unique feature in the sense that in most other European countries recent workweek reductions have been introduced by sector agreements or collective bargaining. In 1982, François Mitterrand's socialist government reduced the length of the workweek from 40 to 39 hours. In 1998, a new socialist government further reduced the workweek to 35 hours, forcing any time above 35 hours to be paid a premium.

Two laws implemented the workweek reduction: (i) Aubry I (June 1998), set the length of the workweek at 35 hours, beginning in January 2000 for firms employing more than 20 people, and in January 2002 for smaller firms; (ii) Aubry II (January 2000), moved the process further, introducing more detailed legal provisions regarding overtime. To ease the transition for small firms, the law reduced their overtime premium and increased their annual limit to overtime work compared with large firms. This way, small firms could continue operating on a 39-hour basis paying the difference with a reduced overtime premium.

The purpose of the workweek reduction to 35 hours was to create more jobs during a period of high unemployment (11.5 percent in 1998). The slogan used by the unions to promote the law was "35 hours pays 39," meaning that the cost of the working time reduction would be borne by employers and workers would keep the same monthly income. To help firms with the transition, they received a government rebate per employee in their social security contributions. The rebate declined with the employee's monthly income and was largest for individuals receiving the minimum wage. In addition, the working time reduction was expected to increase productivity. The official argument was that productivity increases together with cuts in social security contributions might even lead to a reduction in the cost of labor, so that firms would not need to cut wages for the policy to be sustainable. To protect

low-wage individuals, the law guaranteed the monthly earnings of workers receiving the minimum wage (SMIC, "salaire minimum interprofessionnel de croissance").

There are some studies that look at the effects of workweek reductions on employment and labor costs. Among the many relevant papers, Crèpon, Leclair and Roux (2004) use firm-level data to estimate the effect of the 35-hours mandate on productivity, the cost of labor, and employment. They compare the performance of firms that reduced the workweek to 35 hours relative to those that remained in the 39 hours schedule. They find that total factor productivity decreased by 3.7% from 1997 to 2000 in firms that reduced the workweek relative to those that did not. At the same time, employment increased by 9.9% in firms who adopted the 35-hours schedule. Crèpon and Kramarz (2002) study the employment effects of an earlier law: the 1982 reduction in the workweek from 40 to 39 hours. Their identification strategy explores the variation in hours worked to set up a quasi-experimental design. They find an increase in the probability of making a transition from employment to unemployment between 2.3 and 3.9 percentage points. They do not measure the net effect on employment. For Germany, Hunt (1998 and 1999) studies the employment effects of restrictions in hours exploring the cross-industry variation in reductions in standard hours. She finds that the reductions in hours decreased employment in the period 1984-1994.

This paper takes a new path. It considers not only the employment effects of the 35-hours workweek, but looks more broadly at its welfare implications.

C. Europeans' Attitude Towards Hours Restrictions

This section takes a step back from our main statistical methodology. Here, direct information on workers' opinions about their hours of work is used to give a hint on how the workweek reduction laws in France affected welfare.

Using the 1997 International Social Security Program (ISSP), Table 1 shows the results with respect to workers' preferences for hours of work across many countries. Underemployment is much more common than overemployment. With very few exceptions, the proportion of workers who would like to work more hours is much larger than the proportion of workers who would like to work fewer hours. On average, about one-third of the workers would like to work more hours and receive more income. In France, 20 percent would like to work more. This is below the average for all countries, but it still represents a large number of workers.

The Eurobarometer of February/April 1996 asks individuals in the European Union whether they would be willing to work fewer hours, so that they could enjoy more leisure, and more jobs could be created in the economy. The results are reported in Figure 2. On average, about 60 percent of EU workers would be willing to work less. This includes those who would work less regardless of the income they would receive and those who would only work less if their monthly income remained constant. France has the highest proportion of workers saying that they are willing to work less (72 percent), closely followed by Portugal, Sweden, and Italy.

Table 2 shows the results of a probit regression of the willingness to work less on a set of country dummies and controls for individual characteristics. We focus only on the behavior of employees, because self-employed workers have more flexibility in choosing their hours. The dependent variable is an indicator equal to 1 if the worker says he would be willing to work less. The omitted country is France. The coefficients on the country dummies tell us how the proportion of workers who are willing to work less in that country compares with France, controlling for individual characteristics. The results show that French employees are the ones who are most in favor of a reduction in hours. As we would expect, workers who work more hours are more willing to accept a reduction in the workweek. Labor union members and older workers are also more willing to accept reductions in hours. Workers with more children under age 15 living in the household are less amenable to workweek reductions, probably because they are more averse to a reduction in labor income. We also find that the willingness to work less increases with the level of income and decreases with job satisfaction and with satisfaction with hours of work (results not included to save some space but available upon request).

The Eurobarometer asks workers what they think should be the priority to fight unemployment. The results are in Figure 3 and are consistent with the evidence on the willingness to work less. More than 20 percent of French workers think that the best policy to fight unemployment would be a reduction in weekly working hours. This percentage is twice as large as the EU average and is only bigger in Sweden.

So, the evidence so far suggests that French workers were very open to work-sharing policies in the 1990s. However, as the data from the ISSP shows, many workers would like to work more hours and earn more income. Therefore, some employees appear to have been constrained by the 35-hours mandate. So far, it is not clear whether workers became better off as a result of the law or were constrained to work less than they would prefer.

D. Consequences of Hours Restrictions: Theory

In this section we present a model to guide the empirical work on the consequences of the 35-hours mandate on employment and job satisfaction. We start with a one-sector model and look at the effects of an upper bound on hours on employment, wages and happiness. Then, we extend the model to two sectors, one covered by the restriction in hours and another with free choice of hours. Finally, we see what happens if hourly wages increase in the covered sector, keeping the monthly income unchanged.

D.1. One-Sector Model

On the supply side, we introduce complementarities in leisure. Utility is separable in consumption and leisure and is given by $U(wH_i) + V(1 - H_i, 1 - \hat{H})$, where H_i is the number of hours worked by representative worker i and $\hat{H}$ is the number of hours worked by all other workers. Utility is concave in consumption and leisure, $U_{11} < 0, V_{11} < 0$. The labor supply of

representative worker i is given by his best response to the hours worked by others, given the wage. It comes from the solution to the utility maximization problem:

$$\max_{H_i} U(wH_i) + V(1 - H_i, 1 - \hat{H})$$

The first order condition to this problem is:

$$wU'(wH_i) - V_1(1 - H_i, 1 - \hat{H}) = 0$$

Solving this equation for H_i gives the labor supply function of worker i, given the wage and the hours chosen by other workers, $H_i^* = H^*(w, \hat{H})$. The derivative of the supply function with respect to the wage depends on the usual substitution and income effects. We will assume that the substitution effect dominates and labor supply is increasing in the wage. The derivative with respect to $\hat{H}$ is given by $\rho = -\dfrac{V_{12}}{w^2 U'' + V_{11}}$. The denominator is negative because of the assumptions of concavity of the utility function in consumption and leisure. The condition for labor supply to be increasing in the hours supplied by other workers is $V_{12} > 0$. This means that there are positive strategic complementarities in leisure, i.e., the marginal utility of leisure increases if other workers also have more leisure. This can be justified if workers enjoy leisure more when they can have their friends' company or if the social stigma of working less is smaller when everyone is working less. These are plausible assumptions and there is some evidence in the literature for this type of complementarity.[3]

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[3] Some evidence for positive leisure complementarities can be found, for example, in the literature on the rat race. Landers et al (1996) surveyed lawyers and associates in law firms. They asked how they would react to a 5% wage increase: reduce hours by 5%, with no change in the annual salary; continue working the same hours, with a 5% increase in the annual salary; or increase hours by 5%, with a 10% increase in the annual salary. They were asked this question assuming that other workers would not change their hours, assuming that other workers would increase their hours by 5% and assuming that other workers would decrease their hours by 5%. They find that a significant number of respondents want to increase their hours if others are doing the same. Some workers who wanted to keep their hours now want to work less if others are also working less and some workers who wanted to increase their hours now want to keep them if others are working less. The authors interpret this as evidence in favor of an adverse-selection model, where firms establish work norms with long hours to discourage workers with a preference for short hours to pretend to be long-hours workers. But this evidence can also be interpreted as a coordination failure in a model with strategic complementarities in leisure, like the one we propose.

And, we actually found evidence of positive complementarities between hours worked by spouses using data from the French labor force survey.[4]

We will focus on symmetric Nash equilibria, so that everyone is working the same number of hours and $H_i^* = H^*(w, \hat{H}) = \hat{H}$. If the supply function intersects the 45 degree line only once, there is a unique Nash equilibrium. This is the case of weak complementarities in leisure. In case strong complementarities in leisure exist, there will be multiple equilibria where equilibria points with $\rho > 1$ will be unstable, and points with $\rho < 1$ will be stable, as illustrated in Diagram 1.

Diagram 1
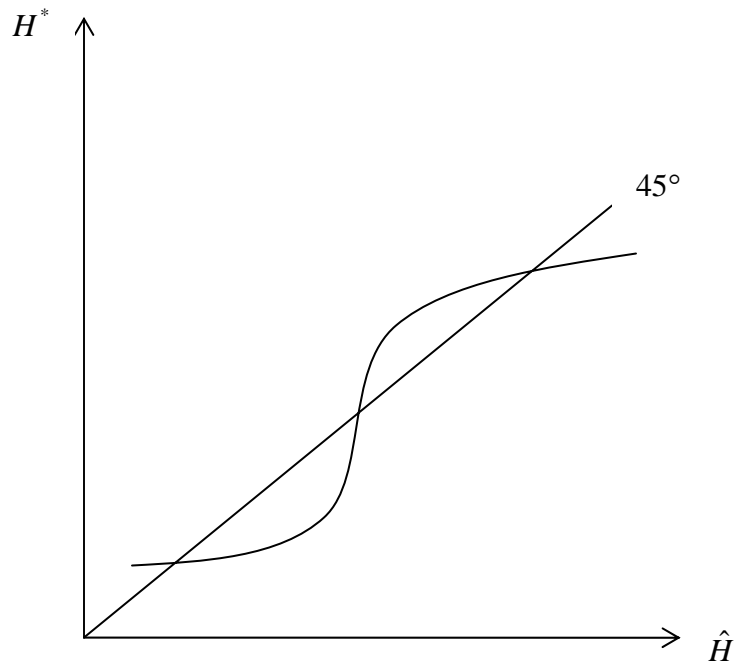
We can write the condition for the existence of multiple equilibria ($\rho > 1$) in terms of the derivatives of the utility function. There are multiple equilibria as long as $V_{12} + w^2 U'' \geq -V_{11}$. Multiple equilibria are more likely if the utility function is not very concave in consumption and leisure (U'' and V_{11} not very large) and if there are large complementarities in leisure (V_{12} large).

When, in addition to positive complementarities, there are positive spillovers in leisure, so that $V_2(1 - H_i, 1 - \hat{H}) > 0$, then a coordinated reduction in hours increases the utility of all

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[4] We don't report these results because this paper is about complementarities at a more aggregate level. The results are available upon request.

workers. To see how this works, we look at a symmetric cooperative equilibrium, that is, an action for all workers that maximizes the utility of the representative worker. The symmetric cooperative equilibrium is given by the solution to the maximization problem:

$$\max_{\hat{H}} U(w\hat{H}) + V(1-\hat{H},1-\hat{H})$$

The first order condition to this problem is:

$$wU'(w\hat{H}) - V_1(1-\hat{H},1-\hat{H}) - V_2(1-\hat{H},1-\hat{H}) = 0$$

By the envelope theorem $wU'(w\hat{H}) - V_1(1-\hat{H},1-\hat{H}) = 0$. If there are positive spillovers in leisure , i.e. $V_2(1-H_i,1-\hat{H}) > 0$, equilibria with lower hours are preferred. In this case, a coordinated reduction in hours is welfare-improving. The 35-hours mandate would be a solution to a coordination failure because in its absence workers would choose to work too many hours relative to the social optimum.

Whether a reduction in hours actually works as a welfare-improving coordination mechanism depends on the degree of complementarities in leisure. With strong complementarities in leisure, a coordinated reduction in hours can move the economy to a better equilibrium in the Pareto sense. With weak complementarities in leisure, there is a unique equilibrium. In that case, a mandated reduction in hours will force workers to work less than they would like to and workers will have a private incentive to increase hours, working overtime or in a second job.

On the demand side, we assume that hours and workers are perfect substitutes in the production function, represented by $Y = F(HN,K)$. There is a fixed cost of employment, given by a, which represents labor costs that are not sensitive to variations in hours of work (e.g. training, day-care provision, and other benefits). Therefore, the cost of labor is given by $aN + wHN$, where w is the hourly wage. We first assume that output is fixed and, at the initial symmetric Nash equilibrium, workers work $\overline{H}_0$ hours. This is the initial upper bound on hours (in the case of France the maximum number of hours before the law was 39). We also assume, for simplicity, that firms cannot contract overtime. There is a mandated reduction in the upper bound on hours to $\overline{H}_1 = 35 < \overline{H}_0$. Firms reduce hours to $\overline{H}_1 = 35$ and increase employment to keep output constant. So, the reduction in standard hours has a positive effect on employment.

If firms can adjust output, there is a negative scale effect. Because there is a fixed cost of employment, the reduction in standard hours increases the cost of labor for the same number of total hours hired. Because labor costs increase, the scale effect implies a reduction in output, reducing hours and employment. Also, firms may respond to the increase in the cost of labor substituting capital for labor. So, the net effect on employment may not be positive.

D.2 Two-Sector Model

Because our empirical strategy explores the different timing of application of the 35-hours mandate in large and small firms, it is useful to extend the model above to two sectors: one sector covered by the law (large firms), and one sector with free choice of hours (small firms). Labor supply and labor demand are as described above for the one-sector model. The difference is that the upper bound on hours is only imposed in the covered sector.

Under the assumptions of perfect substitutability between hours and workers and fixed output, employment in the covered sector increases proportionally to the reduction in hours. If there are strong complementarities in leisure, workers in the covered sector are happier. We may see workers transitioning from small to large firms even if there are mobility costs, as long as the utility gain from working a more desirable number of hours exceeds the mobility cost. By a compensating differentials argument, wages in large firms may decrease relative to small firms. Because workers in small firms are working a less desirable number of hours, their relative wages may have to increase so that they don't leave to large firms.

If there are weak complementarities in leisure, workers in large firms are forced to work less than they would prefer. They may respond to that by moving to the uncovered sector. Even with mobility costs, they may do so as long as the utility gain from being free to choose hours of work exceeds the costs of moving. Another possible response is to look for a second part-time job to compensate for the reduction in hours on the main job[5]. With weak complementarities, the wage in large firms may increase relative to small firms to compensate individuals for working undesirably low hours. If that happens, we should see fewer transitions to the uncovered sector and should see fewer workers taking second jobs than if wages had not changed.

D.3. Wage Adjustments and Substitution between Insiders and Outsiders

A final extension of the model is needed to study the effect of the law on transitions in and out of employment. Suppose that the hourly wage in the covered sector increases after the law. This may be mandated, as it was the case for minimum wage earners in France, or it may be because employees need to be compensated for working less hours (weak leisure complementarity case), or even because of other reasons for not letting monthly income decline much (e.g., minimum family budget). In this case, our model predicts that employment in the covered sector will still increase with the reduction in hours, but there may be a composition effect. Firms may fire existing workers, who have a preference for

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[5] Another possible response if workers are constrained by the 35-hours mandate is to become self-employed. We looked at the effect of the law on transitions from employment to self-employment and did not find any effect. This is not surprising, given that the decision of being self-employed versus being employee involves many other considerations apart from the hours of work.

keeping the same monthly income, and hire workers from unemployment, who do not have a reference monthly income.

To study this situation, we extend the model to distinguish between two types of labor inputs: workers who are currently employed—insiders—and workers who are hired from unemployment—outsiders. The production function is now given by $Y = F(HN_I, HN_O, K)$ where N_I is the number of workers that the firm keeps and N_O is the number of workers it hires from unemployment. Before the mandated reduction in hours, the hourly wage is the same for the two types of labor, w_0. After the mandated reduction in hours, the hourly wage of insiders goes up to keep the same monthly income $w_I = \dfrac{w_0 \overline{H}_0}{\overline{H}_1}$, where $\overline{H}_0 = 39$ is the initial upper bound on hours and $\overline{H}_1 = 35$ is the new upper bound on hours . We assume that the fixed costs of employment are the same for the two types of workers. The cost of labor for the insiders is $W_I = aN_I + w_I \overline{H}_1 N_I$ and for the outsiders is $W_O = aN_O + w_O \overline{H}_1 N_O$. The first order conditions for cost minimization give $\dfrac{W_I}{W_O} = \dfrac{F_I(\overline{H}_1 N_I, \overline{H}_1 N_O, K)}{F_O(\overline{H}_1 N_I, \overline{H}_1 N_O, K)}$. The firm decides how many workers to keep and how many to hire from unemployment so that the ratio of the costs equals the ratio of marginal products. If the wage of insiders goes up, the firm will fire some of the current workers and hire outsiders until this condition is satisfied.

E. Data and Identification Strategy

We use data from the French labor force survey (Enquête Emploi) from 1993 to 2000. The sample is renewed by a third every year, which means that the longest panel we can build comprises three years. Because we want to measure the effect of the law on people's behavior, individuals' classification in the control and treatment groups needs to be done before the law was enacted and their response to the law needs to be measured well pass the enactment. As the law was approved in June 1998 and the Enquête Emploi is conducted every year in March, the last panel in our database, 1998-2000, fulfills this basic condition. The period before the law covers the years 1993 to 1998 and the period after covers 1999 and 2000. It may be the case that employees do not change behavior in 1999 as they may not have had enough time to adjust. This would bias our results towards underestimating the effect of the law, but we will take this conservative approach and see if we find a significant effect already in 1999.

In a first stage, the reduction in hours was compulsory only for firms with more than 20 employees. Small firms received incentives to reduce the length of the workweek before the legal deadline. But, as we will see in the next section, the reduction in hours worked was much faster for workers employed in large firms. In small firms the adjustment was much slower and accelerated at a later stage, when the law became binding. Our specifications explore this difference between small and large firms. Data on firm size comes from matched firm-level data from the French Registry of Firms, SIRENE.

The empirical work is based on reduced-form equations of the form:

$$(1) \quad E(y_{it}) = \Phi(\alpha + \gamma d_t + \beta X_{i0} + \delta_0 treatment_i + \delta_1 (treatment \times post1999)_{it})$$

where i denotes individuals and t time. y_{it} is the outcome of interest, which may be hours worked, the logarithm of wages, an indicator for employment, etc. X_{i0} is a set of controls for individual i in the base year, which is the year when the individual entered the panel. The usual set of controls includes gender, marital status[6], an interaction of gender and marital status, number of children under 6, an interaction of gender and number of children under 6, age, age-squared, tenure, region dummies and education. d_t are year effects. $treatment_i$ is an indicator that equals 1 if the individual belongs to the treatment group. In most specifications, the control group includes employees working in small firms and the treatment group includes employees working in large firms. Small firms have less than 20 employees. Large firms have between 20 and 49 employees. We impose a cutoff at 49 to ensure more homogeneity between the treatment and control groups.[7] In some specifications we also explore the variation across individuals working different hours. Because the restriction in hours did not bind for individuals already working 35 hours or less before the law, they were not affected by it. We compare their behavior to that of workers who were working more than 35 hours before the law. The coefficient δ_1 is the difference-in-differences (DD) estimator measuring the impact of the law on the outcome variable. In most specifications, the standard errors are corrected for clustering on year/firm size. The sample is limited to employees aged 15 to 64 with positive net monthly income. The self-employed are excluded as they have more flexibility in setting their hours of work.

This strategy requires fairly weak identifying assumptions. It requires that there are no contemporaneous shocks, other than the workweek reduction, affecting the labor supply outcomes of the control and the treatment groups so that, in the absence of the law, both groups would have had a similar behavior. If this assumption holds, the behavior of workers in the control group gives us information about how workers in the treatment group would have behaved if there had been no reduction of the workweek.

There is one element that may bias our results. If the business cycle affects small and large firms differently, our estimates may be capturing the effect of the business cycle instead of the effect of the mandated reduction in hours. Figure 4 plots the evolution of the unemployment rate in France from 1993 to 2004. We can see that the unemployment rate decreased by about two percentage points from 1999 to 2001. If the business cycle affects

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[6] Marital Status is an indicator equal to 1 if the individual has a partner who lives in the same household, even if he is not legally married and 0 otherwise.

[7] Our results are not sensitive to the choice of the cutoff on firm size.

small and large firms similarly, the effect of the business cycle is taken into account by the time dummies. But if there is a firm-size specific business cycle effect, our estimates may be biased. To control for firm-size specific business cycle effects, we use the following alternative specification:

$$(2) \quad E(y_{it}) = \Phi(\alpha + \gamma d_t + \mu(GDP_t \times treatment_i) + \beta X_{i0} + \delta_0 treatment_i + \delta_1 (treatment \times post1999)_{it})$$

where GDP_t is the growth rate of real GDP and the interaction between real GDP growth and the treatment dummy captures firm-size specific business cycle effects.

Table 3 reports descriptive statistics by hours worked, firm size and year, to illustrate the differences in characteristics of each group. More than 70 percent of the workers working 35 hours or less are women. Net monthly income is higher in large firms. The proportion of workers with less than one year of tenure is larger for workers working 35 hours or less and is higher in small firms. As expected, individuals working fewer hours in the main job work more hours in the second job. These individual characteristics are controlled for in the estimations.

F. Results

F.1. Hours Distribution and Wages

The 35-hours mandate had a clear impact on weekly hours of work. Figure 5 shows the evolution of usual weekly hours worked by full-time employees since 1990. There is a clear reduction in hours worked after 1998. The decline is much more pronounced in large firms, who were affected first by the reduction of the workweek. Small firms start adjusting as well but much more slowly until there is a big decline from 2001 to 2002 when the law starts binding for them.

The decline in hours can also be seen by looking at the distribution of weekly hours worked, in Table 4. Until 1998 the majority of employees were working 39 hours per week. After the law, there is a big increase in the proportion of employees working 35 hours. Large firms adjust first. In 2002 more than 45 percent of employees in large firms and almost 35 percent of employees in small firms worked on a 35-hour basis. This shift in the focal point of the distribution of hours from 39 to 35 hours is also evident from Figures 6 and 7 that show the evolution in the proportion of employees working 39 and 35 hours per week in small and large firms.

To examine more carefully the effect of the 35-hours mandate on hours worked, we estimate equations (1) and (2) with hours in the main job as the dependent variable. The control group are employees in small firms and the treatment group are employees in large firms. The estimation results are reported in the first two columns of Table 5. The DD estimator is significant and negative, suggesting that the law reduced hours worked in large firms relative

to small firms. The demographic controls have the expected signs: a) women work less than men, particularly if they are married and have small children; b) married workers and workers with less experience work more hours; c) older individuals work fewer hours. The results do not change significantly when we control for firm-size specific business cycle effects.

The last four columns of Table 5 report estimates of the effect of the 35-hours law on hourly wages and net monthly income. The evidence suggests that hourly wages increased and monthly incomes did not change[8]. This increase in wages in large firms relative to small firms already suggests that workers may not be happier with the reduction in hours. So, the wage must increase in large firms to compensate workers for working an undesirably low number of hours and prevent them from quitting and going to small firms.

F.2. Satisfaction with Hours of Work

One way to see if the French are happier with the mandated reduction in hours is to look directly at subjective measures of satisfaction with hours of work. We use data from the Eurobarometers of February/April 1996 and September/October 2001. First, we compare satisfaction with hours of work in EU countries in 1996 and 2001.[9] This allows us to see whether the French became happier with their hours of work after the 35-hours mandate compared with other EU countries that did not have similar policies. Then, we restrict the analysis to France and explore the differences across firm size and hours worked to analyze the effect of the law on satisfaction with hours.

Table 6 shows the results of an ordered probit regression of employees' satisfaction with hours of work. We introduce a dummy for France and for 2001 and an interaction of the two. There is no significant difference in the satisfaction of French employees with hours in 2001 compared with 1996 relative to other Europeans. Even though there was a reduction on hours worked in most European countries, satisfaction with hours actually decreased from 1996 to

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[8] The results are insensitive to estimation with individual fixed effects to account for unobservable heterogeneity.

[9] Satisfaction with hours of work is measured on a scale from 1 to 7. The question from the Eurobarometer is framed on the following way: "I am going to read out a list of various aspects of jobs. Please choose between the two ends of this scale. If you are completely dissatisfied with that particular aspect of your present job, you give a score of 1. If you are completely satisfied with that particular aspect of your present job, you give a score of 7. The scores between 1 and 7 allow you to say how close to either side you are." There is some skepticism about the quality of subjective measures of happiness and satisfaction. But, in most cases, friends and colleagues of the individual give ratings that are strongly related to the way people rate themselves, as reported in Diener and Suh (1999). So, even though there may be problems with subjective measures of satisfaction with hours of work, they certainly give some information about workers' preferences.

2001. This suggests that some workers would like to work more than the contracted hours. The reduction in hours does not seem to have worked as a welfare improving coordination mechanism. An interesting result is that union members are significantly more satisfied with their hours of work, which suggests that unions bargain for working times that match their members' preferences. Married workers and women are more satisfied with their hours of work. Satisfaction with hours decreases with age and increases with income.

The utilitarian approach that we took in this section, looking at subjective measures of satisfaction with hours of work, can be complemented with a behaviorist approach. Our model predicts that, if there are no strong complementarities in leisure, workers will be unhappy with the upper bound on hours and may look for a second part-time job or move from large to small firms. Therefore, additional evidence on whether or not workers became happier with the restriction in hours can be obtained by looking at the effect of the law on dual job holdings and on transitions from large to small firms.

F.3. Dual-Job Holdings

We explore the variation across firm size and the variation across individuals working different hours to study the effect of the law on the proportion of workers with more than one job (i.e., dual-job holders). The treatment group are workers working more than 35 hours at the beginning of each panel. The control group are workers working 35 hours or less at the beginning of each panel. The restriction in hours introduced in mid-1998 is not binding for these workers. Therefore, we expect their behavior not to change as a result of the law. We compare the behavior of the treatment and control groups before and after the law in large firms (experimental) and small firms (non experimental).

Table 7 gives the triple-differences (DDD) estimator constructed from group means. As we would expect, workers are more likely to have a second job if they work fewer hours in the main job. Workers employed in small firms in their main job are more likely to have a second job than workers employed in large firms. The proportion of workers working 35 hours or less (the control group) who have a second job increases after 1999 in small firms and decreases slightly in large firms. When we look at workers working more than 35 hours (the treatment group), we don't see much variation after the law. If we expect that, in the absence of the law, the treatment group would have had a similar behavior to the control group, dual job holdings should have decreased in large firms relative to small firms. Therefore, the evidence suggests that the law had a positive effect on dual-job holdings. The DDD estimator shows that the law increased the probability of having a second job by 2.7 percentage points, which is quite a large effect given that the proportion of workers with a second job is small.

Because the control and the treatment group and employees in large and small firms differ in their demographic characteristics, it is important to introduce controls in the DDD estimation. It may be that the differences in dual job holdings reflect differences in the underlying characteristics of the groups rather than the effect of the law. To control for the demographic

characteristics of the workers and for time-specific effects, we run the following linear probability model:

$$(4) \ E[P(dual_{it} = 1)] = \alpha + \gamma d_t + \beta X_{i0} + \delta_0 l \arg e \ firm_i + \delta_1 treatment_i +$$
$$\delta_2(l \arg e \ firm \times post1999)_{it} + \delta_3(treatment \times post1999)_{it} + \delta_4(l \arg e \ firm \times treatment)_i +$$
$$\delta_5(l \arg e \ firm \times treatment \times post1999)_{it}$$

d_t is a vector of year dummies. It controls for time-dependent variations in dual job holdings. X_{i0} is the usual vector of individual characteristics. The dummies $l \arg e \ firm_i$ and $treatment_i$ control for time-invariant characteristics of employees in large firms and of the treatment group, respectively. The second-level interactions control for changes over time in employees in large firms, changes over time in the treatment group and for firm-size specific characteristics of the treatment group. The third-level interaction is the DDD estimator and captures the differences in dual job holdings of the treatment group (relative to the control group), in large firms (relative to small firms) in the years after the law (relative to the years before the law).

Table 8 reports the results. There are fewer workers holding a second job in large firms than in small firms. As we would expect, the probability of having a second job is higher for employees who work less than 35 hours in the main job. The DDD coefficient is positive and significant at the 1 percent level, indicating that the law increased dual job holdings by 3.3 percentage points. This effect is quite large given the small proportion of workers who have a second job. Married women and women with small children are less likely to have a second job. Column (2) includes a control for real GDP growth interacted with the dummy for large firm to control for firm-size specific business cycle effects. The results are unchanged.

F.4. Transitions from Large to Small Firms

If workers in the covered sector are forced to work less than they desire, they may move to the uncovered sector. So, if there are no strong complementarities in leisure and the 35-hours mandate introduced distortions instead of working as a welfare improving coordination mechanism, we should see workers moving from large to small firms. We test this by looking at employees working in large firms and comparing the transitions to small firms of those who were working more than 35 hours (treatment group) relative to those who were working 35 hours or less (control group) before the law. We use the following specification:

$$(5) \ E[P(small_{it+2} = 1)] = \alpha + \gamma d_t + \beta X_{it} + \delta_0 treatment_i + \delta_1(treatment \times post1999)_{it}$$

where $small_{it+2}$ is equal to 1 if the worker was working in a large firm at time t and works in a small firm at time t+2 and zero if he stays in a large firm. The treatment group are employees working more than 35 hours at time t. We include time dummies and the usual set of controls.

The results are reported in Table 9. There is evidence that the law increased transitions from large to small firms by about 1.2 percentage points. The DD coefficient is positive and significant at the 1% level. Even though workers may have anticipated that the law would be applied to small firms in 2002, transitions from large to small firms increased as a result of the 35-hours mandate. The controls have the expected signs: a) individuals who work more than 35 hours tend to move less from large to small firms than individuals working fewer hours; b) older workers tend to move less; c) workers with less tenure tend to move more.

The evidence on dual-job holdings and on transitions from large to small firms supports the hypothesis that workers became less happy with the reduction in hours. And we find a significant increase in dual-job holdings and in transitions from large to small firms even with an increase in the hourly wage in large firms relative to small firms. We anticipate that, if there had been no increase in the relative wage in the covered sector, we would see even more dual-job holdings and more transitions from the covered to the uncovered sector.

F.5. Employment

Finally, we look at the effect of the 35-hours mandate on movements in and out of employment. Because the hourly wage in large firms increased relative to small firms to keep the monthly income unchanged, our model predicts that firms will fire existing employers, who became more costly, and replace them by outsiders, who do not have a reference monthly income.

To measure the effect of the law on transitions from employment to unemployment, we use the following specification:

$$(6) \quad E[P(unemployed_{it+2} = 1)] = \alpha + \gamma d_t + \beta X_{it} + \delta_0 treatment_i + \delta_1 (treatment \times post1999)_{it}$$

The treatment group are employees in large firms and the control group are employees in small firms. We restrict the sample to employees working more than 35 hours in the base year as those were the ones directly affected by the law. We classify individuals in the base year, i.e., the year in which they enter the panel, and see whether they are employed or unemployed two years later.

The results of the linear probability model are reported in Table 10. The law increased transitions from employment to unemployment between 1.3 and 1.7 percentage points. The controls have the expected signs: a) married workers are less likely to become unemployed; b) workers with less experience or with seasonal contracts are more likely to become unemployed.

To see whether the law increased transitions from unemployment to employment, we test whether unemployed workers are more likely to find a job in large firms relative to small

firms as a result of the restriction in hours. We run the following multinomial logit regression:

(7) $E[P(employment\ status_{it+2} = k)] = \Phi(\alpha + \gamma d_t + \beta X_{it} + \delta_0 unemployed_{it}$
$+ \delta_1(unemployed_{it} \times post1999_t) + \delta_2(unemployed_{it} \times unemployed\ less1\ year_{it}))$

where *employment status*$_{it+2}$ is an indicator equal to 1 if unemployed at time t+2, equal to 2 if employed in a large firm and equal to 3 if employed in a small firm. The independent variables are a set of time dummies, an indicator for unemployed at time t, an interaction of this variable with a post-1999 dummy, an interaction of unemployed with the duration of unemployment and the usual set of controls.

Table 11 reports the results of the multinomial logit regression taking the unemployed as the comparison group. The evidence suggests that workers who were unemployed at time t are likely to remain unemployed. When they find a job, it is more likely that they work in a small firm than in a large firm. After 1999 there was an increase in the probability of making a transition from unemployment to employment. This increase was significantly larger in large firms than in small firms (we reject the equality of the coefficients on *unemployed*$_{it} \times post1999_t$). Therefore, the evidence suggests that the 35-hours mandate increased transitions from unemployment to employment. Workers who have been unemployed for less than a year are more likely to find a job and they are more likely to find a job in a large firm than in a small firm.

The evidence on transitions in and out of employment suggests that the 35-hours mandate changed the composition of the labor force. Large firms replaced existing workers by cheaper outsiders. However, to measure the impact of the law on employment, it would be important to look not only at transitions in and out of employment but also at the net effect on employment. Unfortunately, our data does not allow us to measure the net effect on employment in a clear way. Because we are comparing employees in large and small firms, they are, by definition, employed. So, we do not have a treatment and a control group. But we can still have an idea about the net effect of the law on employment by comparing the evolution over time of employment in small and large firms. We run the following multinomial logit regression:

(8) $E[P(employment\ status_{it} = k)] = \Phi(\alpha + \gamma post1999_t + \beta X_{i0})$

where *employment status*$_{it}$ is an indicator equal to 1 if unemployed, equal to 2 if employed in a large firm and equal to 3 if employed in a small firm. The independent variables are the usual set of controls and a dummy for the period after the law.

Table 12 reports the results taking the unemployed as the comparison group. We can see that the probability of being employed relative to being unemployed increased after 1999, both in large and in small firms. The test for the equality of the two coefficients on *post*1999$_t$ does

not reject the hypothesis of the two coefficients being equal. The law seems to have had no net effect on employment. Employment increased after the law, but it did not increase more in large firms relative to small firms. This is a disappointing outcome given that the purpose of the law was to increase employment. Another way to see this is to plot the log of the probability of working in a large or in a small firm divided by the probability of being unemployed. Figure 8 shows that the log odds of employment by firm size are essentially parallel, suggesting that the 35-hours mandate had no net effect on employment.

G. Conclusions

The 35-hours mandate does not seem to have worked as a coordination mechanism that improved welfare in the presence of strong positive complementarities in leisure. Subjective measures of satisfaction with hours of work show that satisfaction with hours did not increase in France compared with other European countries after the law. Exploring the variation by firm size, we do not find evidence that employees in large firms, who were first affected by the reduction of the workweek, became more satisfied with their hours of work relative to employees in small firms. Additionally, our results show that the law increased the proportion of employees with more than one job by about 3.3 percentage points. This is a large effect, considering the small proportion of this type of individuals in the whole population. We also find that the law increased transitions from large to small firms by about 1.2 percentage points. And we find this significant increase in dual-job holdings and in transitions from large to small firms in spite of the fact that hourly wages increased in large firms relative to small firms.

The increase in wages in large firms relative to small firms provides additional evidence against strong complementarities in leisure. The theory of compensating differentials suggests that, if employees prefer to work more hours, wages should rise to compensate them for the loss in utility resulting from the hours constraint. Otherwise, they will quit and find a job with more desirable hours. There is evidence that the adjustment in relative wages led to a change in the composition of the labor force, with an increase in transitions in and out of employment. Firms replaced existing workers, whose cost increased, by workers coming from unemployment, who didn't have a reference monthly income. This was not an intended purpose of the law, which simply aimed at increasing the level of employment. Our empirical strategy does not allow precisely measuring the net effect of the 35-hours mandate on employment, as we lack a control group. But, from looking at the evolution over time of employment in large and small firms, it seems that the law did not have a large impact on employment.

Overall, our evaluation of the effects of the 35-hours workweek law is negative. It failed to achieve its objective of increasing employment and increased job turnover. Moreover, evidence from subjective measures of satisfaction with hours of work, dual-job holdings takeup, and transitions from large to small firms consistently suggests that workers were constrained by the mandated reduction in hours. The 35-hours mandate did not work as a

coordination mechanism in the presence of strong complementarities in leisure. Instead, it apparently introduced a distortion in workers' choices and made them less happy.

Table 1: Preferences for Hours of Work

	More Hours More Income	Same Hours Same Income	Less Hours Less Income
GE	21.892	69.075	9.033
UK	22.814	70.913	6.274
US	32.889	56.858	10.253
HUN	38.143	56.716	5.141
ITA	33.333	59.740	6.926
NL	19.156	69.332	11.511
NOR	11.625	73.475	14.900
SWE	17.246	66.281	16.474
CZ	37.622	56.920	5.458
SLO	36.095	60.750	3.156
POL	55.925	41.580	2.495
BUL	67.686	31.223	1.092
RUS	76.486	22.721	0.793
NZ	29.539	63.689	6.772
CND	28.930	61.371	9.699
PHIL	48.542	44.082	7.376
ISR	43.458	50.512	6.030
JAP	23.649	60.270	16.081
SPA	29.851	63.433	6.716
FRA	20.031	65.062	14.907
CYP	26.290	61.398	12.313
POR	45.091	50.685	4.224
DEN	10.756	75.581	13.663
CH	13.414	69.789	16.798
BANG	60.430	38.280	1.290
Average	34.036	57.589	8.375

Data: ISSP 1997, Work Orientations II.

Table 2: Willingness to Work Fewer Hours per Week so That More Jobs Can be Created

weekly hours of work	0.007***
	(0.001)
union member	0.083***
	(0.018)
number of children under 15	-0.014*
	(0.008)
Belgium	-0.110**
	(0.056)
Netherlands	-0.112***
	(0.038)
West Germany	-0.207***
	(0.041)
Italy	0.013
	(0.044)
Luxembourg	-0.158***
	(0.052)
Denmark	-0.115***
	(0.039)
Ireland	-0.082*
	(0.051)
Great Britain	-0.178***
	(0.040)
Northern Ireland	-0.122
	(0.079)
Greece	-0.137***
	(0.047)
Spain	-0.189***
	(0.048)
Portugal	0.018
	(0.040)
East Germany	-0.171***
	(0.043)
Finland	-0.159***
	(0.043)
Sweden	-0.082**
	(0.040)
Austria	-0.247***
	(0.042)

Data: Eurobarometer 44.3, Feb/April 1996.
NOTE – Robust standard errors are reported in parentheses. Probit estimates give the change in the probability of being willing to work less. The dependent variable is an indicator equal to 1 if individual says he would be willing to work less so that more jobs could be created and 0 otherwise. Omitted country is France. Regression includes controls for job satisfaction, satisfaction with hours of work, gender, marital status, age, age-squared, occupation and household income. The sample is limited to employees. *** denotes significance at the 1% level, ** denotes significance at the 5% level and * denotes significance at the 10% level. Number of observations: 4486.

Table 3: Summary Statistics

| | 35 Hours or Less | | | | More than 35 Hours | | | |
| | Large Firms | | Small Firms | | Large Firms | | Small Firms | |
	1993-1997	1998-2000	1993-1997	1998-2000	1993-1997	1998-2000	1993-1997	1998-2000
percentage female	85.460	79.279	85.162	79.447	34.072	32.602	35.999	33.800
	(35.257)	(40.567)	(35.550)	(40.420)	(47.397)	(46.886)	(48.000)	(47.308)
percentage married	80.162	76.396	79.254	76.511	80.035	75.325	75.793	73.933
	(39.885)	(42.503)	(40.551)	(42.405)	(39.739)	(43.122)	(42.835)	(43.905)
average net monthly income (francs)	5671.961	5036.295	4578.945	4234.521	7922.348	9450.667	8526.168	9094.425
	(21667.760)	(5036.926)	(18968.900)	(2621.242)	(4645.550)	(36615.400)	(31722.900)	(36429.050)
average age	40.843	40.369	40.010	40.809	39.389	39.907	37.987	38.168
	(10.334)	(9.364)	(10.376)	(10.544)	(9.987)	(9.953)	(10.363)	(10.704)
percentage with tenure less than 1 year	18.600	13.694	20.077	20.207	8.378	10.269	14.201	16.567
	(38.918)	(34.409)	(40.060)	(40.166)	(27.707)	(30.362)	(34.907)	(37.182)
percentage CEP	33.188	34.926	34.413	33.018	35.188	31.256	30.812	27.125
	(47.098)	(47.718)	(47.511)	(47.042)	(47.758)	(46.364)	(46.173)	(44.466)
percentage BEPC	8.267	3.309	8.025	7.915	6.089	4.413	7.300	6.169
	(27.544)	(17.903)	(27.170)	(27.005)	(23.914)	(20.543)	(26.015)	(24.062)
percentage CAP or BEP	24.288	25.919	27.810	28.234	38.267	39.627	40.269	39.604
	(42.891)	(43.859)	(44.809)	(45.027)	(48.606)	(48.923)	(49.045)	(48.913)
percentage Baccalaureat	12.540	15.993	12.396	14.649	9.388	10.646	10.355	13.657
	(33.123)	(36.688)	(32.955)	(35.370)	(29.167)	(30.850)	(30.469)	(34.343)
percentage Baccalaureat+2 years	11.907	12.132	10.800	9.687	7.336	8.781	6.976	9.042
	(32.393)	(32.680)	(31.040)	(29.587)	(26.073)	(28.308)	(25.474)	(28.681)
percentage higher degree	9.870	7.721	6.556	6.497	3.732	5.278	4.287	4.403
	(29.751)	(26.716)	(24.753)	(24.655)	(18.956)	(22.364)	(20.257)	(20.519)
average hours in primary job	23.920	23.955	22.703	23.069	40.564	40.541	41.190	40.992
	(7.032)	(7.561)	(7.401)	(7.327)	(4.436)	(4.644)	(5.731)	(5.270)
average hours in second job	0.704	0.845	0.925	1.110	0.125	0.075	0.136	0.108
	(3.588)	(3.888)	(4.066)	(4.535)	(1.680)	(1.277)	(1.714)	(1.185)

Data: Enquete Emploi, 1993-2000.

NOTE – Standard errors are reported in parentheses. CEP (Certificat d'etudes primaires) corresponds to approximately 5 years of education. BEPC (Brevet d'etudes du premier cycle) to approximately 9 years. CAP and BEP are technical degrees and correspond to approximately 10 years of education. The Baccalaureat corresponds to 12 years of education. Small firms have less than 20 employees. Large firms have between 20 and 49 employees. The sample is limited to employees under age 64 with positive net monthly income.

Table 4: Distribution of Usual Weekly Hours of Work for Employees in Small and Large
Firms (%)

	Less than 20 Employees					20 Employees or More				
	Above 39	39	35-39	35	Below 35	Above 39	39	35-39	35	Below 35
1990	30.89	48.26	2.57	1.35	16.94	20.43	50.88	9.37	2.17	10.03
1991	29.83	48.13	2.51	1.53	18	20.43	50.63	9.21	2.07	10.49
1992	28.8	48.06	2.77	1.34	19.02	20.46	51.36	8.6	2.09	10.61
1993	27.76	47.66	2.6	1.36	20.62	19.65	51.18	8.52	2.22	11.9
1994	25.38	48.44	2.17	1.44	22.57	18.89	51.52	8.05	2.23	13.12
1995	24.93	47.99	2.14	1.32	23.62	19.22	50.58	8.36	2.24	13.66
1996	23.22	48.77	2.07	1.23	24.71	18.21	51.62	8.08	2.43	13.7
1997	22.32	50.12	2.19	1.27	24.1	17.31	50.95	8.07	2.62	14.78
1998	22.63	48.46	2.19	1.81	24.91	17.7	48.19	8.3	3.87	16.05
1999	21.49	49.02	2.25	2.46	24.78	16.44	47.43	8.66	5.48	15.88
2000	21.39	44.64	2.2	7.2	24.57	14.46	30.66	8.64	24.43	15.76
2001	21.7	41.33	3.27	11.86	21.82	13.49	18.9	8.47	35.68	13.53
2002	17.35	21.54	4.75	33.73	22.62	13.38	9.99	9.71	45.42	15.42

Data: Enquete Emploi, 1990-2002.
NOTE – The sample excludes self-employed individuals.

Table 5: Wages, Hours and Monthly Income

Dependent Variable	Usual Weekly Hours		Log Hourly Wage		Log Monthly Income	
	(1)	(2)	(1)	(2)	(1)	(2)
large firm	-0.334***	-0.244**	0.019***	0.013***	0.014***	0.013***
	(0.077)	(0.108)	(0.003)	(0.002)	(0.001)	(0.002)
large firm*post1999	-0.374**	-0.308*	0.017***	0.013***	0.002	0.002
	(0.142)	(0.159)	(0.003)	(0.004)	(0.003)	(0.003)
female	-1.21***	-1.211***	-0.013**	-0.013**	-0.041***	-0.041***
	(0.146)	(0.146)	(0.006)	(0.006)	(0.003)	(0.003)
married	0.223*	0.221**	0.037***	0.037***	0.045***	0.045***
	(0.082)	(0.082)	(0.003)	(0.003)	(0.003)	(0.003)
female*married	-1.191***	-1.189***	0.006	0.006	-0.032***	-0.032***
	(0.1)	(0.099)	(0.007)	(0.007)	(0.005)	(0.005)
children under 6	-0.056	-0.056	0.002	0.002	0.002	0.002
	(0.073)	(0.073)	(0.004)	(0.004)	(0.003)	(0.003)
female*children under 6	-0.73***	-0.731***	-0.003	-0.003	-0.026***	-0.026***
	(0.15)	(0.15)	(0.005)	(0.005)	(0.004)	(0.004)
age	-0.086*	-0.086**	0.026***	0.026***	0.024***	0.024***
	(0.03)	(0.03)	(0.001)	(0.001)	(0.001)	(0.001)
tenure less than 1 year	0.403***	0.403***	-0.044***	-0.044***	-0.033***	-0.033***
	(0.11)	(0.12)	(0.004)	(0.004)	(0.003)	(0.003)

Data: Enquete Emploi, 1993-2000.

NOTE – Robust standard errors adjusted for clustering by year/firm size are reported in parentheses. Hourly wage is monthly wage divided by (4.33*usual weekly hours). Large firm is an indicator equal to 1 for employees in firms between 20 and 49 employees and 0 for employees in firms with less than 20 employees. Column (2) controls for size-specific cyclical effects, interacting real GDP growth with the large firm dummy. Regression also includes a set of year dummies, controls for region effects, education and age-squared. The sample is limited to employees under age 64 with net monthly income between 10% below and 100% above the minimum wage. *** denotes significance at the 1% level, ** denotes significance at the 5% level and * denotes significance at the 10% level. Number of observations: for log hourly wage 31375, for usual weekly hours 31378, for log monthly income 33709.

Table 6: Satisfaction With Hours of Work in 1996 and 2001

year 2001	-0.125***
	(0.022)
France	-0.179***
	(0.052)
year 2001*France	0.017
	(0.078)
union member	0.175***
	(0.023)
married	0.062**
	(0.025)
female	0.105***
	(0.023)
age	-0.021***
	(0.006)
age squared	0.0004***
	(0.0001)

Data: Eurobarometer 44.3, Feb/April 1996; Eurobarometer 56.1, Sep/Oct 2001.
NOTE – Robust standard errors are reported in parentheses. Ordered probit estimation. Dependent variable is a measure of satisfaction with hours worked in increasing order, from very dissatisfied to very satisfied. Regression also includes controls for occupation and household income. The sample is limited to employees. *** denotes significance at the 1% level, ** denotes significance at the 5% level and * denotes significance at the 10% level. Number of observations: 9567.

Table 7: DDD Estimates of the Impact of the Workweek Reduction on Dual Job Holdings

	Before law	After law	Time difference
Control group			
Small Firms	0.091	0.11	0.019
	(0.287)	(0.314)	
	[8150]	[1421]	
Large Firms	0.073	0.067	-0.006
	(0.261)	(0.25)	
	[2397]	[447]	
			Difference in differences
Firm Size difference	-0.018	-0.043	-0.025
Treatment group			
Small Firms	0.015	0.014	-0.001
	(0.121)	(0.116)	
	[23499]	[4086]	
Large Firms	0.013	0.014	0.001
	(0.112)	(0.118)	
	[12639]	[2064]	
			Difference in differences
Firm Size difference	-0.002	0	0.002
DDD	0.027		
	(0.009)		

Data: Enquete Emploi, 1993-2000.
NOTE - Standard errors in parentheses and number of observations in square brackets. Control group are employees working less than 35 hours in the base year. Treatment group are employees working 35 hours or more in the base year. Experimental group are employees working in firms with 20 to 49 employees in the base year. Non experimental group are employees working in firms with less than 20 employees in the base year. The sample is limited to employees under age 64 with positive net monthly income.

Table 8: DDD Estimates of the Impact of the Workweek Reduction on Dual Job Holdings –
Regression Framework

	(1)	(2)
large firm	-0.016**	-0.012
	(0.007)	(0.008)
treatment	-0.081***	-0.081***
	(0.004)	(0.004)
large firm*post1999	-0.032***	-0.029***
	(0.008)	(0.008)
treatment*post1999	-0.019***	-0.019***
	(0.007)	(0.007)
large firm*treatment	0.012	0.012
	(0.007)	(0.007)
large firm*treatment*post1999	0.033***	0.033***
	(0.008)	(0.008)
female	0.012**	0.012**
	(0.005)	(0.005)
married	0.003	0.003
	(0.002)	(0.002)
female*married	-0.025***	-0.025***
	(0.006)	(0.006)
children under 6	0.001	0.001
	(0.002)	(0.002)
female*children under 6	-0.009***	-0.009***
	(0.003)	(0.003)
age	0.002***	0.002***
	(0.001)	(0.001)
tenure less than 1 year	-0.007*	-0.007*
	(0.004)	(0.004)

Data: Enquete Emploi, 1993-2000.
NOTE – Robust standard errors adjusted for clustering by year/firm size/treatment are reported in parentheses.
The dependent variable is an indicator equal to 1 if the worker has a second job and 0 otherwise. Large firm is
an indicator equal to 1 for employees in firms between 20 and 49 employees and 0 for employees in firms with
less than 20 employees. The treatment group are employees working more than 35 hours in the main job in the
base year. The control group are employees working 35 hours or less in the main job in the base year. Column
(2) controls for size-specific cyclical effects, interacting real GDP growth with the large firm dummy.
Regression also includes a set of year dummies, controls for region effects, education, net monthly income in
the base year and age-squared. The sample is limited to employees under age 64 with positive net monthly
income. *** denotes significance at the 1% level, ** denotes significance at the 5% level and * denotes
significance at the 10% level. Number of observations: 49806.

Table 9: DD Estimates of the Impact of the Workweek Reduction on Transitions from Large to Small Firms

treatment	-0.017***
	(0.004)
treatment*post1999	0.012***
	(0.003)
age	-0.005***
	(0.002)
tenure less than 1 year	0.068***
	(0.006)

Data: Enquete Emploi, 1993-2000.

NOTE – Robust standard errors adjusted for clustering by year/treatment are reported in parentheses. The dependent variable is an indicator equal to 1 if the worker works in a small firm and 0 otherwise. The treatment group are employees working more than 35 hours in large firms in the base year. The control group are employees working 35 hours or less in large firms in the base year. Regression also includes a set of year dummies, controls for region effects, education, net monthly income in the base year, gender, marital status, an interaction of gender and marital status, number of children under 6, an interaction of gender and number of children under 6 and age-squared. The sample is limited to individuals working in a large firm (more than 20 employees) in the base year, under age 64 and with positive net monthly income. *** denotes significance at the 1% level, ** denotes significance at the 5% level and * denotes significance at the 10% level. Number of observations: 33234.

Table 10: Transitions from Employment to Unemployment

	(1)	(2)
large firm	-0.01***	-0.003
	(0.002)	(0.004)
large firm*post1999	0.013***	0.017***
	(0.003)	(0.004)
female	-0.001	-0.001
	(0.006)	(0.006)
married	-0.013**	-0.013**
	(0.006)	(0.006)
female*married	0.01	0.01
	(0.006)	(0.006)
children under 6	0.001	0.001
	(0.003)	(0.003)
female*children under 6	-0.007	-0.007
	(0.004)	(0.004)
tenure less than 1 year	0.08***	0.08***
	(0.005)	(0.005)
seasonal contract	0.096*	0.096*
	(0.045)	(0.045)

Data: Enquete Emploi, 1993-2000.
NOTE – Robust standard errors adjusted for clustering by year/firm size are reported in parentheses. The dependent variable is an indicator equal to 1 if the individual is unemployed in year t and 0 otherwise. Large firm is an indicator equal to 1 for employees in firms between 20 and 49 employees and 0 for employees in firms with less than 20 employees. Column (2) controls for size-specific cyclical effects, interacting real GDP growth with the large firm dummy. Regression also includes a set of year dummies, controls for region effects, education, age and age-squared. The sample is limited to employees working more than 35 hours in the base year, who are under age 64 and have positive net monthly income. *** denotes significance at the 1% level, ** denotes significance at the 5% level and * denotes significance at the 10% level. Number of observations: 13321.

Table 11: Transitions from Unemployment to Employment

	(1)	(2)
	Log[P(large)/P(unemployed)]	Log[P(small)/P(unemployed)]
unemployed	-2.664***	-2.41***
	(0.187)	(0.205)
unemployed*post1999	1.767***	1.631***
	(0.21)	(0.209)
unemployed*unemployed less than a year	0.583***	0.471***
	(0.113)	(0.094)
female	0.027	0.088
	(0.085)	(0.13)
married	0.852***	0.72***
	(0.083)	(0.069)
female*married	-0.745***	-0.535***
	(0.083)	(0.093)
children under 6	-0.069	-0.011
	(0.084)	(0.082)
female*children under 6	-0.295***	-0.339***
	(0.09)	(0.105)
age	0.084***	0.053**
	(0.031)	(0.023)
p-value of test for equality of coefficients on unemployed*post1999		0.01

Data: Enquete Emploi, 1993-2000.
NOTE – Robust standard errors adjusted for clustering by year/unemployed in base year are reported in parentheses. Multinomial logit estimation. The comparison group is the unemployed. Estimates give the change in the log odds ratio for a one-unit change in the independent variable. Large firm have between 20 and 49 employees. Small firms have less than 20 employees. Unemployed in the base year is an indicator equal to 1 if the worker was unemployed in the base year and 0 otherwise. Unemployed less than a year is an indicator equal to 1 if the worker was unemployed in the base year and the duration of the unemployment was less than a year and 0 if the duration of unemployment was more than a year. Regression also includes a set of year dummies, controls for region effects, education and age-squared. The sample is limited to employees under age 64 with positive net monthly income. *** denotes significance at the 1% level, ** denotes significance at the 5% level and * denotes significance at the 10% level. Number of observations: 14126.

Table 12: Employment

	(1) Log[P(large)/P(unemployed)]	(2) Log[P(small)/P(unemployed)]
post1999	0.084***	0.068***
	(0.027)	(0.023)
female	-0.085**	-0.036
	(0.038)	(0.03)
married	1.072***	0.937***
	(0.034)	(0.028)
female*married	-0.719***	-0.459***
	(0.045)	(0.037)
children under 6	-0.047*	0.025
	(0.026)	(0.023)
female*children under 6	-0.283***	-0.389***
	(0.038)	(0.031)
age	0.131***	0.089***
	(0.007)	(0.006)
p-value of test for equality of coefficients on post1999		0.487

Data: Enquete Emploi, 1993-2000.
NOTE – Robust standard errors are reported in parentheses. Multinomial logit estimation. The comparison group is the unemployed. Estimates give the change in the log odds ratio for a one-unit change in the independent variable. Large firm have between 20 and 49 employees. Small firms have less than 20 employees. Regression also includes a set of year dummies, controls for region effects, education and age-squared. The sample is limited to employees under age 64 with positive net monthly income. *** denotes significance at the 1% level, ** denotes significance at the 5% level and * denotes significance at the 10% level. Number of observations: 91144.

Figure 1. Evolution of Annual Hours Worked per Person Employed in Europe, U.S. and Japan
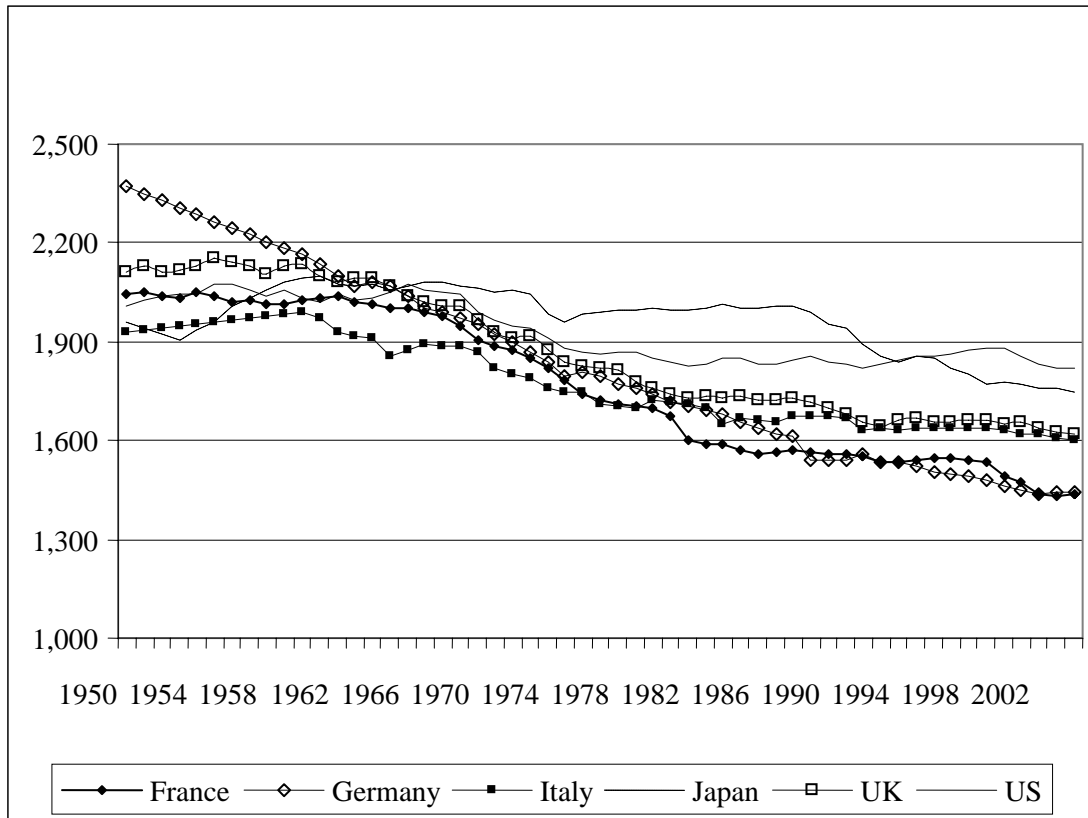
Data: Groningen Growth and Development Centre and The Conference Board, Total Economy Database, August 2005, http://www.ggdc.net

Figure 2. Willingness to Work Fewer Hours per Week so that More Jobs can be Created
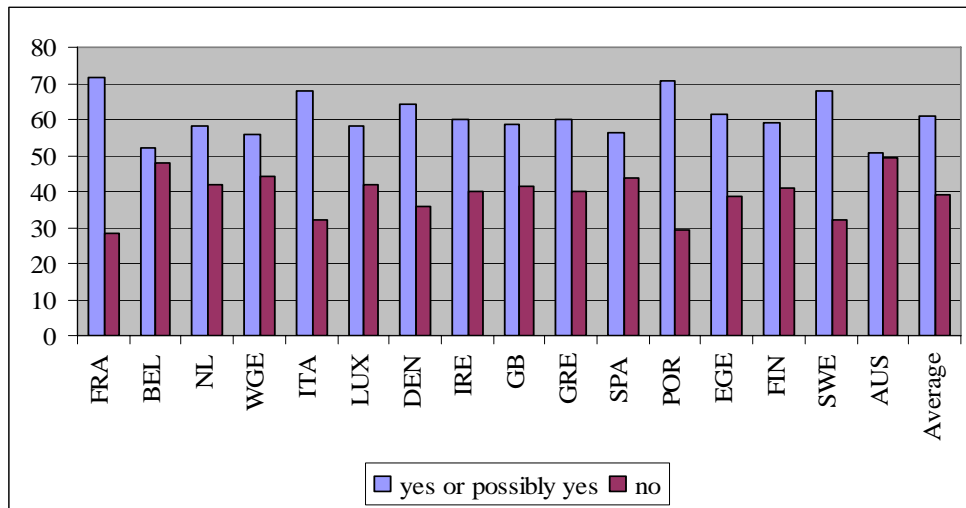
Data: Euro barometer 44.3, Feb/April 1996.
NOTE – The question asked is: "Some people say that if fewer hours were worked each week, there would be more free time, more work available, and new jobs could therefore be created. Irrespective of your current situation at work, would you personally be prepared to work fewer hours per week, yes or no?
Yes; possibly yes, depending on what I would earn; No".

Figure 3. Percentage of Employees Who Think that the First Priority to Combat
Unemployment Should be a Reduction in Weekly Hours of Work
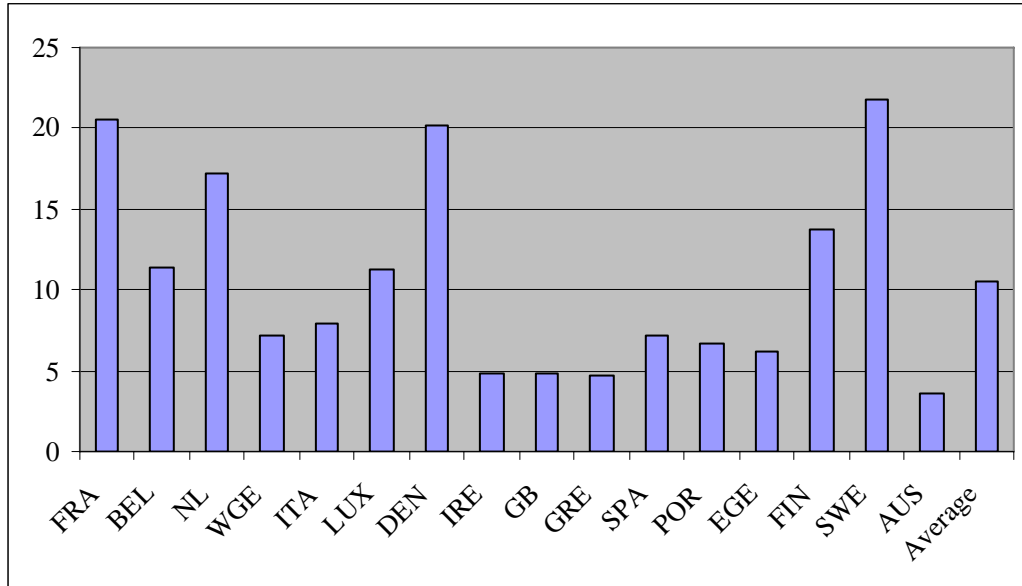
Data: Euro barometer 44.3, Feb/April 1996.
NOTE – The question asked is: "What do you think should be the first priority for combating unemployment?
1. Stimulate the economy
2. Reduce unemployment benefits
3. Reduce employers' social security contributions
4. Improve educational and vocational training
5. Reduce free movement of workers between the countries of the EU
6. Increase free movement of workers between the countries of the EU
7. Reduce weekly working hours
8. Reduce taxes
9. Increase taxes
10. Reduce cooperation between the countries of the EU
11. Increase cooperation between the countries of the EU"

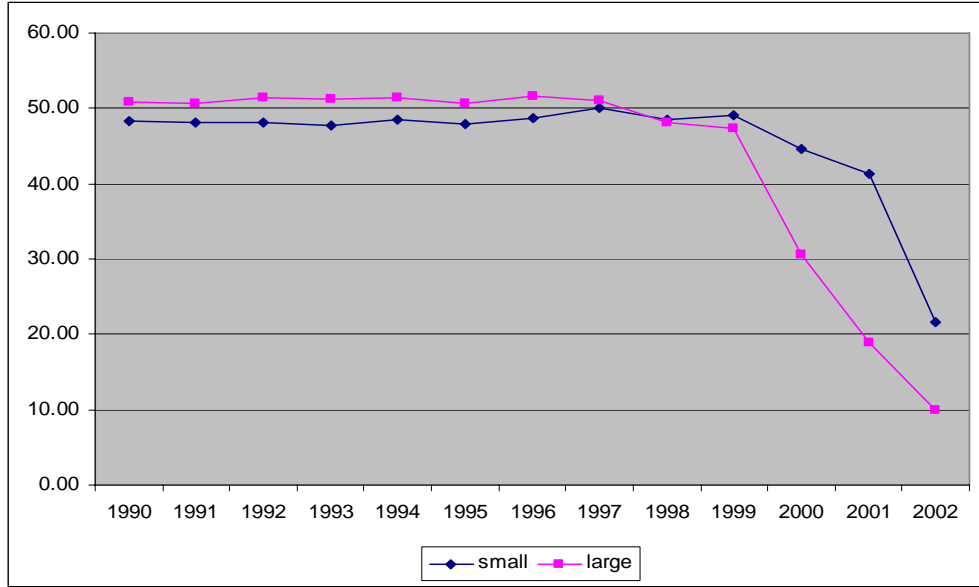Figure 4: Unemployment Rate in France, 1993-2004
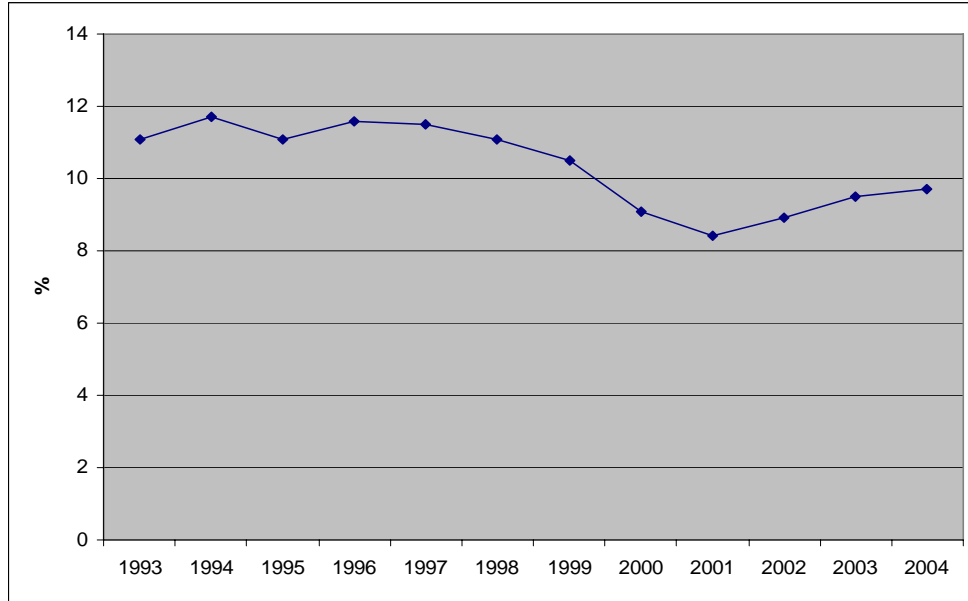
Data: Eurostat.

Figure 5: Usual Weekly Hours Worked by Full Time Employees
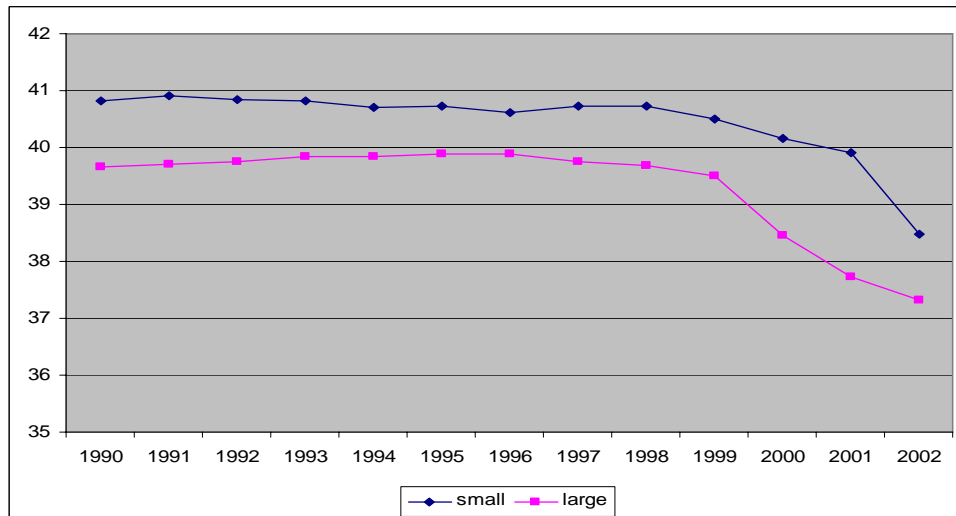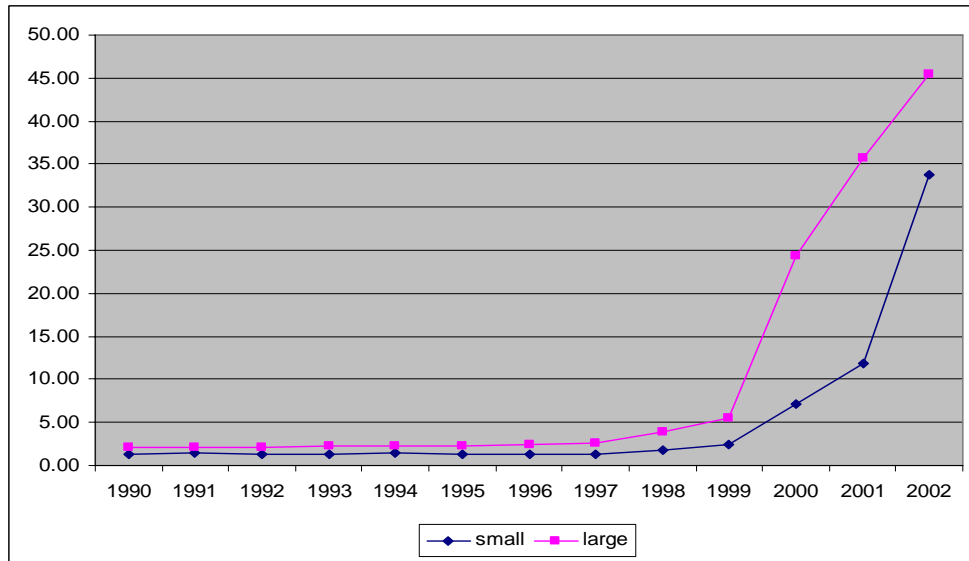

Data: Enquete Emploi.

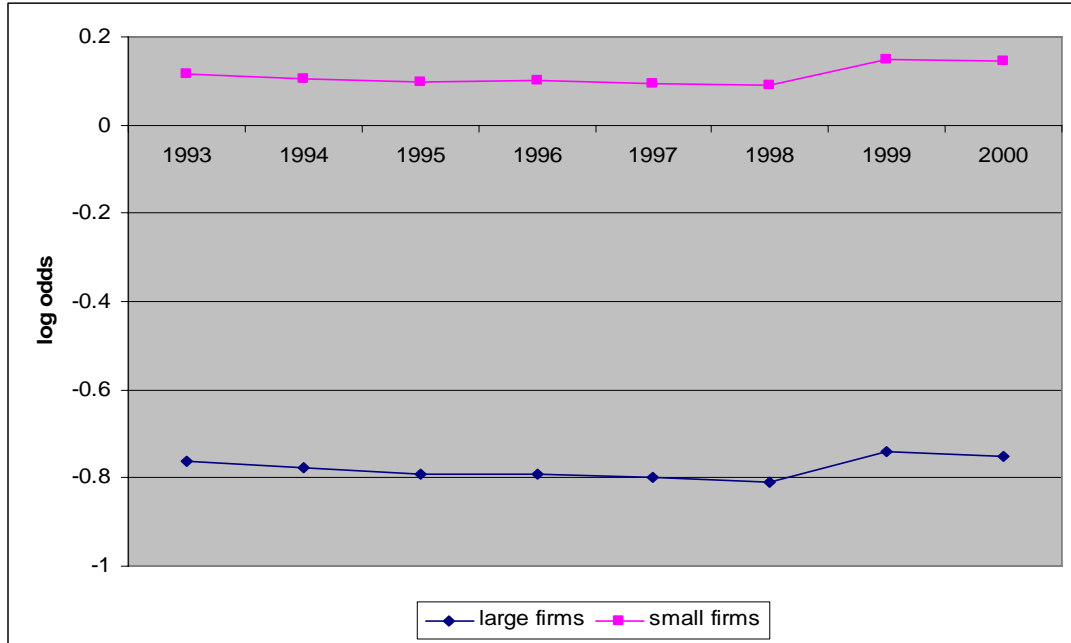Figure 6: Percentage of Employees Working 39 Hours per Week in Small and Large Firms

Data: Enquete Emploi.

Figure 7: Percentage of Employees Working 35 Hours per Week in Small and Large Firms

Data: Enquete Emploi.

Figure 8: Multinomial Logit Plot of log Employment Probabilities by Firm Size

Data: Enquete Emploi.

References

Alesina, Alberto, Edward Glaeser and Bruce Sacerdote. 2005. "Work and Leisure in the U.S. and Europe: Why So Different?". *NBER Macroeconomics Annual 2005*.

Altonji, Joseph G. and Christina H. Paxson. 1985. "Hours-Wage Tradeoffs and Job Mobility." Working Paper no. 199. Industrial Relations Section. Princeton University.

Altonji, Joseph G. and Christina H. Paxson. 1988. "Labor Supply Preferences, Hours Constraints, and Hours-Wage Trade-offs." *Journal of Labor Economics*, vol. 6, no.2, 254-276.

Blanchard, Olivier. 2004. "The Economic Future of Europe". *Journal of Economic Perspectives*. Vol. 18, no. 4, Fall 2004, 3-26.

Calmfors, Lars and Michael Hoel. 1988. "Work Sharing and Overtime". *Scandinavian Journal of Economics*, vol. 90(1), 45-62.

Cooper, Russell and Andrew John. 1988. "Coordinating Coordination Failures in Keynesian Models". *The Quarterly Journal of Economics*. Vol. 103, no. 3, Aug. 1988, 441-463.

Crepon, Bruno and Francis Kramarz. 2002. "Employed 40 Hours or Not Employed 39: Lessons from the 1982 Mandatory Reduction of the Workweek". *Journal of Political Economy*, vol. 110, no. 6, 1355-1389.

Crepon, Bruno, Marie Leclair and Sebastien Roux, "RTT, Productivite et Emploi: Nouvelles Estimations sur Donnees d'Enterprises". INSEE *Economie et Statistique*, no 376-377, 2004.

Diener, E. and E. Suh. 1999. "National Differences in Subjective Well-Being." In Kahneman, D., E. Diener and N. Schwarz (eds.) "Well-Being: the Foundations of Hedonic Psychology." New York: Russell Sage Foundation.

Estevão, Marcello and Nigar Nargis. 2002. "Wage Moderation in France". *IMF Working Paper*, WP/02/151.

Freeman, Richard. 1998. "Work-Sharing to Full Employment: Serious Option or Populist Fallacy?", in *Generating Jobs: How to Increase Demand for Less-Skilled Workers*. Richard Freeman and Peter Gottschalk (editors). Russell Sage Foundation. New York.

Hunt, Jennifer. 1998. "Hours Reductions as Work-sharing". *Brookings Papers on Economic Activity*, 1:1998, 339-381.

Hunt, Jennifer. 1999. "Has Work-Sharing Worked in Germany?". *The Quarterly Journal of Economics*, vol. 114, no. 1, 117-148.

Kapteyn, Arie, Adriaan Kalwij and Asghar Zaidi. 2000. "The Myth of Work sharing". Center for Economic Research, no. 2000-23, February 2000.

Landers, Renee M., James B. Rebitzer and Lowell J. Taylor. 1996. "Rat Race Redux: Adverse Selection in the Determination of Work Hours in Law Firms". *The American Economic Review*, Vol. 86, no. 3, Jun. 1996, 329-348.

Lang, Kevin and Shulamit Kahn. 2001. "Hours Constraints: Theory, Evidence, and Policy Implications", in *Working Time in Comparative Perspective. Vol. 1: Patterns, Trends, and the Policy Implications of Earnings Inequality and Unemployment*. Ging Wong and Garnett Picot (editors). W. E. Upjohn Institute for Employment Research. Kalamazoo, Michigan.

Prescott, Edward C. 2004. "Why Do Americans Work So Much More Than Europeans?". *Federal Reserve Bank of Minneapolis Quarterly Review*. Vol. 28, no. 1, July, 2-13.

Rubin, Donald B. 1974. "Estimating Causal Effects of Treatments in Randomized and Nonrandomized Studies." *J. Educational Psychology*. No 66, October, 688-701.