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ABSTRACT

A Primer on the 35-Hour in France, 1997–2007*

France has experienced massive changes in its regulation of working time during the last decade. These changes generate natural experiments that may help to study a variety of issues in labor economics, including work sharing effect on job creation or productivity, labor relations or adaptation of firms to regulation. This paper provides a primer for researchers interested by working on these issues. It includes detailed information about the 35-hour laws and their progressive removal, and discusses the first wave of research evaluating these policies, that draws a contrasted picture. It also highlights some unexplored lines of research.

JEL Classification: J20, J30, J51, L23

Keywords: France, 35-hour week, working time, bargaining

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* This paper extends and updates two previous articles, Askenazy (2007) and Askenazy *et al.* (2004).

Most analysts are often perplexed by the 35-hour work week, introduced by the French government nearly a decade ago. Actually, the regulation of full time work in France has been and is still characterized by major and extremely complex reforms. These changes generate natural experiments that may help to study a variety of issues in labor economics, including work sharing effect on job creation or productivity, labor relations or adaptation of firms to regulation. Some recent papers conducted by non-French researchers have opened up interesting lines of research. But the lack of an accurate understanding of the regulation in France is still an important barrier for research. Even French specialists have huge difficulties in obtaining a clear view of the legislation.

This paper aims to stimulate extensive international research on working time in France, by providing basic information about the 35-hour working week, recent policy changes and the first wave of research evaluating these policies. This paper also highlights some unexplored lines of research.

It is organized in two parts. The first part provides a comprehensive history of recent reforms in France, their political sources and the roles of the actors involved (politicians, unions, employers). The second part reviews the case studies and evaluations of the impacts of these changes: most of these assessments are reports and papers in French and generally unknown outside France. Overall, the implementation of the 35-hour week and the subsequent counter-reforms seem to have had a small macroeconomic impact, e.g. limited job creation, and little reduction in working time. But they also seem to have had potentially significant microeconomic consequences, e.g. the development of working time flexibility, and increasing inequalities.

1. The main evolutions of the regulation of worked hours in France. 1981-2007

1.1 Historical conditions

Following the left's electoral victory in 1981, the government aimed to expand employment by making reduction of work time ("RTT," "la réduction du temps de travail") a priority of labor policy. This revived a principle from the Popular Front of 1936: the issue then was a 40-hour week and the introduction of two weeks of paid vacations.

The objective in 1981 was to reduce step by step the legal work limit to... 35 hours by 1985. When negotiations between unions¹ and employers bogged down, a law was passed reducing the work week to 39 hours. A fifth week of paid vacation was granted. Hours worked in excess of 39 would be paid at overtime rates. This should be just the first step. But after 1982-83, facing a rapid depreciation of the Franc and deep deficits the government changed its general economic policy: “la rigueur”. Reducing more working time and the goal of 35 hours were abandoned.

At the same time, negotiations between unions and employers in other European states, sometimes pushed along by governments, led to a reduction in full work time for about half the work force in countries like Germany and Netherlands. France didn't follow this trend. From 1983 to 1996, the only factor reducing work time in France was a composition effect: increasing part-time labor, stimulated by specific state incentives.

By the 1990s, the idea of RTT returned in order to address persistent mass unemployment, far above 10%. The conservative government accepted to initiate it with the “Robien” law in June 1996. This law aimed to encourage 10 % or 15% voluntary reductions of hours worked and the creation of jobs in proportion to the reductions through massive government incentives to companies, a state-financed cut in social insurance contributions during 7 years. The process met with some success², but unemployment persisted.

After the President Chirac unexpectedly dissolved parliament in the spring of 1997, legislative elections brought the Socialist party back to power at the head of a left coalition. It had to put together quickly a program to reduce unemployment, which had by then reached a record level of 12.5 percent. The project focused on youth unemployment and the idea of a 35-hour work week. I.e., it wanted simply to achieve the left promise in 1981.

¹ Five major labour confederations, with widely varying orientations, compete in France.

² About 1% of the workforce was concerned; see Fiole *et al.* (2000) for a complete description.

Box 1: Main laws concerning full working time in France 1981-2007

1982: 39-hour week and 5 paid vacation weeks. Overtimes are paid at least with a 25% bonus. Up to 130 overtime hours per year. Limited possibility of flexible work schedules.

1996: Robien law. Huge subsidies for significant reduction in working time associated with job creations in the same proportion.

1998: Aubry I: Announce of the 35-hour week for large firms in 2000 and for small firms (<20 workers) in 2002. Financial incentive for immediate reductions of worked hours and some job creations. Reduction of days worked for managers (except top ones). Simplified implementation of time flexibility according to agreements between employer and workers' representatives.

2000: Aubry II: Confirm the 35-hour reference. Permanent social tax cuts (concentrated near the minimum wage for firms applying a 35-hour agreement. Reduction can be achieved through a partial redefinition of worked time (breaks etc.). "Annualization" of working time: full working time for non-managers = 1600 hours per year; for managers = 217 days. Maximal contingent of 130 overtime hours paid with a 10% or 25% bonus. Transition period for small firms.

2003-2004: Fillon adjustments: Permanent social tax cuts for all firms. Contingent of 220 overtime hours.

2007: Sarkozy's "working more for earning more": 25% bonus for overtime hours (>1607 hours per year). Suppression of fiscal charges on overtimes and cuts in employer's social contribution. Increase of days worked by managers.

1.2 From the first 35-hour law to the eve of the second law: a bargaining process

Private employers denounced the proposals, but the arguments of the political opposition were undermined by the earlier passage of the Robien law that was supported by both employers and the right. As in 1982, the Socialists encouraged a negotiated RTT, pledging later ratification of agreements by law. The socialist government sought to negotiate the law's formulation with all the interested parties through a national conference on employment, wages, and work time in October 1997. The avowed aim was a 35-hour law by the end of 1998. Small companies would be granted special dispensation (an 2 extra years to reach the goal), and financial incentives would be provided to companies that negotiated on their own a reduction in work time. But the 1997 conference didn't achieve a consensus. The main employers' organization began active opposition to the proposed law. The employers, who soon reorganized as Mouvement des

Entreprises de France (MEDEF), argued that, unlike the Robien law, the “35 Hours” made changes obligatory (rather than optional) for all companies.

Two “Aubry”³ laws were eventually passed and concerned only the private sector. They aimed to link legal reduction of work-time to active encouragement of negotiations in sectors of the economy. This would enable trade unions and employers’ organizations to shape the content and implementation of the law. This was an ambitious approach since large sectors of the French economy are not unionized: France has the lowest rate of private sector unionization (5 percent) in the OECD; this rate remained stable in the last decade.

The Socialists passed the first law in June 1998. Aubry I had two parts. First it set the legal limit of the work week in the private sector at 35 hours, to begin on January 1, 2000 for companies with more than 20 employees (two years later for others). Overtime would be paid at a higher rate. Then Aubry I delayed the detailing of important matters like definition of work time, overtime hours, work time of management employees, part time issues. These were to come in a second law which would be enacted after negotiations with representatives of the different sectors of the economy together with companies and corporations. Consequently, Aubry I did not impose 35-hours immediately but envisioned a two-stage process whose success depended, finally, on agreements that were to be negotiated relatively quickly. To stimulate bargaining, the law encouraged companies to reduce work hours by 10% and increase the number of employees by 6% before legal deadlines were set by granting financial incentives to alleviate labor cost, especially close to the minimum wage : they reduces labor costs by about 8% for workers paid closed to the minimum wage

The idea of additional social taxes cuts was thus to compensate, along with expected productivity gains, the increase of nominal low hourly wages. Indeed. Full time workers formerly paid at the hourly minimum wage (the SMIC) did not experience a drop in their nominal monthly remuneration, despite the reduction of working time: they received a bonus equal to 4 paid hours. Contrary to the standard SMIC indexed on inflation and growth, this bonus declined in real terms. So the Aubry law has generated a variety of minimum wages (called “les SMICs”) depending on the date of application by the firm of a 35-hour agreement. Theoretically these different SMICs would asymptotically convergence to a unique value. But, a recommendation of the State Council (Supreme Administrative Court) has accelerated the convergence (see below).

³ They are named after Martine Aubry, Jospin’s Minister of Labor.

These measures sought to legitimize the 35-hour work week by extensive parleying and hoped to give new impetus to collective bargaining. The reduced work week was also presented as a way for companies to improve their performance by making work time more “flexible.” It would have been easiest for employers to negotiate this kind of reorganization at the most decentralized level, that of company or division, but the weakness of French unions hindered this. Most small companies have no union delegations. Consequently, the law sought to modify the rules of labor representation. Companies with less than 50 employees could receive financial incentives by directly applying an RTT agreement signed on the branch level. This was done by one out of five of the companies that adopted the 35-hour week to receive subsidies provided by Aubry I law. Another provision provided that an employee “mandated” by a union organization could negotiate and sign an agreement.

The two-stage method of implementing RTT under the Aubry Laws gave negotiations by branch and company a pivotal role in defining new norms of work time in conjunction with its reduction. MEDEF, backed by major corporations, counted on the failure of the incentive phase of Aubry I to undermine the entire project. If most companies didn’t begin negotiations, MEDEF reckoned initially, the government would be forced to abandon or weaken the second phase. But MEDEF soon saw the many benefits of negotiating by branch in order to attenuate Aubry I and to influence the formulation of the second Aubry law. Several industrial organizations negotiated accords by July 1998, but many of these contained provisions limiting the effectiveness of RTT. By the eve of the enactment of the second law, 122 private sectors covering nearly ten million employees (over seventeen) had signed RTT agreements that fixed a global scheme for firms that decided to implement the 35-hour. In the meantime, main trade unions were divided on many matters in the negotiations but also on basic strategy.

Compromises with unions were less difficult in individual companies, probably because the tradeoff between jobs and wages was easier to find than in a given sector as a whole. As off late 1999 (so on the eve of the passage of Aubry II) 30 thousand companies employing two million workers had adopted the 35-hour week.

By this time, the economic environment had changed. France's economy resumed a cycle of rapid growth, nearly four percent annually, in late 1997. Unemployment decreased as the country experienced three of its four best years for job creation in the twentieth century. Most policy makers went from pessimism to euphoria, and this was reflected in the *Plein Emploi (Full Employment)* report of the Prime Minister's Council of Economic Analysis in 2000 (Pisani-Ferry, 2000). Strict application of the 35-hour laws lost much political relevance. The socialist government began to accept modifications of it.

1.3 The second law: new definitions of working time

In these circumstances, some employers' organizations and company heads began to focus on the definition of work time in their negotiations. They wanted to exclude "unproductive" breaks, holidays, and training periods. It would thus be possible to reach 35 hours with an RTT substantially lower than ten percent. Aubry II tried to foreclose this by defining actual work time as "time during which the worker is at the employer's disposal and must conform to his orders without being able to take care of personal matters."

Actually, it still allowed branches or corporations considerable leeway to circumvent the law's aims. For instance, numerous branches (bakery, road transport, etc.) ratified a system of "equivalent hours" which took into account time spent waiting for customers. So 38 or even 43 hours of work could become "equivalent" to 35 hours worked, and overtime hours are counted above this threshold.

An illustrating case is the change of the status of breaks. For example, in 2005, supermarkets were allowed to exclude the three-minute breaks (on the hour) for cashiers from the calculation of paid time worked. So work-time of a cashier in food retail may be reduced officially by four hours per week to get to 35 hours when it was a reduction of 2.25 hours in reality (4 hours - [3 minutes x 35 = 1.75 hours]); for cashier paid at the minimum wage, this mechanism also reduced the labor cost and remuneration. A new agreement signed in February 2008 has removed this arrangement. Such changes are not visible in standard administrative series from employers' logs; they only report paid hours not worked hours with a constant definition. Then figures from employers and from workers are inconsistent. The noise in the datasets is actually a huge problem for quantitative evaluation of the impact of the law. The part 2 of this paper will come back on these caveats.

Employers' representatives also sought to limit the number of managerial employees covered by RTT. The law allowed for agreements by collective bargaining that calculated the number of days worked (rather than hours). This was set at 217 days for managerial employees with “genuine autonomy” in their work. So theoretically, a managerial employee could work more than 2800 hours⁴ a year and be officially at 35 hours a week! In some sectors managers saw their work time increase with no change in pay.

Table 1: Main types of private firms in January 2002

	35-hour agreement		No 35-hour agreement	
≥ 20 workers	Extended possibilities of time flexibility Permanent additional social tax cuts (concentrated on low wages)	Maximal overtimes = 130 hours per year	Limited time flexibility	
		Minimal bonus for overtimes = 25%		
		Full-time reference = 35 hours per week or 1600 hours per year		
< 20 workers (transition period)		Maximal overtimes = 180 hours per year.		
		Minimal bonus for overtimes = 0% for the 3 first weekly hours ; 10% for next hours		

The second Aubry also instituted 1600 annual work hours as a legal norm. In companies adopting yearly measurements (“annualization”), the employer could ask workers to work fewer hours some weeks (say, 25 or even 0) and more other weeks (say, 45). If the total equaled 1600 annually, workers would receive no overtime pay. This system particularly interested companies with seasonal variations in sales. While Aubry II incorporated the main results of negotiations, it

⁴ The minimal legal rest is 11 hours per day. So, legally, a manager may work 13 hours per day during 217 days i.e. 2821. Actually, we even observe that some middle managers, for example in retail trade (Askenazy et al., 2008), even work more.

also deleted provisions that imposed stringent conditions on companies for job creations and actual RTT. Incentive subsidies were replaced by permanent ones, conditioned only on the shift to 35 hours (or the annual 1600 hours) and agreements ratified by a vote of employees or unions. Again, there was no required method of counting hours as before 1997 or required number of jobs created. Finally, small firms benefited from a progressive application of the law; and overtimes are paid with only a 10% bonus. Initially, it should fully apply in 2005.

1.4 Public sector: the great bazaar

The Aubry laws only concerned private employers. However, the governments had also “organized” the RTT in the public sector. Actually, the RTT has been implemented by each governmental or local administration. The result is an astonishing heterogeneity. Unfortunately, no systematic study has been conducted. We will thus only give 5 “typical” examples:

a) An “exception”, but involving one forth of the public workforce. Teachers from primary school to university who weight 4% of the French workforce are not concerned by the 35 hours. Holydays and number of courses hours have been unchanged.

b) An odd example. Researchers at the main public establishments including the CNRS and the INRA were officially at 39 hours. They are at 35 hours since 2002. More precisely, the director of each unit can choose among a menu of RTT processes. The most common arrangement is 38 hours and 10 minutes (sic!) workweek plus 38 vacation days per year. Actually, in most research units, there is no control of working time. The new “rules” do not impact time devoted to research.

c) A “delayed” example. Judges are also officially at 35 hours since 2002. But because it is impossible to measure their working time, the application of the 35-hour is just a benefit: 8 days of RTT automatically saved on a time account. After several years, a judge could use her saved days for a three-month sabbatical period. So, for the moment, the effective working time of these judges has been unchanged. But the problem may become acute if numerous judges would decide in the future to use their sabbatical rights.

d) This problem is already acute in the public hospitals. About 3% of the French workforce (20% of public employees) are concerned. The 35-hour week had been introduced without proportional job creations. Because productivity gains are hard to extract and people have to be still care, the State had progressively accumulated a considerable debt on its workers.

About 3.5 millions of days had been saved in time accounts by the end of 2007. Because of budget constraints, the State had also delayed the payment of dozens millions of overtime hours. Consequently, here again, recent stats based on the number of paid hours do not provide consistent information on the effective worked hours.

e) But the 35 hours are not systematically ineffective for civil servants. In most central administrations including ministries, the 35 hours are fully applied. For example, at the ministry of finance, numerous agents have up to 12 paid weeks of vacations per year and they generally take this benefit.

1.5. 2002-2008: to the end of RTT?

While, the 35-hour in the public sector has not been (yet) significantly disentangled since 2002 (if it has existed), things began to change for the private sector after the defeat of the Socialists in 2002. So, because of the transition period for the small firms, the Aubry laws were never fully applied in France.

The new conservative government blamed the Aubry laws for France's economic slowdown since 2001. The "Fillon adjustments" ("assouplissements") passed in 2003 and 2004 maintained the legal limit of 35 hours but abolished the incentive mechanism of the Aubry laws. Decreases in social insurance contributions by firms were no longer linked to a reduction in working time. Companies that had already moved to a 35-hour week were "punished," receiving lower state subsidies (about 1 billion euros), whereas competitors that had stayed at 39 hours had their social insurance contributions partially financed by the state (about 5 billions). The statutory number of overtime hours was increased to 220. In short, a company could stay at a 39-hour week (35 hours + 4 hours overtime) at no massive extra cost (social tax cuts overcome overtime bonuses). In 2005, a "solidarity day" has been introduced reaching the annual working time to 1607 hours up from 1600.

Nonetheless, no evidence suggests that companies that had already adopted the 35-hour week have gone back in a significant way on their agreements (except a few cases that received extensive media coverage). Most employers do not want to question arrangements that guaranteed them more flexibility in the organization of work. There has probably been a slight increase in overtime hours.

After the Presidential election in May 2007, the government undid further the 35-hour week with an original arrangement. Employees no longer pay taxes on overtime pay, and employers pay practically low social insurance contributions on that pay. Employers can also pay days saved on a time account. This complexifies an already heavy regulation. Theoretically, the new overtime regulation is an invitation to fraud (Artus *et al.*, 2007). It makes overtime hours less costly to employers than regular hours all while it yields more after taxes than regular hours. It gives employers and employees a shared interest in reducing basic hourly pay and in declaring the largest number possible of false overtime hours. The government also homogenizes the regulation for small and large firms, notably by increasing the standard bonus for overtime hours in small firms (see table 2).

Table 2: Main types of private firms in January 2008

	35-hour agreement	No 35-hour agreement
≥ 20 workers	Extended possibilities of time flexibility	Maximal overtimes = 220 hours per year Minimal bonus for overtimes = 25% No tax income on overtimes
< 20 workers		Full-time reference = 35 hours per week or 1607 hours per year Permanent social tax cuts for low wages + specific social tax cuts on overtimes
		Limited time flexibility

The collateral damage of these reforms would be inconsistent employer statistics on working time for the next years. They should overestimate the number of worked hours: Firms would pay days worked during previous years (saved in time accounts), and overtime hours would artificially increase in order to optimize the advantages of the new tax system. The focus on the “working more for earning more” Sarkozy’s message also push union to claim for the payment of all times: e.g. following a national strike, the large food retailers are going to consider the 3-mins

break of cashier per hour has a worked and paid time. In addition, in the public sector, the French government is also engaged in the payment of the unpaid working time, especially for public hospital workforce.

Finally, the government launches in 2008 a general reflection with unions and employer organizations on working time. The final result of this process is uncertain, but clearly, the initial work-sharing idea of the Aubry laws is dead.

2. First evaluations of the 35-hour working-week process

The process of implementing the 35-hour week has led to a labyrinth of legislative and regulatory systems. However, this also produces a lot of variance that helps to design short-run evaluations. Conversely, the maelstrom of reforms makes it impossible to conduct long-run estimations: what the final consequences of the Aubry laws will be, will never be known.⁵

Early research into this issue suggests that, these laws produced neither a miracle (as their proponents hoped) nor an apocalypse (as their foes warned), at least in the short-run. But, it is worthwhile confirming this diagnosis and studying numerous unexplored issues. The 35-hour week offers a rich series of natural experiments that may provide interesting information about labor markets and labor relations.

2.1 A limited reduction

In 2003, on the eve of the disentangling of the 35-hour week, nearly 60% of private sector workers were in companies with a 35-hour week. According to the French Ministry of Labor, 85% workers in companies with more than 200 employees were covered by the laws, but this was so for barely 50% in companies with 20 to 50 employees, and only 25% in those with 20 employees or less. Several data sources can be exploited for measuring the recent evolution of working time in France (see box 2)

⁵ The two laws (Aubry I and Aubry II) referred to in the text were the laws which brought the 35-hour week into French labor law. The laws were presented to the French Parliament by Ms Martine Aubry, Minister of Labor at the time.

Box 2: Main micro datasets on working time in France

Employer surveys

- ACEMO. This quarterly survey provides data on standard, collective working time.
- ECMOSS: This yearly survey gives detailed data on remuneration and hours worked (basic hours, overtime). It includes the Eurostat module ECMO.
- DADS (*Déclarations annuelles de données sociales*). This exhaustive administrative form contains varied information on individual, salaried workers (hours paid, wages, occupation, age, sex, diplomas, etc.).
- Specific survey (*Modalités de passage aux 35 heures en 2000*). Conducted by the French Ministry of Labor, it provides very detailed information on the RTT (Reduced Working Time) process and associated changes, for 1200 firms.

Employee surveys

- European Labour Force Survey (wages, working time, occupation etc.)
- *Enquête emploi* (French LFS). The survey was conducted in March till 2002 and is now continuously conducted. Additional questionnaires are collected every 5 or 7 years for about 20,000 workers. The time schedule questionnaire provides very detailed information on work schedules and the organization of private lives. The working condition surveys include a large variety of indicators of workplace organization and working conditions (safety, mental strain, etc.); the two last surveys were conducted in 1998 and 2005.
- *RTT et mode de vie*. A specific survey conducted for the Ministry of Labor in 2000 and 2001, on 1600 workers providing information on “life styles” and work schedules.

Employer-employee survey

- REPNSE. This survey collected for the Ministry of Labor has 3 parts. About 2800 employers are interviewed face-to-face about labor relations, workplace organization and technological uses. If present in the company, a union representative is also interviewed face-to-face on the same topics. A short, additional questionnaire is collected from a random sample of workers in the associated establishments (on average 5 per establishment) and gives worked hours, wages, union membership etc. The two last surveys were conducted in 1998 (at the beginning of the 35-hour process) and in 2005; they include a panel of 600 establishments.

Robien and Aubry Agreement databases

- The French Ministry of Labor has gathered together the RTT agreements of all firms that have demanded state subsidies associated with the RTT. The main characteristics of the agreement are coded. The collection was stopped when the financial subsidies were generalized in 2003.

According to employer surveys (table 3), the overall reduction in working time due to the Aubry laws has been marked, for full time workers: ranging from 8% (ACEMO) to 12% (ECMO). This is close to the official reduction of 4 hours.

But in calculating the actual impact of the law on effective worked hours, it is important to remember that apart from companies which benefited from the incentive subsidies of “Aubry I”, there was no obligation to calculate hours worked before and after the RTT (Reduced Working Time), on a similar basis. All things considered, raw official statistics that purport to show a huge reduction in the working week in France do not take into account the real figures.

**Table 3: the evolution of worked hours in France in % from 1996 to 2004
according to various sources**

Private employers' claims	
ACEMO, weekly collective working time, firms with 10 or more workers	-8.5
ACEMO, annual collective working time, firms with 10 or more workers	-9.0
ACEMO-TPE, weekly collective working time, firms less than 10 workers*	-6.3
ECMO, full time employees	-11.8
ECMO, part time employees	-10.7
Employees' claims	
Enquête emploi, normal weekly working time, full time employees	-5.0
European LFS, effective full time	-7.2
European LFS, effective part time	-2.5
European LFS, effective working time	-5.8
International series of national accounts	
OECD, annual working time, all employees	-5.9
OCDE, annual working time, all workers	-6.0
EU-KLEMS, annual working time, all employees	-5.6
EU-KLEMS, annual working time, all workers	-6.0
EU-KLEMS, annual working time, all employees, business sector	-5.7
EU-KLEMS, annual working time, all workers, business sector	-6.3

* from 1999 to 2004

Actually, the magnitude of the RTT depends on the starting date of the process at the firm level and as well as current regulations. This issue is studied by numerous papers (Passeron (2000), Ulrich (2001), Bunel *et al.* (2002), Pham (2002), Gubian *et al.* (2004), etc.). They use case studies and systematic exploitations of the agreement surveys. The reduction under the Robien and Aubry I laws (i.e. before 2000 for large firms and 2002 for the others) has been close to the theoretical decline (i.e. 4 hours or 11%): this process has benefited about 5 million salaried workers. But, for firms that decided to implement to the 35 hours under the Aubry II law, the effective decline is estimated at between 6 and 8%. Lastly, for firms (mostly small) still not covered by a 35-hour agreement, working time has not been significantly affected.

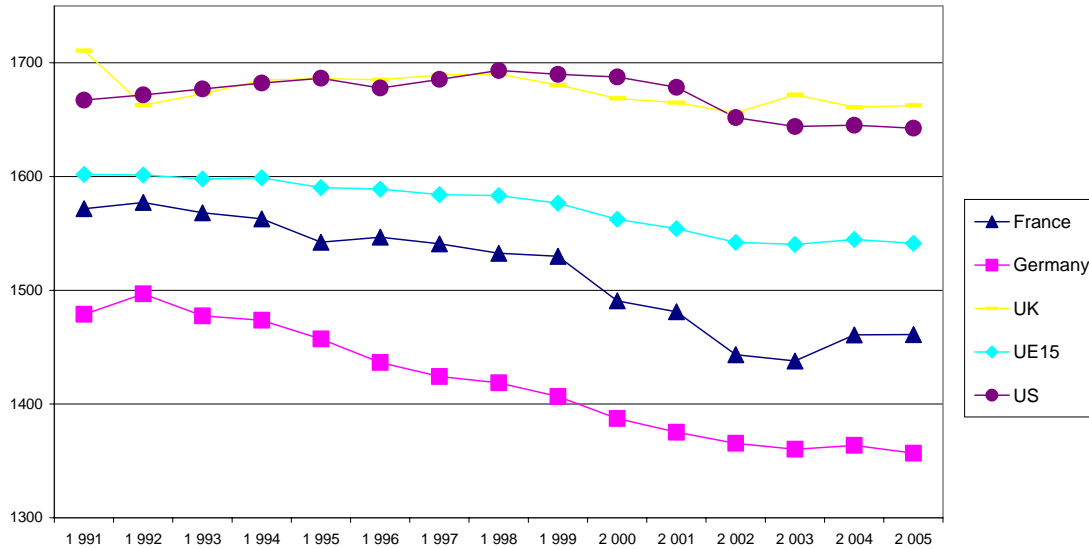
Thus, using a constant method of calculation, the average effective reduction in the length of the working week, in the private sector has probably only amounted to between 5% and 6% (about 2 hours a week) instead of the 11% expected (Gubian *et al.*, 2004). The evolution in the public sector has not been studied at the aggregate level from employers' sources. But, because at least one fourth of the public workforce (teachers, researchers etc.) have experienced no reduction in working time, the actual RTT is also reduced in the public sector.

The 35-hour has also tended to reduce the share of part-time workers. For example, numerous women who work 4 days per week (i.e. who do not work Wednesdays, when there is no school for young children) can more easily supply 35 hours work full-time, than 39 hours. This issue has not been studied in depth. However, Oliviera and Ulrich (2002) find that the RTT seems to be associated with a higher frequency in the transition from a "long", part-time week (20 to 29 hours) to a full time week. Such mechanisms suggest that assessing the macro-impact of the 35-hour week should draw on statistics for all salaried workers and not only for full-timers.

According to national accounts data (Graph 1), the annual working time of employees declined by about 7% from 1995 to 2003 (two years of flat economic growth), compared to 3% in the European Union, and... 7% in Germany. This macro statistic is consistent with micro estimations. It should be noted that annual working time seems to have increased anew after 2003, along with the end of the Aubry laws. This is again consistent with micro-observations: according to the European Labor Force Survey, from 2003 to 2006, the average working week of a full-time employee in France increased by 0.3 hours.⁶

⁶ Note that this increase is similar to that observed for the whole EU15.

Graph 1: Annual working time of salaried workers (hours) 1991-2005 in selected countries



Source: EU KLEMS <http://www.euklems.net/>

2.2 Some job creations and productivity gains

Statistical *ex-post* evaluation of the impact of the RTT is extremely difficult. In particular, companies which chose to use incentive measures to reduce working time have specific characteristics (size, sector...). *A priori*, such characteristics are not independent of the way in which these firms seek to manage changes in their workforces.

Crépon *et al.* (2004), Bunel (2004) and Gubian *et al.* (2004) provide evidence of a certain degree of consensus concerning the rate of job creation caused by the various measures for reducing working time, when selection phenomena are controlled for most successfully. These papers use propensity scores, matching methods or a structural model to encompass major selection problems. They try to construct control groups carefully and to exploit the discontinuities in the regulation. These papers conclude that there were net positive and significant effects in job creation by the Aubry 1 measures, of between 6% and 9%. In contrast, the net effects on employment were likely to have been much weaker – about 3% – for companies which reduced working time without financial incentives, or as part of the Aubry 2 measures. In these cases, it is hard to identify the respective roles of the cut in working time (which was less important in practice than for Aubry 1) and the absence of specific financial incentives.

Crépon *et al.* (2004) complete these results by studying the impact of the reduction in working time on firms' productivity. These authors show that companies which adopted the 35-hour week experienced strong job growth after the cut in working time, and insignificant losses in output per capita. They concluded that the effectiveness observed in the cut in the working week by companies drawing on the incentives provided by Aubry I may result more from a policy of cutting unit costs and sharing out work. The positive impact on hourly labor productivity due to the RTT which may be observed for Aubry I firms, cannot be generalized for all companies. In particular, it is hard to disentangle real productivity gains and artifacts due to the redefinition of working time in Aubry II firms.

These results were obtained using data for individual companies. It may be asked whether they can be generalized at a macroeconomic level, in order to estimate the number of jobs created by the 35-hour working week. Gubian *et al.* (2004) conclude that 300,000 to 350,000 jobs were created between 1998 and 2002. These estimates were obtained by applying the rate of net jobs estimated to have been created, under each measure, by firms switching to the 35-hour week. Lags in applying the reduction in working-time are taken into account, as are lags in hiring, excluding potential macroeconomic feedback effects.

Again, jobs were largely created under Aubry I, in other words the law which required a genuine reduction in working hours with job creations. Consequently, one of the principal aims of the first law was probably achieved, because it in fact combined a significant reduction in working hours with job creation.

However, Estevão and Sa (2006) reach a very different conclusion, using the French labor force survey: they find that the 35-hour week had no aggregate effect on net job creation. However, this result is obtained with a very strong assumption concerning the identification strategy: they assume that in 2000, the 35-hour week was applied in all large firms and not in small ones, while in reality the figures were mixed. The authors also claim that worker transition from large firms to small firms increased, thanks to the 35-hour week, because workers in large firms are constrained in terms of the hours they can work. In this case, Estevão and Sa have interpreted the 35-hour week as a maximum number of worked hours, while there is a threshold for accounting

overtime work. In any case, they have to correct for the shift of business cycles according to firm size.

Chemin and Wasmer (2008) propose an original methodology to tackle these caveats. The idea is to use Alsace-Moselle's "droit local" to build a diff-in-diff. Indeed, this part of France has still particular labor laws inherited from the German presence between 1871 and 1918. In particular, workers in this region have 2 additional public holidays. But, between the beginning of 35-hour process in France and 2003, firms that decided to reduce working time to "35 hours" in this region have included these 2 days in the calculus of non worked time. So the RTT was less massive than in the rest of France. Exploiting this fact with the French labor force survey, Chemin and Wasmer find that indeed working time less declined in this region, especially in large firms. Now, there is no significant difference in employment changes between this region and the rest of France, according to the size of the firm. This suggests a neutrality of the RTT on job creations. However, the authors do not really endorse this conclusion because they stress that a difference of 2 days may be too small to find a statistical effect.

In addition, Alsace has specific characteristics. It is strongly linked to the German economy and its business cycle: Numerous French people cross the frontier to find jobs in Germany, and numerous firms are sub-contractors of German companies. However, this paper offers an interesting line of research.

While economists generally agree on the net figures, they disagree on what happened (Artus *et al.*, 2007). Were the new jobs due to the reduction in working time as such, to a reduction of labor costs near the minimum wage, or to increased flexibility? A first response is to claim that this is not policy relevant! Without state subsidies, companies would not have reduced working hours in advance of the law; and if working hours had not been reduced, wage-earners would not have accepted increased flexibility.

However, further research could help disentangle the different effects. The seminal papers (see above) find significant differences between firms that reduced working time according to whether they benefited from early government subsidies or not. But the selection bias may be too important to allow conclusions to be reached, and the RTT was more profound among first movers. For Artus *et al.* (2007), there are strong hints that the reduction of labor costs is the main

driver of job creation: indeed, if the job effect of the Aubry subsidies is extrapolated from the estimations of the impact of the general social security tax cuts, at the minimum wage level, conducted in 1996, then the job gains may be close to 200,000 or 300,000. However, the 35-hour week firms are mostly large firms with a far lower proportion of workers paid at the minimum wage than small firms, which mainly remained at 39 hours. The extrapolation is therefore fragile.

Actually there may be two potential ways to improve the diagnosis:

- To determine what types of jobs have been created in firms applying the 35-hour week. If they are not low-wage, in companies with relatively high wages, it is possible to believe that there is a serious scope for a pure, RTT effect on job creation.
- To evaluate the effect of the Fillon adjustment. If the social security tax cuts near the minimum wage did indeed explain job creations, it would be expected, from a symmetrical point of view, that the generalization of cuts in social security contributions for all firms would increase employment in firms still working 39 hours, and slightly reduce employment in firms applying the 35-hour week. Aggregate statistics by firm size suggest that this generalization of social security tax cuts has not had an impact on employment shares across firms.

As far as I know, these two issues have not been seriously tackled.

A related, stimulating theme concerns “partial unemployment” or short-term compensation. This is an original procedure in French labor regulation. Firms facing a short term fall in activity can demand the French Ministry of Labor to place a proportion of their workers in a situation between employment and unemployment. For some weeks, workers are not fired, but neither do they work (or only part-time). They are not salaried by the firm and they receive a sort of unemployment benefit partly financed by the State. This was an important tool used by employers both for obtaining flexibility and protecting jobs. For example, in 1996, 35,000 establishments used it for a total of 6 million effective working days. These numbers have dropped in recent years. In 2005 (a year with a small economic growth similar to 1996), only 5,000 establishments were concerned for less than 1 million days.

Calavrezo *et al.* (2007, 2008) have tried to test econometrically the relationship between the RTT and partial unemployment. They use micro-datasets to estimate the propensity and the degree to which firms use partial employment. They find a clear negative correlation between the two tools. In this case, it is hard to argue that social security tax cuts matter. This suggests that the flexibility offered by the 35-hour week agreements substitutes for partial unemployment.

2.3 Flexibility

Actually, flexibility gains are various. The application of the RTT provides many companies with the opportunity of introducing more “flexible” working time arrangements, allowing schedules to be adapted to activity rates and hence permitting companies to avoid paying overtime on the one hand and to avoid periods of unproductive, under-activity on the other hand. Such policies have existed since 1982, but were generally little used (Estrade and Ulrich, 2002). However, their recent implementation seems to have been a key bargaining-chip used by employers in exchange for accepting the 35-hour week. Indeed, Bunel, Coutrot and Zilberman (2002) show that more than half of all salaried employees are affected by such flexibility policies, following the introduction of the RTT.

The introduction of greater flexibility in companies which reduced working time has been an important aspect of the 35-hour working week, but it is generally not included in macroeconomic simulations concerning the RTT, nor in the theoretical studies conducted prior to the application of the second Aubry law. This factor was considered by part of the government, at the time, as a key component of the success of the 35-hour week, even before the first law was voted. The latter even explicitly presented modulating hours as a way for companies to “benefit from the reduction in working time”.

The question of flexibility, however, goes beyond a simple optimization of working time. Several monographs on the subject illustrate this. Using monographic studies of pioneer companies, Pelisse (2000) shows how the 35-hour week was accompanied by a shift to calculating hours on an annual basis. This is a policy that is synonymous with greater flexibility. The introduction of modulating hours so that they fit periods of high and low work intensity better, leads to overall cuts in the hours worked by all employees. Alternatively, companies may attribute “RTT days” collectively, according to firms’ activity levels, which constitutes another

form of modulation. Jacquot and Setti (2002) show how the RTT, which when viewed as a means of organizational change, has allowed companies to introduce new types of work organization, raising internal flexibility via new forms of multi-tasking. The monograph by Charpentier *et al.* (2004) examines the workings of Aubry 2 companies, using 4 very different cases. The companies studied appear to have adopted the 35-hour working week with no particular economic nor organizational project in mind. Nevertheless, the modulation of hours and RTT days are, once again, used by the companies to smoothen out activity levels, thus avoiding periods of partial unemployment (see previous section) or recourse to overtime. Such behavior leads to further time pressure, which employees perceive as a deterioration of their working conditions.

Studies conducted using survey data confirm these results. Based on a survey carried out in early 1999, of nearly 3000 firms, including 10% that pioneered the RTT (REPONSE survey, see Box 2), Askenazy (2003) shows that changes in organizational practices, such as just-in-time management, were adopted in the wake of cuts in the working week.

The *Passage* survey of 1000 employers concerning their projects, attitudes, strategies and agreements linked to the generalization of the 35-hour week by the Ministry of Labor allows these observations to be generalized. Accordingly, Coutrot and Guignon (2002) identify 4 classes or strategies by companies which introduced the RTT. First, certain companies limit themselves to cutting working time, albeit weakly. Secondly, others, especially the Aubry 1 firms which implemented important organizational changes (mainly via the modulation of hours) nevertheless also created jobs, given a strong implementation of the RTT. Thirdly, other firms, mainly Aubry 2 companies, are different to the second group in as much as their job creation was less. The last group of firms use flexibility in hours less, but have achieved greater internal and external flexibility via the introduction of new teams, the development of multi-tasking, cuts in the length and frequency of meetings, the development of on-going vocational training, and the use of temporary labor. If the flexibility of labor introduced in many cases along with the cut in the working week is taken into account, then the Aubry laws may be interpreted as a means for adapting the organizational forms of (large) French companies to productive flexibility, which is required within a context of technological change and competition.

2.4 An apparently huge budget cost

Ex ante, the Aubry laws were designed with the twofold aim of not increasing unit labor costs, thanks to tax breaks, and of being self-financing. On average, the 35-hour week has been a financially-neutral proposition for most companies. Subsidies, wage restraint (see below), and increases in productivity associated with flexibility should have compensated for the increase in labor costs induced by the RTT.

It is more difficult to assess the net cost of the law for the public finances. If the effort to attain a 35-hour week had been carried out fully, state subsidies to companies would have amounted to €16 billion in 2006 i.e. 1% of GDP for far less than 600,000 jobs created, or about €30,000 annually for each job created.

Estimating the net costs of the 35-hour week requires calculating tax and social-security receipts linked to the jobs created, as well as losses stemming from wage moderation. Such calculations involve major uncertainties: even if the scenario for 2002 is correct, i.e. that 350,000 jobs were created, the profiles of jobs generated is still unknown. Tax and social security receipts vary substantially depending on whether jobs created are paid at the minimum wage or whether they match the distribution of jobs across occupations. Information concerning the beneficiaries of jobs created is also fragmentary: Were they previously receiving unemployment benefit? Or were they already in work?

The Ministries of Labor and Finance have nevertheless attempted to indicate broad outlines of the impact of the 35-hour week to a parliament commission (Ollier-Novelli, 2004). Thus, in 2002, the net cost of the 35-hour week was estimated to fall between €200 million and €1.5 billion, equivalent to a tiny 0.1% of GDP, which was shared out between central government and the social-security funds.

However, this method underestimates the overall cost for the State. In particular, it does not take into account the cost for the central government and local authorities as employers.

2.5 Working conditions

While the 35-hour week has not necessarily had a major impact on employment and the total length of time worked, its implementation has allowed many companies to modify working hours and introduce more “flexible” forms of organization.

The spirit of the Aubry laws and the RTT clearly aimed at improving working conditions and life for salaried employees. The new constraints linked to a more flexible work organization (fluctuating and staggered hours, which are not always predictable in advance, long days, etc.) are meant to be compensated by shorter working time. However, it is difficult to know from a theoretical point of view whether work is indeed less “hard” (Askenazy, 2004). Empirical studies of employees’ work confirm that it is difficult to obtain a single answer to such questions. Afsa and Biscourp (2004) illustrate this phenomenon. By matching complementary surveys of the length of working time and its reorganization with the Labor Force (*Enquêtes Emploi*) surveys of 1995 and 2001, along with the database on agreements reached, they show that the effects of the RTT are highly diversified, depending on the category of employees in question and the characteristics of their companies.

Using a survey of 1600 employees conducted at the end of 2000, Estrade *et al.* (2001) provide a preliminary, quantitative appreciation by employees of the impact of the RTT had on working conditions. Their assessment concerning working conditions is mixed. The large epidemiological survey SUMER 2002-2003, including face-to-face interviews of 50,000 workers by occupational physicians, confirms these findings (Coutrot, 2006). In 2002-2003, employees who benefited from a cut in working hours also had to work far more flexible hours than other employees, though their hours were more predictable. Their work is organized in a more constraining manner, but they suffer less time pressure. Furthermore, these employees get more support from their colleagues. These more- favorable working conditions do not necessarily stem from cuts in the working week. Certain better conditions existed prior to the cut in working time. Half of all employees questioned judged that the cut in working time had improved their personal situation. A third reckoned that nothing had changed, and one in seven employees felt that conditions had worsened.

This contrasting assessment hides significant heterogeneities and contributes to greater inequalities. Research suggests that this ‘flexibility’ was a compensation granted to employers in return for the reduction in work time. But studies also show that with this came with an increase in inequality among wage earners, according to their professional categories, social status, and age, as well as between companies and economic sectors. Where workers and office employees, in particular, have had to accept flexible working hours, they have tended to experience

deterioration in working conditions. Conversely, the autonomy of the work of managers and most technicians has been preserved, and they have reaped the benefits of extra vacation known as supplementary RTT days. This is especially valued by women managers.

The RTT has led to greater irregularity and unpredictability in the pace of work experienced by employees, even though they were already subject to such constraints and previously had little room for maneuver in setting their own hours and vacations. In contrast, employees who previously benefited from regular hours seem to have retained them (Estrade and Ulrich, 2002). Thus, intermediate employees and professions (which are largely feminized) have seen the RTT applied in a regular manner, in particular in obtaining an extra day off once a fortnight, or half-a-day off per week. Employees, mainly managers, who chose such an organization of their work – have tended to be given extra days off (RTT days). While work intensity is perceived to be greater by a large majority of employees, because the greater load of work is associated with the demands of multi-tasking, managers accept these conditions more easily, even if the RTT is applied less effectively for them. This is because the autonomy they enjoy in organizing their work has been preserved. The same does not hold for unskilled women workers, who feel they are under much more pressure. Lastly, the perceived intensification of work is all the greater when the jobs created due to the RTT are not attributed to the departments or units in which existing staff are working. The impact of reorganizing work, and the whole productive process in general therefore have a strong influence on the way employees judge the implementation of the RTT.

Monographic studies corroborate and round-out these observations. The degree to which employees can control the organization of their work, its regularity and the predictability of the time gained due to the RTT are more important in the perceived benefits of the cut in the working week than the actual reduction in hours worked (Pelisse, 2002 ; Lurol and Pelisse, 2002 ; Jacquot and Setti, 2002).

2.6 Wage restraint

The shift to a 35-hour week was accompanied by wage restraint. Most agreements contained clauses providing for this. Estimates of basic pay show that the monthly wage bill in companies applying the law grew by one percentage point less than in similar companies of identical size and working in the same sector (Passeron, 2002). Before 2007, overtime was paid at only time-

and-a-quarter in companies with more than 20 employees and time-plus-10% in those with fewer workers. The annual calculation of working time has allowed companies to avoid overtime, which used to be lucrative for employees in periods of high activity rates: some employees may have lost as much as 30 percent of their monthly pay as a result.

The “Fillon arrangements” merely froze inequalities in the time and organization of work. However, the abolition of pay guarantees automatically implied that a minimum-wage worker in a company that had adopted the 35-hour week might earn 11% less than someone working 39 hours. More generally, wage restraint has created a gap between employees working 35 hours and those working 39 hours. Most of the former have lost out financially from the RTT. Moreover, the actual decrease in their working time was significantly less than 4 hours a week, given the flexibility that was imposed on them. Since the RTT has not been universally applied, these inequalities have reinforced the notion that working more could increase pay packets, which is why some employees, who were initially supportive of RTT, have grown hostile to it.

Some perspectives of research

Despite an intensive research mainly conducted in French institutions, that draws a contrasted picture of the impact of the massive reforms of working time regulation in France, several issues are not still covered, while very detailed and rich micro databases are available.

A first line of research may be to improve the diagnostic of the 35-hour experience as a tentative of work-sharing, e.g. what types of jobs have been created or destroyed? Does it reduce part-time work especially constrained part-time? Does work-sharing really work? Is it costly?

A second line may be devoted to analyse the role of unions and complex bargaining processes concerning simultaneously various parameters of human resource management (wage, work schedule, work organization, hiring...). The 35-hour chock may eg.: reveal the preferences, trade-offs of actors and their bargaining power according to the competitive environment and the globalisation exposure; or may structurally change the labor relations. Actually, the quasi exhaustive base describing firm RTT agreements has been clearly under-exploited.

A third line may be to determine the global welfare impact of the 35-hour package. Does it improve welfare of most workers and in the same time preserve firm performances and competitiveness? Does a national policy help to coordinate people on a better equilibrium?

A last line is still completely unexplored: the impact of the progressive removal of the 35-hour. Does the 35-hour is a hysteretic policy? Is it possible to keep firm flexibility when working time is re-increasing? Does this inverted work-sharing is negative for employment or welfare?

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