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LABOUR MARKET FLEXIBILITY AND EMU SUSTAINABILITY:

THE EFFECTS OF THE FRENCH LAW ON WORKING TIME REDUCTION

Supervisor: Hartmut Lehmann

Thesis presented by
Dennis Kredler
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List of Abbreviations

ALMP	Active labour market policy
DARES	Direction de l'animation de la recherche, des études et des statistiques
EMU	Economic and Monetary Union
EPL	Employment protection legislation
NAIRU	Non-accelerating inflation rate of unemployment
OCA	Optimum currency area
OECD	Organisation for Economic Co-operation and Development
OFCE	Office français des conjonctures économiques
RWR	Real wage rigidity
SMIC	*Salaire minimum d'insertion et de croissance* (French minimum wage)

Abstract

Europe currently faces two major labour market issues relevant for EMU. Firstly, there is a need to bring down the relatively high unemployment rate to avoid a shift in the political preferences in some member countries away from price stability to employment-creating but inflationary monetary policy. Secondly, there is a need for greater flexibility in the labour markets, which national governments have been reluctant to introduce in the face of strong political opposition. Recent developments in some member states seem to have moved in the wrong direction, rendering labour markets more rigid. This study examines what will be the effects on flexibility of the French law reducing the legal weekly working time and what this may mean for EMU.

Very little literature examines the types of measures required to increase labour market flexibility going beyond wage flexibility and labour mobility, the main factors suggested by Robert Mundell, who pioneered optimum currency area theory in 1961. There are, however, a number of elements of flexibility that can contribute to the improvement of the eurozone's capability to adjust to an asymmetric exogenous shock while minimising the employment effects. This paper identifies what other types of changes would contribute to the increase in labour market flexibility required to ensure EMU sustainability, and whether the new French approach contributes to the solution of the problem, or makes matters worse.

The study first looks at the theoretical significance of labour markets in a monetary union, and then proceeds to construct a framework for the analysis of the employment effects of working time reductions before reviewing the analytical literature on this topic. The third chapter defines the elements of flexibility that can be influenced with a view to increasing EMU sustainability, finally analysing the provisions of the Aubry law in the light of the preceding definitions with the help of a simple NAIRU model.

The report comes to a result running counter to the common perception of the French initiative, which is that the law simply imposes an additional constraint on the country's labour market. While a rigidifying effect cannot be denied, it also provides

for a number of measures that may well bring about a greater degree of flexibility. This raises the possibility that the legislation in question is in fact a Trojan horse policy, sold to the public on the basis of its (limited) employment-creating effects but really designed to create a suppler labour market. If this conclusion is an accurate reflection of reality, then the news for EMU is good: Despite public opposition to increased flexibility, it may well be achievable. The elimination of some rigidities may necessitate the introduction of a new one, but this give-and-take practice may allow governments to render their labour markets apt to respond to the requirements posed upon them by monetary union.

Introduction

When EMU was launched in 1999, few economists doubted that in order to ensure its long run sustainability, a number of reforms of member states' economies were necessary. It was hoped that membership of the single currency would accelerate efforts to restructure and lead to more efficiently functioning markets in Euroland. Reform was most fervently advocated for the currency zone's labour markets, perceived as too rigid to be a viable replacement of the exchange rate as an adjustment mechanism. Only increased labour market flexibility could ensure EMU's ability to withstand a shock affecting its member regions asymmetrically, and member states' policies were expected to move in this direction.

Because labour market reforms are politically very difficult to implement, however, governments have been reluctant to introduce wide-ranging reforms. For them, more immediate national considerations matter much more than the European-level single currency and therefore take priority. The question one can ask, then, is whether recently introduced labour market policies in various member states take sufficient account of the requirements EMU poses. Do they simply focus on the short-run interests of national politicians excessively concerned with the (laudable) goal of reducing unemployment, but overlooking the need for greater flexibility in the process?

Thus far, most labour market policies in Europe have indeed tended to target the reduction of unemployment, while the unpopular issue of flexibility has played a minor role at best. Although measures to reduce the jobless rate tend to bring with them a greater degree of flexibility, some legislation still seems to be moving the wrong way by introducing additional rigidities, such as the laws on the reduction of working time recently passed in France and Italy. While the latter is a voluntary arrangement, the former is compulsory and includes a significant number of accompanying measures likely to have a wide-ranging effect on the French labour market. The present study takes a qualitative look specifically at this piece of legislation to examine what consequences it will have on the French labour market and what implications this has for EMU. To this end, ***it considers only in passing the law's likely effects on unemployment***, which is just one of two labour market aspects related to EMU's

sustainability. It is particularly concerned with a rather neglected area of research, namely ***the law's consequences for labour market flexibility*** and the part it plays in the long run fate of the currency union via that channel.

In order to examine the ways in which the new legislation could have an impact on the adjustment capacity of the French labour market, it proved necessary to first define the notion of flexibility, which is often characterised in a simplified form as consisting of wage flexibility and labour mobility. This definition is not sufficient for the analysis presented here and a wider, more comprehensive interpretation is applied with the help of a NAIRU-model of the labour market which is then used to inform on the ways in which the law will affect flexibility. The conclusions drawn from the analysis are rather surprising, and encouraging for EMU.

The first chapter of this paper recalls the significance of labour market flexibility in the analytical framework of optimum currency area theory and gives an overview of the law; the second chapter analyses what the policy's likely effects are in terms of unemployment. The third chapter develops a comprehensive definition of flexibility in all its relevant elements, which is then used in chapter four to examine how the individual components are affected by the legislation.

Chapter 1: Monetary Union and Labour Markets

- **The theoretical framework for the analysis of EMU**

Analysis of Economic and Monetary Union has usually been based on the application of the theory of Optimum Currency Areas (OCA), pioneered in 1961 by Robert Mundell. This theory has evolved significantly over time, with new additions to it dating back mainly to more recent years. It specifies what conditions must be met by a group of regions or countries wishing to enter into a sustainable regime of mutually fixed exchange rates. Only if the criteria are met would the currency area be 'optimal', or sustainable in the long run.

OCA Theory is based on the central concept of 'asymmetric shocks' – shocks with different effects on different countries or regions – and their implications for the role of the exchange rate. By definition, a single currency area or a fixed exchange rate regime cannot resort to exchange rate changes to adjust to shocks affecting its members in different ways. As a result, complete absence of idiosyncratic shocks would automatically render a currency area 'optimal'. The existence of such shocks, however, does not mean that a group of regions or countries cannot adopt a common monetary (and exchange rate) policy, as long as there are appropriate mechanisms to allow regions affected by a negative asymmetric shock to adjust to it without resorting to an exchange rate change. OCA Theory describes these adjustment mechanisms.

Three elements of the theory are usually regarded as the core of what is a collection of many individual criteria added over time by individual authors. Mundell's own criterion is that of labour mobility and flexibility of wages, to which we will return below.

McKinnon (1963) suggested that the degree of trade openness with the other countries of the currency area should be added to the theory, the idea being that the

greater the amount of goods traded, the more harmful any change in the exchange rate due to the ensuing destabilising effect on prices. The more open a country, the less useful is a devaluation to regain competitiveness because of its tendency to create inflationary pressures via import prices. The exchange rate is then not a useful tool for adjustment and can be given up.

Kenen (1969) posited that the smaller the degree of production diversification in an economy, the more desirable an independent exchange rate policy would be. The incidence of a shock on one particular industry sector will be smaller if the economy consists of a larger number of sectors. If, on the other hand, production was not diversified at all and the economy consisted of only one sector, the incidence of adverse shocks on the country would be total.

McKinnon's criterion is useful to establish in which cases independent monetary and exchange rate policies are desirable. However, it does not help us in establishing the *ex-post* process of shock adjustment and is therefore no longer relevant in the context of EMU sustainability. Kenen provides a criterion for the minimisation of the incidence of asymmetric shocks, but not a useful framework for short-run adjustment to them[1]. At a time when EMU is reality, the only criterion allowing us to evaluate the effectiveness of adjustment mechanisms under monetary union is Mundell's, and related to the labour market.

The labour market in Optimum Currency Area Theory

The main adjustment mechanism under a fixed exchange rate regime described by Mundell (1961) is that of wage flexibility to respond to shocks with an asymmetric impact on demand across the currency area. The argument is based on a simple analysis of supply, demand and the role of prices in a perfectly competitive market.[2] Thus, if demand suddenly shifted away from the products of Country A towards Country B's products, this would cause output in Country A to fall and unemployment

[1] Note that in the medium to long run, the diversification of product markets remains one way of adjusting to a shock. The most dangerous shocks are then those requiring short run adjustment, and the only mechanism here would be adjustment through a flexible labour market.

[2] The mechanism described in the following two paragraphs is based on de Grauwe (1997).

to rise. The increased rate of unemployment will cause workers to moderate their wage claims and therefore result in a relatively cheaper labour force in Country A. In Country B, on the other hand, the increased demand for the goods it produces causes unemployment to decrease and as a result, its employers are faced with workers claiming higher remuneration. This process will make goods produced in Country A more competitive (the cheaper labour costs can be fed through into lower prices), while the reverse is true for Country B. The overall effect of this mechanism is the same as that of an exchange rate adjustment: demand for the two countries' products is rebalanced; wage adjustments allow both economies to return to current account equilibrium. A sufficient degree of wage flexibility therefore renders a currency area optimal by allowing it to adjust to shocks and prevent long run disequilibria.

The second criterion proposed by Mundell is that of interregional (in the case of EMU, international) labour mobility. This can be either an alternative of insufficiently flexible wages or a result of large wage differences between countries. Thus, to stay in the two-country framework used above, reducing the shortage of labour could alleviate upward wage pressures in Country B. All that needs to happen is for unemployed workers from Country A to move to Country B. This would help both countries: Country A would have less unemployed people, thus the wage would not have to fall as much to return to equilibrium. Country B, in turn, experiences less upward pressure on wages, enabling it also to remain at equilibrium. In this context, McKinnon has noted that labour mobility could be replaced by capital mobility, not necessitating workers to move but allowing production to move to other countries. This, however, is a viable alternative only in the long run.

Labour market flexibility, unemployment and EMU

Krugman and Obstfeld (1996) summarise a number of studies which show that labour mobility in Europe is much lower than within the US and cite cultural and linguistic differences between countries as a major part of the explanation.

Since the criterion of labour mobility is largely discarded as a large-scale adjustment mechanism in Europe, at least for now, concerns focus on the flexibility of labour markets, and especially wages, to establish whether EMU is sustainable in its current form. While wages in Europe could not be considered upward rigid, a number of studies confirm the general view that the converse is true. Abraham (1994)[3] finds that a fall in productivity of one point translated into a fall in wages of only 0.29 points and finds little or no relation between regional wage levels and the unemployment rates. Even a change in regional unemployment rates does not seem to cause sufficient wage adjustments to absorb a negative shock. There does not, therefore, seem to be sufficient downward flexibility of wages to ensure that Euroland is an optimum currency area – thus, EMU may not be sustainable given the current structure of member states' economies.

Downward rigidity of wages, especially in the short run, is blamed mainly on the negotiated nature of wages, which are laid down in wage contracts, often for several years, making short run wage variations impossible. In the long run, real wages can be lowered to a certain extent mainly in Northern European countries, where labour markets are characterised by their consensus-based approach to wage setting. It is most difficult to change wages in the Southern European countries. Notable exceptions to this taxonomy are France and Germany, who are also both characterised by very downward rigid wages. Most observers estimate that in these countries, a large part of unemployment is caused by institutional rigidities such as burdensome wage negotiations and employment regulations rendering labour markets less flexible.

[3] as referenced in Erkel-Rousse (1997)

Europe currently faces two major labour market issues relevant for EMU. Firstly, there is a need to bring down the relatively high (both historically and in OECD cross-country comparison) unemployment rate to avoid a shift in the political preferences in some EMU countries away from price stability to employment-creating but inflationary monetary policy. Seeing that a homogeneous shift of these preferences in all countries is unlikely, this would almost certainly lead to the demise of EMU.

Secondly, there is a need for greater 'flexibility' in the labour markets. This is a generally ill defined notion, but its general meaning in relation to OCA Theory is that those shocks formerly counteracted by exchange rate adjustments are now subject to adjustment via the labour market. ***Flexibility is, then, given if labour markets adjust to new demand conditions without producing large amounts of long-term unemployment.*** This would essentially entail low costs of job shedding (and therefore of new employment), low tax and social security payments on labour and low barriers to entry into employment. (For a more detailed definition, refer to chapter 3.) It is important to note that such greater flexibility is not a requirement only thrown up by membership of EMU. There is evidence that even before EMU, shocks were not usually homogeneous within the same national territory, but rather affecting specific sectors across several countries at the same time (i.e., individual countries did not constitute OCAs). In this case, the exchange rate would never have been of much use and the case for labour market flexibility is even greater as even a re-introduction of national currencies would be unlikely to solve the problem of asymmetric shocks.

These findings have caused a range of economists, employers and especially the European Central Bank to make calls for labour market reforms increasingly loudly. Such reforms are seen as essential to ensure the sustainability of EMU. As has been shown, the problem is twofold and concerns both the level of unemployment itself, and the readiness of Euroland labour markets to adjust to idiosyncratic shocks. Reforms ensuring a move towards such a 'flexible' labour market with low unemployment rates conflict with political problems: while everyone agrees that the reduction of unemployment should be at the top of policymakers' agendas, the views on the ways in which to attain this goal vary widely. Since labour market flexibility is regarded with a lot of suspicion by the general public, who fear that they will be

condemned to lower wages, reduced job security and even short spells of unemployment, moves towards this goal are politically very difficult to put into practice. Efforts of policymakers have therefore concentrated on popular reforms designed to bring more people to work. Such policies have included the creation of publicly subsidised positions and state-funded work contracts in jobs judged to be socially useful.

The French and Italian initiatives to implement a 35-hour working week are examples of such policies. While the Italian version is a voluntary provision, however, the French policy is compulsory and applies to practically all employers. This radical approach is hoped to create a large number of jobs without necessarily reducing the current income level. In the following, the content of the French legislation is analysed in the light of the labour market criterion of the Theory of Optimum Currency Areas and its potential implications for the sustainability of EMU are examined. In order to do this, a look at the new law and the French labour market in general will be useful.

- **The French Unemployment Problem**

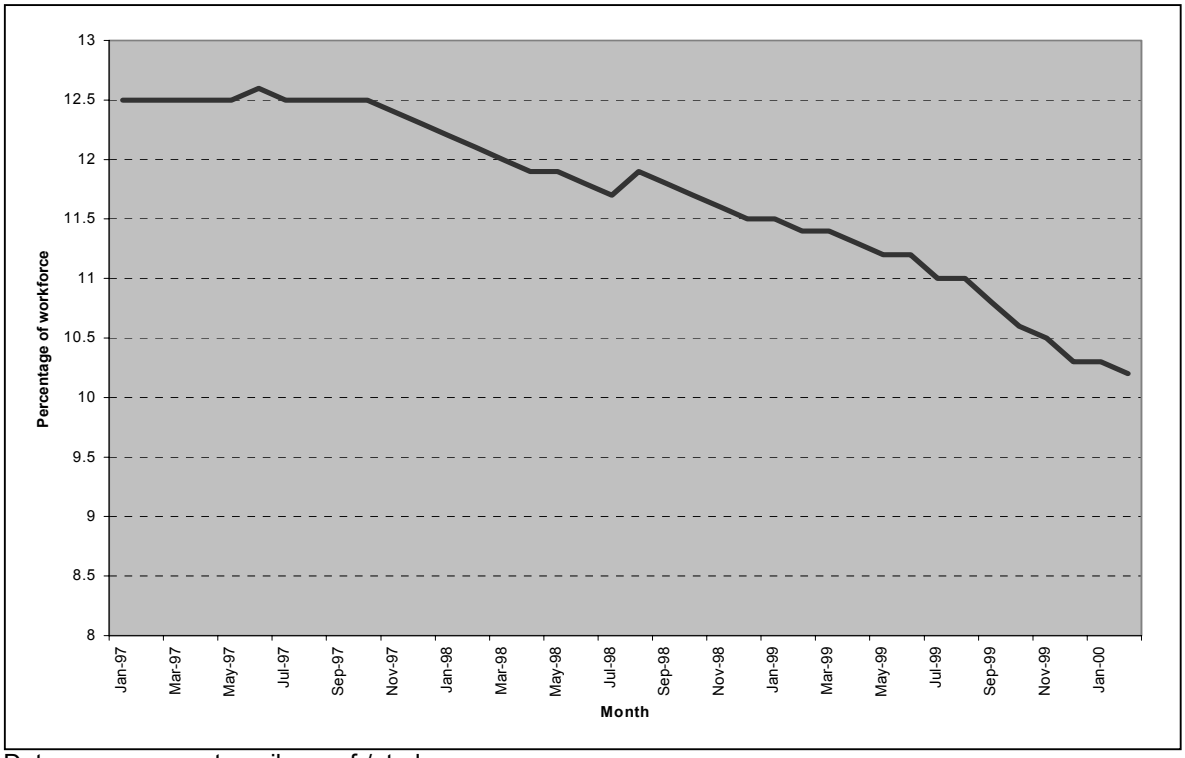
While unemployment has been an ongoing problem in most European countries since the economic downturn marked by the breakdown of the Bretton Woods system and the oil shocks, it has been more pronounced in some countries than in others. Throughout the 1990s, France has been among those EU countries suffering from the highest rates of unemployment. Recently, its jobless rate – although, as Figure 1.1 illustrates, now falling steadily – has only been exceeded by that of Spain. Indeed, unemployment forms one of the major preoccupations of French politics and prompts frequent introductions of new labour market legislation intended to reduce the jobless rate.

French Labour Market characteristics

During the recession of the 1990s the effectiveness of the French labour market has been called into question. While, according to the European Commission (1997, p.

2), the general unemployment rate is comparable to that of other EU countries in the same cyclical situation, the French unemployment rate has been (slightly) above the OECD average since the late 1980s. This is the reason for the high place that unemployment reduction takes on the French political agenda.

Graph 1.1: The French unemployment rate (ILO definition)



Data source: www.travail.gouv.fr/etudes

Unemployment continued to increase without a break from 1968 to 1985, when it fell again for the first time before continuing to rise, this time only until 1988. Then, until 1990, the situation improved before the growth slowdown of the 1990s caused it to worsen again. Closely following the cyclical fluctuations of the French economy, the unemployment rate peaked at 12.6% in June 1997, before starting to fall again after that. In February 2000, it was at 10.2%[4]. The OECD (1999a, p. 37) points out that the decrease was relatively slow due to the large amount of net labour market entries (140,000 per year).

[4] INSEE web-site (www.insee.fr), ILO definition

However, even when population growth tailed off slightly in the 1980s, the unemployment rate continued to increase, following its trend, which started in the first half of the 1960s. Since 1988, the working age population has continued to increase at rates between 100,000 and 200,000 annually due to demographic factors, labour market re-entry following a decrease in the unemployment rate, and employment policies with an influence on the activity rates of certain groups of the population, especially youth training schemes.

While the rate of unemployment has steadily increased, the employment rate has seen a different development: The first oil shock is reflected purely by a slowdown in the growth rate of employment, but the rate actually decreased from 1980 to 1986, before accelerating again, if not sufficiently to absorb unemployment.

Institutional labour market characteristics and recent policy developments

The European Commission (1997) characterises the French labour market as having a comparatively high rate of long-term unemployment, accounting for over 40% of total unemployment and with an average duration of 16 months, with half of the long-term unemployed staying without a job for more than two years[5]. This creates a burden for the state benefit system. Relatively little attention is paid in policy discussions in France to the differentiation between structural and cyclical (Classical and Keynesian) unemployment. Yet the OECD (1999b) estimates that structural unemployment is currently around 10%. While this has sometimes been blamed on restrictive monetary policy, Nickell (1997) believes that "the sheer length of time over which European unemployment has been growing is enough to deny a macro explanation."[6] It is thus more likely that the phenomenon can be blamed on a number of institutional features of the labour market. Indeed, the OECD (1999b) finds that "over-regulation and constraints on competition tend to reduce potential and actual growth" (p. 69). An example of rigid labour market regulation are overtime rules, restricting both the number of legal overtime hours and establishing minimum remuneration requirements (OECD, 1999b, p. 84).

[5] OECD (1999b), p. 37

[6] As cited in Artis (1998), p. 104

Wages and framework conditions are negotiated between trade unions and employers' federations. Although union density is low (about 10%), trade unions are powerful because union coverage is high (catching about 90% of employees). While national agreements tend to treat framework conditions, wages are determined on a sectoral basis and can be adjusted on the firm-level. On the low-income scale, France has an indexed minimum wage (SMIC), which is prescribed by law and can be increased as an economic policy measure. It is among the highest minimum wages in the EU[7]. Non-wage labour costs in France are also among the highest in Europe[8], caused mainly by relatively high social security contributions. The tax wedge between gross take-home pay and labour cost is between 33 and 43%[9].

As Cohen *et al* (1997) show, a notable feature of the French labour market is its organisation into two separate markets, with short-term (one-year) contracts – renewable once and for which separations are relatively easy – on one side, and long-term contracts with higher firing costs on the other. "Almost all new entrants (mainly young workers, but also female workers) are hired on short-term contracts. They are clearly those who experience the higher separation rates. Indeed, French society puts all the burden of flexibility on these workers." (Cohen *et al*, 1997, p. 272) But while "low firing costs raise younger workers' separation rates, (they) also increase their hiring rates" (p. 273). An increasing share of employees (now 4% of total employment) is using fixed-term contracts, and temporary employment has become widespread. These developments are generally interpreted to reflect relatively high costs of hiring workers caused by high costs of firing them. Thus, companies prefer to opt for contracts with fixed terms allowing them to renege on severance entitlements. This development is continuing, as "four-fifths of the jobs created in 1998 took the form of short-term contracts" (The Economist, 2000, p. 20). According to the OECD (1999b), it is precisely this "promotion of temporary and part-time work which (has…) contributed to employment growth" (p. 56).

Another specificity is the high level of youth unemployment[10] (about 25% of young people under 25 are unemployed), with considerable degrees of geographical

[7] Dohse and Krieger-Boden (1998), p. 145

[8] Dohse and Krieger-Boden (1998), p. 146

[9] The exact rate depends on employees' tax status (marital status, total income etc.).

concentration. First employment for young people now takes longer to find and is less durable: 44% of working young people are on temporary, apprenticeship, fixed-term or state-financed contracts. Policies focusing on the educational system have aimed to reduce the number of school-leavers without a qualification, whose chances of finding a job were three times lower than those of youths with a school-leaver certificate. Secondary education is being restructured to become more focused on the future professional life of pupils.

A less-than-average development of part-time work, a social security system exerting a heavy weight on indirect labour costs and low-skilled labour in particular, and the relatively poor development of both business and consumer services are further features of the French labour market. Tax incentives have been used to promote the utilisation of part-time working, although the number of people stating that they work involuntarily in this way is much higher in France than in other countries using this working practice.

The successive French governments have not been inactive in implementing policies intended to bring down unemployment. Intervention has often been justified by the country's low degree of collective bargaining practices (Cette, 1998), leading to outcomes regarded as socially suboptimal. A large number of initiatives have caused an increase in public spending on employment from 0.9% of GDP in 1973 to 3.9% in 1996, while the number of persons covered by subsidy schemes increased from 0.1 million to 2.2 million in the same period (OECD, 1999a, p. 51).

More recent policy developments have focused on the reduction of social contributions especially on low-skilled labour. A regressive rebate, proportional to the number of hours worked and applicable for workers paid up to 1.3 times the minimum wage (SMIC), was introduced in 1996 and reduced the cost of labour by 12.6% (see Table 4.1 below).

A striking characteristic of French labour market reforms is that they tend to face significant social opposition. Political difficulties continue to mean that while some reforms appear to be a step in the right direction, the opposite seems to be true in

[10] The following paragraphs are based on OECD (1999a).

others. Thus, rather than lowering unemployment benefit payments, they were increased and the period of eligibility for benefits was lengthened, thereby potentially discouraging a quicker and more effective job search on the part of the unemployed.

While employment protection legislation is already relatively high in France, there are plans to reinforce such provisions even further to reduce the chances of redundancies. In addition, compulsory redundancy payments for persons over the age of 50 have been increased, thus reducing the likelihood of the older unemployed to be hired. Redundancy plans have to be accompanied by retraining schemes, further increasing the cost of job shedding.

In order to reduce youth unemployment, the current socialist government has introduced a scheme which aims to employ young people aged between 18 and 25 in community service jobs which would otherwise have been provided by neither the public nor the private sector. Other policies include the provision of skills training for the long-term unemployed, as well as several different programmes seeking to offer part-time public sector employment to this social group with the aim of providing them with a new opportunity to enter the labour market.

The law on working time reductions

The 35-hour week forms part of the ongoing fight against unemployment. The French government has described it as a logical step in the historical evolution: the number of hours worked per week has steadily declined over the years. In 1936, the country saw the introduction of a 40-hour week, followed by a one-hour reduction in 1982.

In 1996, the Robien law was introduced offering employers reducing their staff's working time by 10 to 15 percent and an analogous increase in their headcount generous reductions in social security contributions, applicable to the entire workforce. The only condition was that the newly created jobs would be kept for at least two years. Similar provisions applied to companies that, after introducing the shorter working week, decided not to go ahead with planned redundancies. The Robien law, however, was of a voluntary nature and of little success with an estimated 34,000 jobs created or saved.

As a result, the new socialist government decided in 1997 to introduce legislation making the move to the 35-hour working week compulsory for all companies. Under this legislation, the normal working week is reduced from 39 hours to 35, with effect from February 2000 for companies of 20 employees and more, and from 2002 for the rest.

Financial incentives[11] were given to firms implementing the shorter working week before the deadline in the form of a reduction in social security contributions per employee whose working time is reduced, and per new job created. These subsidies are available for all firms implementing a working time reduction of at least 10 percent with a subsequent increase in the headcount of at least 6 percent. They are regressive over five years and likely to be maintained at the minimum level of assistance after that.

While keeping the maximum yearly limit of overtime hours constant[12], the law, by its nature, lowers the limit of normal weekly hours worked above which overtime must be paid.

The reduction in working time is intended to be effected without a cut in the wages perceived by workers – this would represent an 11.4% increase in wages –, although this is not prescribed by the law which foresees that company- or sector-specific deals be negotiated between employers and social partners. These negotiations would concern the flexibilisation of working times, which would for example allow a company to introduce shiftwork enabling it to decrease its downtime due to labour market restrictions. This is intended to increase the productivity of French companies, making them more competitive. In addition, the annualisation of working time means that employers can require employees to work more one week and compensate them in terms of fewer hours in another, as long as both are in the same year. If employers choose to compensate their workers in additional days of leave, these can be credited to a “time savings account” and must be used in the five years following the credit.

[11] Refer to chapter 4 for details.

[12] For restrictions of this statement, refer to chapter 4.

The Aubry law is not a simple reduction in the maximum legal normal weekly working time; it contains a number of other provisions that may potentially improve the working of the labour market. It will be treated in more detail in chapter 4.

Chapter 2: The effects of the 35-hour initiative on the labour market

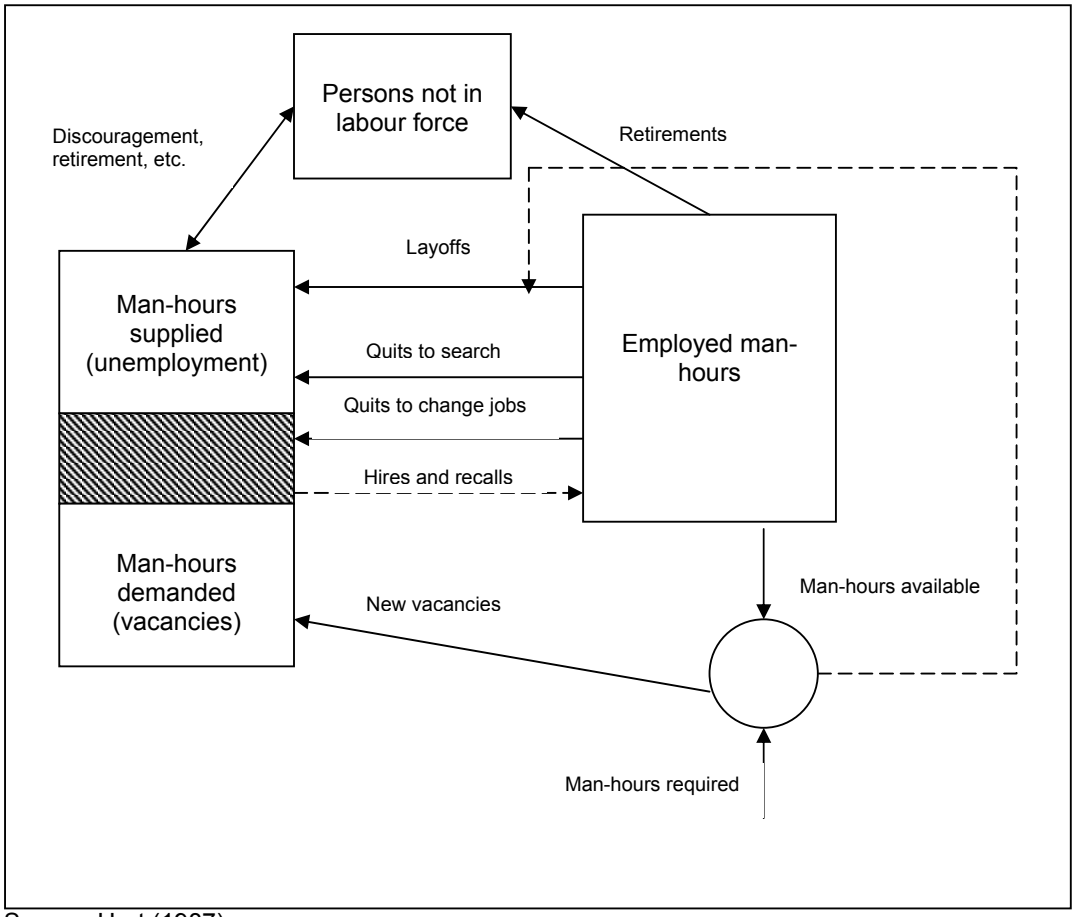
- **The theoretical framework for the analysis of working time reductions**

The French initiative is based upon a simple rule of three. If an imposed reduction of the weekly working time is applied to a large part of the economy, work will be 'freed up' and thus increase firms' requirements for additional workers. This would result in an increased hiring rate, which would, in turn, reduce unemployment. This approach poses a number of theoretical problems related to its underlying assumptions. I will briefly look at the theoretical arguments to construct an analytical framework, then in more detail at some of the points raised, namely the effect of the policy on unemployment and on other labour market variables.

The first problem is commonly referred to as the 'lump of labour fallacy' and identifies the most striking assumption underlying the approach of cutting unemployment through a reduction in the working week, namely that the amount of labour available in an economy is fixed. Thus, the policy of cutting every individual's working time by a certain percentage and substituting a new employee for the work liberated in this way would eventually succeed in reducing the number of people looking for work by exactly the same percentage. In this way, a sufficient cut could theoretically lead to full employment. Yet, the pool of labour is never fixed. The labour market is subject to a number of flows. More specifically, there are significant flows between the pool of unemployed workers looking for a job and those who are not part of the labour force. People who have been unemployed for a long time may become discouraged or reach retirement age and leave the labour market, while new entrants and re-entrants frequently move in. The labour market in itself thus constitutes a collection of flows, which can be influenced by policy decisions. This is illustrated in Figure 2.1. Any policy creating a large number of jobs and initially causing a lower unemployment rate will result in the re-entry of people having previously left the labour market due to discouragement. In this way, while the employment rate will increase, the rate of unemployment (defined as the percentage of the working-age

population actively seeking employment) will not necessarily decrease by the same amount and may even remain largely constant. This argument is further strengthened if the supply of labour changes as a result of the introduction of the Aubry law. The Lucas critique might apply if the policy influences the expectations relating to job search success of the agents with a preference for jobs requiring them to work only 35 hours a week (but not 39) and as a result causes their unanticipated entry onto the labour market.

Figure 2.1: Labour market schematic according to Holt



Source: Hart (1987)

Analogously to the previous argument, the policy also implies that the amount of output – and therefore of work – in an economy is fixed and cannot be increased. This is reflected in the way the 35-hour initiative is also referred to: “Work-sharing”. From a theoretical point of view, this raises two points. Firstly, the amount of work ‘available’ in an economy is by no means fixed but typically increases as a result of

economic growth (which unambiguously increases output[13]). Economic growth, in turn, is caused by appropriate policies, such as research and development programmes[14]. Furthermore, the rate of economic activity will increase with the number of entrepreneurs starting up a new business, for example following a tax incentive to become self-employed. The present policy can thus be described as a 'defensive' one; it effectively resigns itself to the assumption that the economy is no longer able to create more work and thus needs to divide up the amount of available work among everybody. Essentially, this is the same as sharing unemployment among all members of the working-age population.

Secondly, inherent in the reasoning of the initiative is the perfect divisibility of labour. It assumes that a four-hour cut in the working time of one employee will liberate four hours of work for another employee. This, however, is only true if the economy is structured according to the principles of Taylorism: assembly-line work where, once all workers are properly trained, the amount produced does not vary according to the time a single worker spends on the task. However, where the speed of production is not imposed by the assembly line, a cut in the working time may very well have an effect on the amount of work made available. Indeed, the French initiative was partly sold by the government on the premise that a reduction in the working week would result in an increase in labour productivity, a statement consistent with the concept of decreasing marginal productivity of labour. Thus, it may well be the case that a four-hour reduction in working time liberates significantly less or even no work for another person. I will return to the issue of the productivity gains induced by the French policy below.

The Aubry law also makes an implicit assumption about the labour force itself, namely that labour is homogeneous and that as a result the pool of unemployed will include a sufficient number of workers who can fill any newly created posts. In other words, "hours and workers are seen as perfect substitutes" (Drèze, 1982, p. 41). While this is probably the case in some sectors and especially in low-skilled jobs, it is unlikely to be true in others. Yet the law imposes a working time reduction across

[13] The negative relationship between output and unemployment is described by Okun's law. See, for example, Mankiw (1992) for a description.

almost all sectors of the economy, which may result in reduced output in those ones experiencing skill shortages, assuming that the law is correctly applied.

Furthermore, for a cut in the weekly hours worked to unambiguously result in an increase in employment, the assumption of upward sticky wages and prices must hold. If this is not the case, prices and especially wages may adjust to the changed supply and demand situations and could counteract the employment-creating effect of the work-sharing policy (reduced unemployment will exert upward pressure on wages, which in turn will have adverse employment effects). This view, put forward by Layard (1986), explains why in France, much emphasis was put on the desire of the government to associate the Aubry law with several years' wage moderation.

Given that such moderation is supported, this implies another assumption, namely that workers have a preference for leisure over work, allowing them to increase their utility by accepting a wage freeze in return for more leisure. However, when given the choice between the current situation and the reduction in working time, the majority of workers prefer the status quo, displaying a clear preference for the maintenance of their purchasing power rather than their overall utility (Taddei, 1998, p. 6), which includes leisure time.

Layard and Nickell (1986)[15] raise another important point arising from considerations of the NAIRU model. "If wage setters attempt to set real wages at a level which is higher than that which is consistent with employers' pricing behaviour, the result will be ever increasing inflation. Unemployment (…) has therefore got to rise to offset this effect"[16] if real wages are set above their NAIRU-consistent equilibrium level as a result of a reduced-size unemployment pool following implementation of the Aubry law. Eventually, unemployment will return to the NAIRU level. The result would be an unchanged quantity of workers, each working four hours less per week. The national product in this case would decline as a result of the legislation.

[14] Of course, under EMU governments are restricted as to what growth policies they can implement. Research and development assistance is one of the policies used by the European Union to increase its competitiveness and foster economic growth.

[15] quoted in Sapsford and Tzannatos (1993)

[16] Sapsford and Tzannatos (1993), p. 402

Thus, the French initiative is subject to a substantial number of theoretical criticisms concerning its underlying logic. The fact that so many of its inherent assumptions are disputed probably means that it will not be as successful as it is hoped. It is, however, likely that it will still lead to some employment creation and I will now turn to a short analysis of some of the studies which have tried to quantify the policy's effects.

- **Analysing the French policy's effects on unemployment**

A number of studies have tried to quantify the likely effects of the working time reduction on the level of unemployment in France. Before reviewing some of them, it is necessary to construct an analytical framework to highlight the factors that need to be included in such an exercise.

Naturally, any analysis needs to take into account both the size and the scope of application of the working time reduction. The cuts in working time could be very small, or amount to a relatively large share of total hours worked, and effects on employment would consequently vary according to the magnitude of the reduction. Equally, if the initiative concerns only one sector, the job-creating effect on the whole economy will be much smaller than a wholesale application across all areas of activity. The French policy in particular has been criticised for its all-encompassing approach introducing the 35-hour week in two stages.

Productivity is an essential variable to be taken into account in any analysis of working time reductions. It is an argument both for the camp in favour of the Aubry law and for the camp against. As has been mentioned before, the defenders of the policy have argued that a reduction in the number of hours worked would result in increased labour productivity, an argument based on two main premises. The first one is the decreasing marginal productivity of labour as total hours of work increase[17]; the second one is that the per capita reduction of hours worked and especially the accompanying measures for the flexibilisation of working time

[17] This theoretically sound argument seems to be disputed by current developments in the US, where "workers work longer than workers in any other industrialised country and are also the most productive." (ILO, 1999, p. 2). This would suggest that the theoretical assumption of decreasing marginal productivity of labour does not hold, yet the report goes on to say that productivity growth is currently higher in Europe "despite" moves to shorter working weeks.

arrangements would enable firms to make greater use of their capital equipment, for example through the introduction of more shiftwork. This would reduce machine downtimes and lead to overall increased productivity of labour due to its higher productivity at the margin.

In general, productivity increases are desirable because of their wealth-creating effects. In terms of their employment-creating effects, however, their role is disputed. As Malaval (1999) points out, a process innovation (such as a reorganisation of capital utilisation) where output is fixed will allow savings in factors of production, which will reduce demand for labour and therefore employment. The overall effect will depend on the innovation's capacity to reduce the demand for labour and on the elasticity of substitution between the two factors of production. If, on the other hand, output is not fixed and the increase in productivity allows producers to lower the prices of their goods, the consequentially increased demand will allow them to increase their production and therefore raise their demand for labour. For this to be the case, however, the demand elasticity must be such that the amount of goods demanded increases more than the productive capacity following an increase in productivity; otherwise there would be no need to hire new workers. Any study analysing the potential effects of a working time reduction must therefore make an assumption about the magnitude of the productivity gains to be made. If the percentage of productivity gains exceeds that of the percentage working time reduction, there will be no employment creation (in this particular case, there would even be employment destruction). So far I have ignored another important aspect which must be seen in conjunction with productivity increases, namely the behaviour of wages.

Wages play an important role in a firm's decision on how much labour to employ. Of course, it would be wrong to say that wage levels are the only criterion; there are many more relating to the firm's production structure and alternative factors of production. It is common textbook theory that labour demand is a function of the real price of labour (W/P) relative to the real price of capital (K/P). In other words, a rise in the price of one factor of production will tend to reduce the intensity with which that factor is used. Thus a rise in the wage rate relative to the rental cost of capital will tend to lead firms to choose more capital-intensive techniques in the long run (Begg *et al*, 1994). As a result, it seems fair to assume that a rise in the wage rate is likely

to result in capital-labour substitution and a decrease in the demand for labour, although that decrease is likely to be less than proportional. If, however, labour productivity increases, thereby increasing the marginal product of labour, the equilibrium wage rate will increase proportionally and such a wage rise will not result in reduced labour demand. Should wages go up by less than productivity, labour demand is even likely to increase. A productivity increase could therefore compensate a higher wage rate which may be induced if the French government's calls for wage moderation in conjunction with the working time reduction are not heeded or if, as Börsch-Supan (1999) envisages, even with unchanged hourly contract wages effective labour costs still increase due to a greater demand for overtime work or increased wages due to capital-labour substitution.

Thus, wages must not increase by more than productivity in order for a working time reduction to represent a gain for producers and therefore provide them with an incentive to employ new workers. As the OECD (1994) points out, there is usually great reluctance among workers to accept a wage cut proportional to the reduction of their working time. If wages are kept at the pre-reduction rate, as is the aim of the French project, it is clear that, *ceteris paribus*, productivity increases need to compensate for the effective increase in unit labour costs (amounting to 11.4%). If the working time reduction exceeds the productivity increase[18], a firm faces four options[19]:

[18] where both are expressed in percentage changes

[19] These options have been put forward by Schettkat (1986).

1. Reduce output proportionally to the working time reduction
2. Compensate for the reduction by using more overtime
3. Compensate for the reduction by using additional labour
4. Seek further productivity increases to produce the same output using the same amount of labour working shorter hours.

The first option sounds improbable, but as Hart (1987) points out, this decision is more likely to be taken by small firms who are unable to free up enough work to employ an additional person than by large firms who might have less problems to do so. Indeed, this seems to be an accurate reflection of events after the last French working time reduction in 1982.

A firm is thus not forced to react to a reduction in the legal working time by increasing its workforce, and will base its decision on the costs entailed by each option. Hence, any study needs to take into account what firms' decisions may be – a look at the different costs is necessary. The French initiative maintains the existing overtime wage[20] so as not to increase firms' incentives to opt for that possibility. At the same time, the labour subsidy aims at bringing the costs of the third option down.

Employers face a wide host of fixed costs related only to the number of workers employed and not to the amount of time they work. Elliott (1991) distinguishes between non-recurring fixed costs related to initial worker training and firing costs. Recurring fixed costs are employers' social security contributions (unemployment and health insurance, pension contributions), fringe benefits (canteen, company cars), employee care, and most importantly, payment of annual and sick leave. Any changes in these fixed costs (especially social security contributions) need to be considered in the assessment.

The French law includes provisions for subsidies given to firms hiring additional workers as a result of a general working time reduction. It is useful to be clear on how much of the cost of hiring a marginal member of staff is picked up by public funds,

[20] Except for a transitional period in the first year of the law's application, when overtime rates are lower – refer to Table 4.3 for more details.

and how much is left to be financed by employers. Clerc (1999)[21] shows this using the example of a company originally employing 100 staff and hiring the minimum requirement of new employees to be eligible for the subsidy: 6% of the old headcount following an hours reduction of 11%. The average annual cost of employing six workers is FRF180,000 each; this represents additional costs of FRF1.1m. The employer will receive the regressive state subsidy of at least FRF4,000 per year and *for each worker it employs*, not just for the additional six workers, bringing the amount of the subsidy to FRF424,000. Hence, the subsidy can pick up about half of the higher cost incurred by employers. The rest would need to be compensated through one of the mechanisms described above. This shows that the French policy will impose some costs on employers, even though it is accompanied by a subsidy scheme. This is further confirmed by Taddei (1997), who notes that such a cost increase is usually among the features of working time reductions, even if these costs are not always apparent right from the entry into force of the new regulation.

- **Predicted employment effects: Empirical studies and previous experience**

Several types of studies exist to inform on the potential outcomes of the French initiative. Firstly, there are the studies which look at the exact provisions of the law and use predictions relating to the underlying economic variables (such as growth) to estimate the effects of the policy on unemployment econometrically. Secondly, there are purely theoretical studies which treat the regulation, and the third type are historical studies looking at past experiences. A few of these studies are summarised in the following[22].

Estimations by the OFCE[23] dating back to 1993 saw the possibility of the creation of 2.5 million jobs. The study was based on the assumption of zero productivity gains and on cost stabilisation. A 1998 study by the same office foresees a creation of 810,000 jobs three years after the law's entry into force, but only a total of 640,000 after ten years. The analytical scenario was based on zero wage compensation and absence of productivity gains from the reorganisation of working methods. With

[21] Calculations shown are slightly adapted to reflect final contents of the actual law.

[22] The following three paragraphs are based on a summary in Malaval (1999).

[23] Office français des conjonctures économiques

reorganisation and wage increases in line with the ensuing productivity gains, the result was even more favourable: 910,000 jobs created.

The government agency DARES[24] estimated a job-creating potential of 700,000 accompanied by a growth slowdown, based on the following assumptions: Working time reduction of 10%; productivity gains of 3.3% with corresponding wage increases; a one-point reduction of social security charges per weekly hours reduction; all employees are concerned by the reduction. Criticism of this model has focused on its optimism, reuniting all favourable hypotheses. The long-term growth slowdown it predicts has featured in the arguments of the policy's opponents, as has the foreseen worsening of public finances, and companies' reduced profit resulting from the assumption that the costs of the policy are evenly spread between employers and employees. A study compiled by the Bank of France equally predicts 730,000 jobs "created or saved"[25] at a horizon of five years.

Conditions for success cited in many studies include the need for wage decreases in line with working time, cost neutrality for firms and a reorganisation of working practices resulting in machine utilisation times no shorter than before the reduction. Because of the fragile nature of the studies' assumptions, their authors have pointed out that they were intended simply to show under which conditions employment effects would be maximised, rather than estimating the policy's effects. The discrepancies between the studies' results are explained by differences in the underlying assumptions concerning all the variables laid out in the previous section.

Another range of studies looks at the past experiences with working week reductions. The first kind deals with the 1982 reduction of one hour in France, and the second kind deals with such initiatives in other countries.

One study of the first kind is Crépon and Kramarz (2000), who attempt to draw lessons from previous French experience. In 1982, the one-hour cut was unexpected

[24] Direction de l'animation de la recherche, des études et des statistiques

[25] Official assessments of the impact of the Aubry law refer to "jobs created or saved" (*emplois créés ou préservés)*, taking into account not only those jobs directly created but also those initially planned to be subject to redundancy but subsequently not cut (and thus "saved") as a result of a review of businesses' employment plans following the implementation of the legislation. This also explains why the estimates cannot be compared directly to the reduction in unemployment.

by firms and followed a 1981 increase in the minimum wage. “These changes in the legal framework led to large employment losses. (...) Gains in hourly productivity associated with the reduction of hours appear to have been insufficient to compensate firms for the increase in hourly pay.” (p. 28) Looking at the current initiative, they predict adverse effects for the low-skilled workers paid at minimum wage because they do not have any scope for lowering their hourly wage, becoming dependent on state subsidies for their job security[26]. Cette (1998) warns that while the initiative should reduce the Keynesian element of unemployment, it must not increase the structural one by increasing production costs.

Hunt (1999) examines the German efforts to introduce sectoral work-sharing arrangements from 1985. She finds that the German efforts were accompanied by full wage compensation, effectively increasing hourly wages. As a result, the study concludes that the policy had a counterproductive effect, actually reducing the level of employment. She concludes that “Germany’s work-sharing experiment has allowed those who remained employed to enjoy lower hours at a higher hourly wage, but likely at the price of lower overall employment” (p. 145).

No matter what the results are of the different studies in terms of employment creation, the common denominator is that for the policy to be effective, it must be accompanied by wage moderation or at least wage compensation less than proportional to the percentage decrease in hours. The French government has called for wage moderation, and this seems to have been heeded so far. The policy may therefore have an employment-creating effect, albeit a mitigated one. It can only have an effect on Keynesian unemployment, which probably amounts to roughly two percentage points of the French unemployment rate[27]. Seeing that Keynesian unemployment may be transformed into Classical unemployment in the longer term, it should be clear that the French initiative may be a way of reducing this flow from Keynesian to structural unemployment. In order for the Classical element of employment to be cut, however, a higher degree of labour market flexibility is likely to be needed. This is even truer if the labour market is to become more adjustable in

[26] The number of workers being paid the minimum wage is crucial for the assessment of wage flexibility. We will return to this idea in chapters 3 and 4.

[27] Cette (1998) estimates a maximum effect of 2 percentage points and examines the policy’s effects on Keynesian unemployment.

the face of asymmetric shocks. The remainder of this study examines the effects of the French initiative on flexibility and the next chapter proceeds with the definition of this term.

Chapter 3: Defining labour market flexibility for EMU

Labour market flexibility has been advocated as the solution to making EMU sustainable in the face of asymmetric shocks. 'Flexibility' is in fact composed of a large number of factors, all of which are ideally viewed as complementary. Table 3.1 gives an overview of the elements of labour market flexibility[28], which are presented in more detail in this chapter.

Labour market flexibility can be analysed in a three-level framework, the first of which I will label "goal", which is clearly a sufficient degree of responsiveness to exogenous shocks. Borrowing further from monetary policy terminology, the second level gets the label "targets" and includes three types of flexibility. Each of these then has a number of "instruments" assigned to it; these are the variables which, when changed, will have an effect on the degree of flexibility displayed by a particular labour market. In the following, each of these "instruments" will be analysed as to its relevance to EMU.

The **adaptability of aggregate and relative wages** refers to the responsiveness of wages and non-wage labour costs (see below) in the face of an asymmetric shock on the job market. If adaptability is high, wages will adjust to re-equilibrate supply and demand on the labour market and minimise the effect on employment. A lack of adaptability would hamper this adjustment mechanism and consequently, the magnitude of the (negative) effect on employment is positively related to the significance of the lack. We can distinguish between aggregate and relative labour costs, informing on the capability of the whole economy and the individual sectors of production, respectively, to adjust wages. Clearly, aggregate adaptability would only be of use if all sectors in one (national) economy were equally hit by an asymmetric shock in a greater monetary union. Relative labour costs, then, seem much more useful as an adjustment tool in EMU, where shocks are more likely to be sector-

[28] The first part of this chapter is based on the comprehensive definition of labour market flexibility presented in Dohse and Krieger-Boden (1998).

rather than country-specific[29], because they can bring labour markets back to equilibrium by signalling where labour demand is highest.

Table 3.1: The elements and hierarchy of labour market flexibility

LEVEL 1 ("Goal")	Responsiveness to exogenous shocks
LEVEL 2 ("Targets")	• Labour cost flexibility • Geographical and job mobility • Working time flexibility
LEVEL 3 ("Instruments")	
Target	*Instrument*
Labour cost flexibility	• Adaptability of aggregate and relative wages (sectoral, regional, age) • Wage bargaining system: Trade union centralisation and coverage • Hiring and firing costs (caused by employment protection legislation) • Minimum wage • Non-wage labour costs
Geographical and job mobility	• Education and (re)training (Active labour market and life-long learning policies) • Policies to increase geographical and occupational mobility • Income taxes • Wage compensation (benefit payments)
Working time flexibility	• Working time regulation: Flexibility on (number of) hours and time (of day) and spread (over time) • Part-time working, fixed-term

[29] A vast number of studies, such as Bayoumi and Eichengreen (1993), referenced in Pisani-Ferry (1994), have analysed the European shock structure. Most studies find a core of countries displaying a strong correlation between national shocks (although this core is not usually congruent with the group of countries now forming the euro-11). Given the large degree of diversification in most countries' economies, shocks are more likely to be sector-specific and involve several countries simultaneously.

Regulations on **minimum wages** reduce (downward) wage flexibility among low-skilled workers (who perceive the minimum wage, or only slightly more). As a result, an idiosyncratic shock affecting a sector with a large number of employees paid at the minimum wage will have a larger effect on unemployment than a shock affecting a sector where employees are highly paid *ex-ante* and able to reduce their wage claims *ex-post*. In this sense, minimum wages can have negative employment effects because they hamper downward wage adjustment.

Non-wage labour costs are charges incurred by employers when they employ a worker, such as social security contributions. Firms' cost structures are more inflexible, the larger the fixed amount of non-wage labour costs. Such charges therefore distort prices, hampering a purely market-based allocation of resources, especially if an asymmetric shock impacts on the price of labour.

Wage bargaining systems have an impact on the degree of wage flexibility. Calmfors and Driffill (1988) posit the theory that either a large degree of centralisation of wage bargaining, or a large degree of decentralisation are preferable to an intermediary arrangement. The latter would provide actors with too much influence on aggregate wage levels while lacking the incentive to consider the macroeconomic effects of their wage claims. Labour market performance was thus better in countries where the wage bargaining situation corresponded to one of the two extremes. A centralised system is said to ensure that wage claims incorporate expectations relating to the resulting effects on the whole economy. Decentralised wage bargaining, on the other hand, enables wages to be set according to the situation in individual companies. In the context of EMU, then, decentralised bargaining systems are preferable in the face of sector-specific shocks because the firm-specific wage adjustments they allow will minimise the degree of labour market distortion caused by an asymmetric shock. It should be noted that the positive employment effects of a very centralised wage bargaining system have been disputed. The concept of wage drift has been put forward as a reason, whereby the wage deals struck under these systems were not heeded on the firm-level and wages continued to drift upwards, negating the moderation displayed at the centralised level and contributing to unemployment. For wage flexibility as an adjustment mechanism, however, this could be good news rather than bad news: if under a centralised set-up firm-level wage

adjustment is possible, highly centralised wage bargaining systems are also desirable.

Apart from centralisation, the degree of trade union organisation must be examined for its relevance for flexibility. A low degree of worker organisation (trade union membership) does not necessarily signal a more flexible wage bargaining process. If wage contracts concluded at firm level by a particular (group of) union(s) are frequently declared generally applicable across a whole sector (as has been the case in France) or are used as a guideline for the wage bargaining process in other sectors, a decentralised system has no advantage over a centralised system. Only the **absence of generalisation of coverage** and **decentralised bargaining** would then signify a greater shock adjustment capacity via increased wage flexibility. If these two conditions are fulfilled, the degree of organisation is not relevant for flexibility.

Lastly, the **degree of coordination** in wage bargaining is significant. This is the extent to which employers and unions coordinate their wage bargaining activities (Nickell, 1997, p. 69). A high degree of such coordination prevents leapfrogging which drives wages up and is therefore more likely to result in unemployment.

High **geographical and job mobility** is the form of labour market flexibility initially advocated by Robert Mundell (1961). It increases an economy's ability to adjust to a shock while impacting to the least degree possible on the overall employment situation. Two types of mobility can be distinguished: On the one hand, mobility between jobs or even between types of activity; on the other hand, mobility between geographical locations of employment. The greater the willingness of people to engage in these types of mobility, the greater the shock adjustment capability of an economy. Pure willingness, however, does not suffice: structural elements have an influence on the degree of mobility. The main factor is high costs of hiring and firing. The greater the cost incurred by a firm for each new job created or shed, the greater is its incentive to keep its labour turnover low. Thus, reduced hiring and firing costs can increase labour mobility, especially between jobs. Mobility between activities can be increased through the provision of training schemes targeted at providing new

entrants to the labour market or the unemployed with the necessary abilities to find employment in a sector where there are skills shortages.

High **income taxes and benefits** can have a detrimental effect on flexibility by affecting the incentive structure of the unemployed to look for work. If income taxes and unemployment benefit payments are both high, then the threshold from which employment pays sufficiently to induce movement from the pool of unemployed labour to the pool of employed labour is high. Thus, a greater level of labour market flexibility is achieved by providing the unemployed with incentives to look for a job as quickly as possible after they have become unemployed. Low unemployment benefits and special tax treatment to bring down the marginal tax rates for re-entrants are usually advocated to achieve an appropriate incentive structure.

Geographical mobility can be increased by structural policies aimed at reducing the costs of moving from one location to another. The ability of policy action to influence these costs, however, is limited. Tassinopoulos *et al* (1998) split the costs of mobility into several categories, including work-related costs (need for retraining, loss of workers' expertise in local preferences) and leisure-related costs (loss of family proximity, implications for social life). An important category is related to housing, where mortgage terms and property market rigidities or regulations restricting access to public housing are barriers to mobility.

Finally, increasing **working time flexibility** is another way of reducing labour market rigidities. When prices in the labour markets are sticky and cannot respond to shocks, the adaptation of working time may act as adjustment mechanism. The possibility to adjust working times to allow a more continuous usage of productive capital can reduce costs and therefore act as a shock absorber. Thus, any legislation imposing time constraints on firms' operations must be regarded with care. The same applies to legislation limiting the amount of time employees are allowed to work over a certain period (e.g. an average weekly working time over one year). The shorter the period defined in the legislation, the more restrictive it is. The greater the restrictions, the lower the possibilities of adjusting the duration of work to any shock, even temporarily. In the context of this study, we therefore need to look at two issues regarding working time regulation: The number of maximum hours of work permitted

over a certain period of time compared to the average number of hours worked over the same period, and the length of the period over which the number of hours can be averaged. Clearly, the greater the difference between the permitted maximum and the actual[30] number of hours worked, the more room there is for adjustment when the optimal response of a firm to a shock is to increase the number of hours worked. Equally, the longer the period available for averaging of working time, the more flexible employers are to respond to any shocks.

Some forms of employment contracts induce more flexibility in the labour markets than others. For example, part-time working (ideally negotiated between employer and employee to render the contract perfectly adapted to the needs of both) can help absorb some excess supply of labour because it contributes to a better matching of the demand to the supply side and therefore allows the reduction of market imbalances following a shock. The application of part-time working is however limited by a restricted willingness on the part of employees to engage in such contracts, which in some countries, including France, are regarded as 'abnormal' and 'precarious'.

Working time flexibility also includes the use of fixed-term contracts. While the same criticisms as those applied to part-time contracts are frequently put forward in France, the use of fixed-term contracts can be viewed as a response to high hiring and firing costs applying to open-ended contracts. Because they usually do not apply to fixed-term contracts, firms faced with this cost problem tend to resort to the latter. Fixed-term contracts are thus a way of circumventing high hiring and firing costs by adjusting the working time factor.

Active labour market and life-long learning policies can increase labour market flexibility by tackling the mismatch between the current and future pool of unemployed on one hand and vacancies through training or retraining of the jobless on the other. The more qualifications individuals hold, the more likely they are to be able to switch employment following an adverse shock affecting their job. By increasing workforce qualifications, ALMPs (for the unemployed) and policies

[30] The actual number of hours worked is assumed here to be expressed by the average number of hours worked, which in turn will be close to the average weekly hours restriction imposed by law.

promoting 'life-long learning' (for those in work) can positively contribute to an economy's adjustment capability through the labour market.

There are thus a large number of elements which can all increase flexibility in the labour market in such a way that there will be less impact on employment following an asymmetric shock, rendering EMU more sustainable. The second part of this chapter proceeds with the formal modelling of flexibility.

- **Modelling flexibility**

Flexibility is usually modelled as a function of wage rigidity, which is its most straightforward feature. If wages adapted fully to a shock, there would be no need to focus on the other elements of labour market rigidity. Since this is not the case, wage and price stickiness needs to be accounted for in a separate variable and the other elements of flexibility need to be modelled in isolation.

Layard, Nickell and Jackman (1991) model real and nominal wage rigidity in the following way. In a standard wage-setting equation and a price-setting equation, they relate the wage level (w) to the level of unemployment (u) and inflation (Δp):

$$w - p = \gamma_0 - \gamma_1 u - \gamma_2 \Delta p$$

$$p - w = \beta_0 - \beta_1 u - \beta_2 \Delta p$$

This gives a Phillips curve

$$\Delta p = \frac{\beta_1 + \gamma_1}{\beta_2 + \gamma_2}\left(u - \frac{\beta_0 + \gamma_0}{\beta_1 + \gamma_1}\right)$$

so that the NAIRU (non-accelerating inflation rate of unemployment) or natural rate of unemployment is

$$u^* = \frac{\beta_0 + \gamma_0}{\beta_1 + \gamma_1}$$

The term $ß_1 + \gamma_1$ reflects the degree of real wage flexibility. The inverse reflects the degree of real wage rigidity:

$$RWR = \frac{1}{\beta_1 + \gamma_1}$$

Thus, the larger is RWR, the larger is unemployment. In order to make this model comprehensive, I make the assumption that the variables in the term ($ß_1 + \gamma_1$) allow for the degree of sectoral, regional and personal differences[31] to be accounted for in the assessment of flexibility, so that every $ß_1 = ß_\alpha + ß_{regional} + ß_{sectoral} + ß_{personal}$. Equally, every $\gamma_1 = \gamma_\alpha + \gamma_{regional} + \gamma_{sectoral} + \gamma_{personal}$.

Effecting a number of manipulations, the authors then arrive at an expression which allows them to relate unemployment to real wage rigidity (RWR), nominal inertia (NI = $ß_2 + \gamma_2$) – i.e. wage and price stickiness – and an 'institutional structures' factor, z, which catches all other non-wage labour market rigidities and on which I will focus in the following. Thus,

$$u = b\, u_{t-1} + (1-b)\, RWR\, (a_0 + a_1 z - NI\, \Delta m),$$

where b is a hysteresis coefficient which is assumed to take a value lower than 1, and m is the logarithm of nominal GDP adjusted for trend growth.

The model assumes that any asymmetric shocks only affect part of the EMU zone and no other part of the world, so that the exchange rate of the euro against an outside currency does not represent a viable adjustment tool and can therefore be ignored. Equally, EMU is assumed to be irrevocable, allowing the exclusion of the (effectively fixed) internal exchange rates. This makes sense because it is precisely the economy's adjustment capability in the absence of the exchange rate we are trying to assess.

[31] Personal differences refer to differences in individual workers, where they are in a position to bargain their own individual wage.

The degree of real wage rigidity depends on γ_1, which shows what the effect on wages is of a move from one unemployment equilibrium to another. The greater γ_1, the greater real wage flexibility. For the purposes of this model, I will assume that γ_1 is influenced positively by several factors which should be intuitive. Applying the Calmfors and Driffill (1988) hypothesis that either a large degree or a small degree of **union centralisation** is preferable to the intermediate solution, γ_1 would be large if one of the two extremes was true. It would be smaller if this was not the case, accounting for the fact that in the latter situation, unemployment would not be taken into consideration in wage claims, resulting in their imperfect adjustment. This could be remedied by a high degree of **coordination** (DC), which would positively influence γ_1 through its dampening effect on wage growth. Conversely, a higher degree of **generalisation of coverage** (GC) would relate negatively to γ_1 because it would essentially negate the benefits achieved by decentralised wage bargaining practices.

The degree by which **benefit system** generosity (length and relative level of support) will influence γ_1 is not clear. The literature is split on the exact mechanisms benefit provision entails. While one part of the literature states that job search is made less attractive by prolonged benefit payments (essentially, the steady income flow lowers the incentive to search for jobs), the conflicting view is that on the contrary, continuous benefit payments allow job searchers to intensify their quest for a position, raising the probability of receiving a job offer. Another view is that continued benefit payments encourage continued job searching, but still entail longer spells of unemployment. The effect of benefit payments on the length of unemployment spells is therefore not conclusive and would depend on the exact provisions of the benefit system. For example, if benefit payments are conditional on job search activity, the second view is more likely. If this is not the case, the first view would be more appropriate. In the case of France, there have been suggestions that high unemployment benefits discourage job search activity (see chapter 4 below).

Finally, I assume γ_1 to be constrained by minimum wage legislation (the two are negatively related), which will prevent or slow the downward adjustment of wages, albeit only in the low-skilled segment of the labour market. γ_1 is then related to the relative level of the **minimum wage**, weighted by the number of employees paid at or near this rate.

The hysteresis coefficient b is assumed by the authors also to relate (positively) to the length of benefit payments and (negatively) to the degree of co-ordination, while nominal inertia (NI) is negatively related to wage flexibility.

The remaining elements of flexibility will be modelled as influencing the variable of institutional rigidities, z, which takes crucial importance in this model, while in the original model it is more or less exogenous. The variable will firstly capture indicators of geographical and professional **mobility**, such as the latter's elasticity[32] with respect to unemployment and wage differentials (both between regions and sectors). Clearly, *z is negatively related to this elasticity* because, as has been explained in detail above, the higher mobility (measured here by the elasticity), the greater the economy's capacity to adjust to an asymmetric shock. Equally, all *policies aimed at increasing mobility will tend to decrease z*.

Secondly, z will capture the incidence of **non-wage labour costs** (NWLCs). These, in turn, can be split into two major categories, namely taxes incurred on labour and the general costs incurred through employment protection legislation (EPL). Layard (1999) describes the issue of taxes in detail. Distinguishing between payroll taxes (taxes on labour) and consumption taxes (such as VAT), he makes the point that the latter are preferable to the former because they do not display a bias towards the taxation of labour but rather focus on the taxation of income. Clearly, any taxation applied to labour and not applied to income from other sources (unemployment benefits, capital gains) will put a negative bias on labour and make access to the labour market relatively less attractive, slowing the market's ability to adjust smoothly. A tax on consumption is less distortive and should therefore be preferred to one on labour, implying that *z is positively linked to the relative weight in the tax base of payroll against consumption taxes*.

Employment protection legislation refers to all kinds of regulations rendering the firing of employees difficult and therefore costly[33], impacting on firms' hiring

[32] This is an indicator proposed by Elliot (1991).

[33] It should be noted that Bertola (1990) challenges the view that job security provisions can be associated with higher labour costs and unemployment. He finds no empirical relationship between the degree of employment protection and medium and long run employment performance. He

behaviour as "hiring a worker becomes a somewhat irreversible decision" (Siebert, 1997, p. 49). The comprehensive EPL indicator compiled by the OECD (1999c) includes such elements as procedural barriers to dismissal, the length of any notice periods, the statutory amount of severance pay, the definition of unfair dismissal and others. It is compiled in a summary score – ranging "from 0 to 6 with higher values representing stricter regulation" (OECD, 1999c, p. 57) – of overall strictness of protection against dismissals. Thus, *z will be positively related to the magnitude of the EPL indicator* because the greater the degree of EPL, the more costs a firm incurs when adjusting the size of its workforce and the less able and willing it is as a result to do so. *z will also be positively related to the size of* ***overheads***. These increase, for example, due to bureaucratic administrative procedures associated with the hiring of an employee.

Thirdly, z will be influenced by **life-long learning policies**. These are policies designed to encourage the training or retraining of workers to attain the qualifications required to take up existing or future vacancies. This will lead to more perfect matching, reducing unemployment spells and increasing the dynamism of an economy by improving the skills of the labour force. Thus, *the more significant the use of life-long learning policies in an economy, the lower will be z*.

The last group of elements relates to **working time flexibility**. In this respect, a number of different types of policies exist and can interact in complex ways. The most obvious form of restriction concerns the weekly number of hours worked. Any rule on how long each individual employee can be active in any one week is necessarily restrictive. Firms cannot adjust their production (and therefore the number of hours they require their employees to work) to short-run fluctuations, creating excess unmet demand for short-run labour in the case of a positive shock, and excess supply of such labour in the opposite case. Normally, such laws include a number of provisions, however, that allow a certain degree of hours variability. One usual feature is the usage of overtime. Firms facing a positive short-run shock

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nevertheless concedes that the high degree of unemployment persistence in Europe can be explained by the relatively high degree of EPL and also notes that job security provisions helped to alleviate the employment effects of the oil shocks. This somewhat proves the point which is made here, i.e. that higher EPL hinders firms from quickly adjusting to exogenous shocks by shedding labour (indeed, if this was not the case, the job security provisions would be useless) – thus reducing flexibility.

(seasonal or not) can usually resort, to a limited extent, to overtime. Workers then have to be compensated for H_{OT}, the amount of time worked above the regular maximum weekly limit (H_{REG}) and cannot work more than a total (or absolute) maximum weekly limit of hours (H_{MAX}). This can be expressed in the following form:

$$H_{MAX} = H_{REG} + H_{OT}$$

The lower (i.e. the more restrictive) H_{MAX}, the greater will be z. In the usual case where the maximum number of hours worked overtime is strictly limited over a long period of time (such as a year), however, resorting to overtime is not a viable solution except if shocks are very short-term or their incidence is small. Weekly working time restrictions may include provisions allowing the maximum number of hours worked per week to be understood as an average over a certain length of time. While weekly working time may still be limited by an overtime ceiling (H_{OT}), this type of provision allows some more flexibility in the organisation of production according to requirements. Assuming that a firm aims to minimise fluctuations in its workforce to avoid hiring costs, the length of the period over which working time can be averaged out is highly significant. This can be shown in the following way:

$$A = \frac{\Sigma H_i}{a},$$

where H_i is the number of hours worked in week i and a is the averaging period in weeks. A, then, is the average weekly number of hours worked over period a, where A is restricted by H_{MAX}. Note that in the long run (i.e. over period a), the condition $A < H_{MAX}$ must hold, A tends towards H_{REG} (but can be equal, higher or lower), and that H_{MAX} can never be exceeded in any one week. Nevertheless, if H_{MAX} is sufficiently generous to allow firms to increase their production following a shock[34] by temporarily producing above H_{REG}, the *length of the averaging period a will negatively influence z* because it increases firms' capability to adjust to short-run disturbances. The same reasoning applies to the weekly limit imposed over the averaging period, thus *A is negatively related to z*. It should be clear that the greater the difference between maximum regular hours and maximum total hours including overtime, the

[34] I assume here the absence of any H_{MIN} legislation, which would increase rigidity in the case of negative shocks as well.

easier it is for a firm to adjust to a shock. Thus, the lower the ratio H_{REG}/H_{MAX}, the less working time flexibility a firm is subject to. *H_{REG}/H_{MAX} is negatively related to z*. However, overtime wages must be taken into consideration as well, as excessive overtime payments may put prohibitive costs on a firm wishing to run at overtime. Hence, *the greater the difference between regular wages (w_{REG}) and overtime wages (w_{OT}), the greater will be z*.

Lastly, *restrictions on the extent to which part-time, temporary and fixed-term work contracts can be used by companies increase z*. Such contracts represent more flexible forms of working, often dealing away with the problems posed by regular employment contracts, notably hiring and firing and other employment protection legislation, and may also provide more flexibility on the times of day worked.

Table 3.2 below sums up this simple model, which will form the basis of the analysis of the Aubry law's effects on labour market flexibility in France and the implications for the sustainability of EMU. The preceding analysis can be summarised in the following equations which illustrate the relationships between the different elements of labour market flexibility and the 'institutional rigidities' variable z. In addition, the variables influencing γ_1 can be put together in a formula.

$$z = \alpha_0 + \alpha_1 [\varphi_1 \frac{PT_{TB}}{CT_{TB}} + \varphi_2 O + \varphi_3 EPL + \varphi_4 (w_{OT} - w_{REG}) + \varphi_5 R_{AWC}]$$

$$- (1 - \alpha_0 - \alpha_1) \{\varphi_6 [\varepsilon (\mu_{U,d(w)})] + \varphi_7 LLL + \varphi_8 H_{MAX} + \varphi_9 a + \varphi_{10} A + \varphi_{11} \frac{H_{REG}}{H_{MAX}}\}$$

$$\gamma_1 = \gamma'_0 + \gamma'_1 |c| + \gamma'_2 DB - \gamma'_3 GC + \gamma'_4 [\chi_1 (\frac{w_{MIN}}{w_{AV}} n_{MIN}) + \chi_2 G_{BS}]$$

where $\varphi_{1,...11}$ and $\chi_{1,\ 2}$ are the relative weights of the individual flexibility elements (their sum will be 1); α_0 and γ'_0 are constants; and α_1, γ'_1 and γ'_2 – as well as $(1-\alpha_0-\alpha_1)$ – the relative weights of the groups of explanatory variables (their sum will also be 1). Any error terms are omitted.

These equations show that labour market flexibility is composed of a significant number of different elements and that simply modelling real wage rigidity and labour

mobility is not sufficient for the analysis of labour market structures. There are far more factors influencing flexibility. In the next chapter, the effects of the French law on the tendency of each identified variable will be examined.

Table 3.2: The main relationships between the variables of the model and z

Instrument	Indicator and formal expression	Relationship to z
Geographical and professional mobility	Elasticity of mobility with respect to unemployment rate and wage differentials $\varepsilon(\mu_{U,d(w)})$	Negative
Non-wage labour costs	Taxes: Relative weight in the tax base of payroll against consumption taxes $\frac{PT_{TB}}{CT_{TB}}$	Positive
	Overheads: Large overheads cause labour to become more expensive O	Positive
	Degree of employment protection legislation as defined by OECD EPL	Positive
Life-long learning policies (and ALMPs)	LLL	Negative
Working time regulation	Restrictions on weekly hours worked H_{MAX}	Negative
	Length of averaging period and maximum limit of hours worked over the averaging period (if different from H_{MAX}) 'a' and 'A'	Negative
	Relation between maximum weekly hours and maximum regular weekly working hours $\frac{H_{REG}}{H_{MAX}}$	Negative
	Difference between regular and overtime wages $(w_{OT} - w_{REG})$	Positive
	Restrictions on 'abnormal' work contracts R_{AWC}	Positive

Table 3.3: The main determinants of γ_1

Instrument	Indicator and formal expression	Relationship to γ_1
Wage bargaining	If union centralisation is very high (c=1) or very low (c=-1), the effect on x is positive, otherwise (c=0) it is negative x = (-1) +2 |c|, where c can take values -1, 0 or 1 and x can take the result -1 or 1. x is then positively related to γ_1.	Positive function of x
	Generalisation of coverage (GC) counteracts all gains from decentralised bargaining structures.	Negative
	The higher the degree of coordination (DC), the less upward wage pressure there will be.	Positive
Benefit systems	Generosity of benefit systems and job search efforts are negatively related. G_{BS}	Unclear, but likely to be negative
Minimum wage	Minimum wage laws increase real wage rigidity for employees paid at or near the minimum rate (n_{MIN} is their number as a percentage of the total workforce). The relationship gains significance, the higher the ratio of the minimum wage to the average wage. $\frac{w_{MIN}}{w_{AV}}$ n_{MIN}	Negative

* Note that γ_1 is negatively related to RWR

Chapter 4: The Aubry law and labour market flexibility

This chapter analyses in more detail the effects of the Aubry law on the defining components of labour market flexibility, relating each one of them to the model developed in the previous chapter.

- **Geographical and professional mobility**

The Aubry law does not include any provisions designed to increase either type of mobility, nor does it include any measures which are susceptible of having the same effect, even unplanned. It is therefore reasonable to assume that flexibility will not be affected via this channel as a result of the new legislation (refer, however, to the potential effects of life-long learning policies below):

$\Delta z[\varepsilon\ (\mu_{U,d(w)})] = 0$ ([35])

- **Non-wage labour costs**

As has been shown, the French law provides for job subsidies for all businesses implementing the 35-hour week in the form of lower social security contributions and are made up of two distinct elements. The first is a permanent yearly subsidy of FRF4,000 per employee[36] for all firms implementing the law and not receiving any other aid in connection with it. The second element is a reduction in social security charges on low incomes, designed to lower the net cost of labour and exceeding the amount necessary to compensate firms for the wage increase implicit in the reduction of working time at wages constant due to minimum wage legislation. In this case, downward adjustment of wages is impossible. Table 4.1 illustrates the sum of both

[35] The expressions in the following should be read as "the change in z induced by…" For our analysis, it is sufficient to determine whether the effect will be positive, negative or neutral.

[36] This applies to all employees, not just those hired as a result of the working time reduction.

subsidies according to the wage level and compares them to the subsidies available before the introduction of the new law.

Table 4.1: Total amount of social security reductions for firms at 35 hours

Level of minimum wage (SMIC)	Reduction before the law (in FRF per year	Reduction after the law and per employee)
1.0 SMIC	15,000	21,500
1.1 SMIC	10,000	17,700
1.2 SMIC	5,000	14,600
1.3 SMIC	0	11,900
1.4 SMIC	0	9,600
1.5 SMIC	0	7,700
1.6 SMIC	0	5,900
1.7 SMIC	0	4,400
1.8 SMIC	0	4,000

Source: Ministère du Travail, www.35h.travail.gouv.fr

The new subsidies are available for an unlimited time and are subject to yearly revaluation based on price and wage developments. The table shows that the new subsidies reduce the cost of low-wage labour significantly more than before the law was introduced. Thus, the level of payroll taxation is reduced for those firms that adopt the 35-hour week and all other provisions of the law; non-respect of these is sanctioned by increased social security payments. As a result, PT_{TB} is reduced by the new legislation, and seeing that the latter does not include any change regarding the taxation of consumption, the relative weight of payroll taxes in the overall tax base (PT_{TB}/CT_{TB}) declines, thereby decreasing z in the present model, so that

$$\Delta z\left(\frac{PT_{TB}}{CT_{TB}}\right) < 0 \text{ (negative)}$$

Chapter 2 (page **Error! Bookmark not defined.**) mentions that only part of the additional costs caused by the Aubry law is picked up by the subsidies, and this ignores the costs incurred by the increased bureaucracy (FT, 2000). Seeing that instant cost absorption through productivity gains is improbable, firms will – at least initially – be faced with increased overheads, so that the law increases average labour costs, increasing z in the short run (i.e. until the additional costs have been absorbed by productivity gains). Thus, $\Delta z(O) > 0$ (positive).

- **Restrictions on 'abnormal work contracts'**

The above reductions in social security contributions also apply to part-time workers[37] who decide to work less as a result of the law; equally, temporary workers are eligible provided the reduction in contributions accrues to the firm benefiting from the employee's work, rather than the employment agency. This is significant on two accounts. Firstly, this provision shows that these types of working arrangements are consistent with the government's employment plans, an observation running counter to a generally perceived attitude in France[38]. Secondly, it also shows that this change in political preferences has resulted in a relative treatment of these types of contracts which is not less favourable than before the introduction of the law, despite political pressure to reduce the usage of such types of working. As a result, $R_{\mathbf{AWC}}$ does not change in this model.

$\Delta z(R_{\mathbf{AWC}}) = 0$

- **Employment Protection Legislation**

Administrative restrictions to job turnover have generally been relatively high in France, but have not figured amongst the strictest in European cross-country comparison. Furthermore, French EPL has not generally tended to increase, but has largely remained at the same level between the late 1980s and the late 1990s. The OECD (1999c, p. 57) summarises the indicators of EPL strictness for regular employment for these two periods, distinguishing four main areas: regular procedural inconveniences, notice and severance pay for no-fault individual dismissals, difficulty of dismissal, and overall strictness of protection against dismissals. Table 4.2 below shows the OECD's results for the French labour market, with summary scores ranging from 0 to 6, where higher values represent stricter regulation[39].

[37] Provided their regular working time is equal or superior to half the regular full working time

[38] The frequent references to 'abnormal types of work' and 'emplois précaires' illustrate this attitude well.

[39] For more information regarding the calculation of these scores, refer to the Annex of OECD (1999c).

Table 4.2: OECD indicators of EPL strictness for France (country ranking)

Regular procedural inconveniences		Notice and severance pay for no-fault individual dismissals		Difficulty of dismissal		Overall strictness of protection against dismissals	
Late 1980s	Late 1990s	Late 1980s	Late 1990s	Late 1980s	Late 1990s	Late 1980s	Late 1990s
2.5 (15)	2.8 (20)	1.5 (10)	1.5 (13)	2.8 (10)	2.8 (14)	2.3 (9)	2.3 (14)

Source: OECD (1999c), p. 57. Parentheses report country rankings, No. 1 = least EPL strictness

The more interesting value for the present study, however, is the country ranking assigned to France. Comparing the two periods of analysis, it is striking that while the strictness indicator has practically not changed between periods, the country has fallen in the relative OECD country ranking in all four categories. This illustrates the rigidity of French employment legislation and would indicate a need for reform in this area. Meanwhile, the Aubry law does not foresee any amendment to employment protection legislation as such. Positive indirect effects could arise if the implementation of the law leads to the usage of more fixed-term contracts, which are easy to terminate at the end of the contracted term. We will neglect this possibility and conclude that no direct change in EPL is foreseen. Thus,

$\Delta z(EPL) = 0.$

- **Active Labour Market Policies and provisions for life-long learning**

"Life-long learning" has been praised in recent time as one of the ways to reduce unemployment. By providing education and (re)training to individuals, the workforce becomes more polyvalent and able to move between jobs. This means that the job mobility potential is greatly increased and so is the capacity to adjust in the face of an adverse shock.

Workforce polyvalence is favoured by the Aubry law, which provides for the possibility of worker training, partly during working time and partly during employees' free time. In this way, the law aims to encourage employees to use more of the time freed up by the hours reduction for educational purposes.

The training cost is to be paid entirely by either the employer or special professional funds, or split between the two. Training supplied under this provision must, as far as

possible, lead to a professional qualification, which supports the argument that this will increase employees' job-switching potential. Thus,

$\Delta z(LLL) < 0$ (negative):

The law provides for life-long learning programmes liable to reduce future structural rigidities due to skills mismatch in the French labour market. Given that these policies are voluntary, however, the uptake rate is likely to remain relatively low, so that the negative effect on z may be small.

- **Working time regulation**

Restrictions on weekly hours worked

Despite the fact that the Aubry law sets the regular working week at 35 hours, overtime working is permitted up to a limit of 48 hours. This is the limit set down by the European Working Time Directive, which was applied even before the introduction of the French law, so that the maximum limit remains unchanged. Derogations to this regulation are possible in specific cases. Thus, H_{MAX} remains constant and there is neither a positive nor a negative impact on this type of flexibility: $\Delta z(H_{MAX}) = 0$

Conversely, the value of the relation (H_{REG}/H_{MAX}) decreases as a result of the reduction of H_{REG} to 35 hours, so that

$$\Delta z\left(\frac{H_{REG}}{H_{MAX}}\right) > 0 \text{ (positive)}$$

The 35-hour restriction imposes greater rigidity on the labour market.

Length of averaging period

For the calculation of the average weekly working time, an averaging period of up to a year is permitted. This is however subject to an additional averaging rule imposing

a maximum weekly average of 44 hours (A) over twelve consecutive weeks (a). While the length of the period has not changed, the number of hours has been reduced by two. Thus, while variable a remains constant, A is reduced, so that

$\Delta z(a) = 0$ and $\Delta z(A) < 0$ (negative).

Regulations concerning overtime wages

The two-tiered implementation of the law requires a staggered application of overtime regulations; the old regulations still apply to smaller businesses, while larger ones are already subjected to the new rules, according to which overtime payments are triggered as soon as the weekly working time exceeds 35 hours. The compensation rates are summarised in Table 4.3 below. In addition, each employee disposes of an overtime allowance of 130 hours yearly (this has not changed); every hour beyond this threshold is subject to an additional 100% compensation in free time. The threshold is reduced to 90 hours for those firms making use of working time annualisation – effectively penalising companies having opted for the more flexible approach to working time limitation.

Table 4.3: Compensation rates for overtime working (in percent of H_{REG})

	First 4 hours	Next 4 hours	Additional hours
Before 35h law	25% (H40 to H43)	25% (H44 to H47)	50% (from H48)
After 35h law	25% (10% in 1st year) (H36 to H39)	25% (H40 to H43)	50% (from H44)

Source: Ministère du Travail, www.35h.travail.gouv.fr

Table 4.3 illustrates statutory overtime compensation before and after the introduction of the law. The two differ on only two accounts: firstly, the threshold has changed so that overtime payments kick in earlier (H_{REG} is reduced). Secondly, in the first year of application of the new law[40] overtime payments for the first four hours (i.e. the difference between $H_{REG(new)}$ and $H_{REG(old)}$) are reduced to 10% to aid firms with the transition to the new working arrangements. If this transitory period is

[40] The first year of application for businesses with more than 20 employees is 2000, for all others it is 2002.

ignored[41], it can be asserted that the relative cost of overtime remains constant with the introduction of the law; in other words, the difference (w_{OT} - w_{REG}) remains unchanged, so that

$\Delta z\ [(w_{OT} - w_{REG})] = 0.$

It should be noted that this is true even if the working time reduction is accompanied by full wage compensation, effectively representing a rise in wages, as overtime payments are expressed in percentages.

It has been shown that the 'institutional rigidities' variable z is influenced by a large number of elements. These are summarised in Table 4.4. It is interesting to note that the Aubry law affects three determinants of z in a way such that institutional rigidities are reduced, while two of them have rigidifying effects, one of which applies only in the short run. Although this study does not attach relative weightings to the individual elements of flexibility, this would suggest that the Aubry law could in fact have a positive effect on the reduction of institutional rigidities in the French labour market.

[41] This is reasonable given that its short duration of one year is unlikely to induce businesses to adapt their behaviour.

Table 4.4: Summary of the Aubry law's effects on the determinants of z

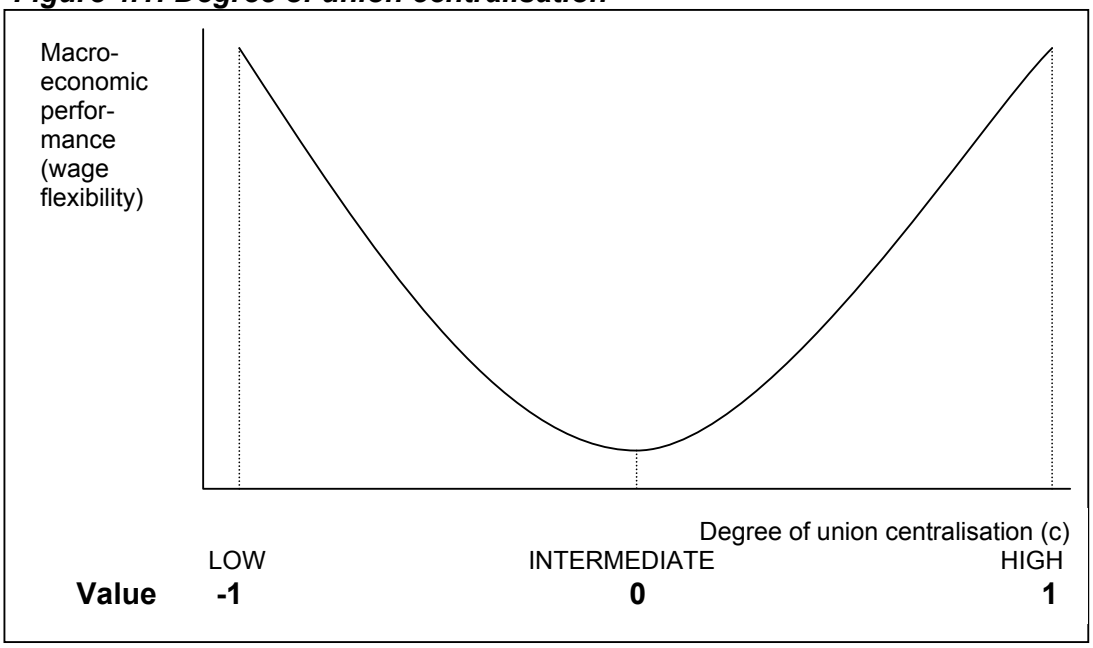
Element	Formula	Effect on z
Mobility	ε ($\mu_{U,d(w)}$)	neutral
Relative tax weight	$\frac{PT_{TB}}{CT_{TB}}$	**negative**
Overheads	O	**positive** (short run)
Restrictions on abnormal work contracts	R_{AWC}	neutral
Employment Protection Legislation	EPL	neutral
Life-long learning policies (and ALMPs)	LLL	**negative**
Weekly hours restrictions	H_{MAX}	neutral
Relation between regular and maximum hours	$\frac{H_{REG}}{H_{MAX}}$	**positive**
Length of averaging period	a	neutral
Maximum hours limit over averaging period	A	**negative**
Difference between regular and overtime wages	(w_{OT} - w_{REG})	neutral

The effects of the law on real wage flexibility are less clear. In the following, we will proceed with the analysis of the elements influencing γ_1.

- **Wage bargaining and union structure**

The degree of union centralisation is, according to Calmfors and Driffill (1988)[42], relevant for the determination of wage flexibility. Very high or very low union centralisation has positive effects on flexibility, while an intermediate position encourages leapfrogging and has negative flexibility effects. Thus, the calculations in Table 3.3 allow us to determine the relationship between union centralisation and wage flexibility with the help of an intermediate variable, x. It uses the degree of centralisation (c) as input, where c can take the value –1 (minimum centralisation), 0 (intermediate centralisation), or 1 (maximum centralisation). Figure 4.1 shows how these values are assigned.

Figure 4.1: Degree of union centralisation



By using the equation shown in Table 3.3[43], we arrive at an outcome for x of either –1 or 1, which is positively related to γ_1 (i.e. negatively related to RWR). Thus, the closer the economy is to either of the two extremes of centralisation, the better this is for real wage flexibility.

[42] For a more detailed description, refer to Chapter 3.

[43] The purpose of this expression ($x = (-1) + 2|c|$) is purely to arrive at a value tending towards either –1 or 1, indicating the tendency of the degree of trade union centralisation/decentralisation to reduce or increase wage flexibility, respectively.

The Aubry law is based on the premise that the working time reduction and the related details, such as wage implications, need to be negotiated at firm or sectoral level. This is to be seen in the context of the French labour market, where co-operative wage negotiations between employers and employees do not form part of the usual habits, and where union behaviour has been rather centralised through the existence of provisions ensuring generalised coverage of lead settlements. If the law succeeds in prompting a general movement to more decentralised and co-ordinated negotiation, this means that the economy is moving towards the value of –1 in terms of Figure 4.1. The evidence suggests that this is in fact the case: 26,618 firm-level agreements (covering 3 million employees) and 132 sectoral agreements (covering 10 million employees) had been reached until March 2000[44]. While sectoral agreements correspond to the intermediate level of bargaining, and would therefore be seen as bad according to Calmfors and Driffill, they are subject to renegotiation at the firm level where this is required, effectively providing a framework for negotiation. In fact, only 20% of all companies subject to a sectoral agreement have applied it without any modification to tailor it to firm-specific requirements[45]. Thus, a more decentralised and more co-ordinated wage bargaining structure seems to be attained in France. This could lead to more wage flexibility, so that

$\Delta\gamma_1$ (x) > 0 (positive), where x = (–1) + 2 |c|, with c tending towards (–1),
$\Delta\gamma_1$ (DC) > 0 (positive)
$\Delta\gamma_1$ (GC) = 0.

The change in the negotiating structure in the French economy may be the biggest improvement brought about by the Aubry law. If it leads to continued decentralisation by establishing a durable negotiation relationship between employers and employees (co-ordination), and the practice of generalisation of coverage is reduced, this is likely to increase overall wage flexibility in the French labour market.

[44] Data available from www.35h.travail.gouv.fr

[45] Data available from www.35h.travail.gouv.fr

- **Benefit systems**

No changes in the system of unemployment assistance are currently planned to accompany the efforts to reduce working time. The absence of such efforts has prompted criticism especially from employers' associations, who in April 2000 "put forward ambitious back-to-work proposals that both provide incentives for those on unemployment benefit to seek jobs and threaten to penalise those who fail to take advantage of job offers" (FT, 2000, p. 2). It can therefore be asserted that there is an absence of benefit reform susceptible of increasing labour market flexibility:

$\Delta\gamma_1 (G_{BS}) = 0$

- **Minimum wage regulations**

Minimum wage rules increase the downward flexibility of wages for those workers paid at or near the minimum level. Two aspects are important to assess the impact on wage flexibility of such regulations: firstly, the amount of workers paid at or near the minimum wage as a proportion of the total workforce (n_{MIN}) – the greater this proportion, the less wages will be flexible downwards. Secondly, the level of the minimum wage relative to the average wage is significant: the greater this ratio, the higher the minimum wage and the likelihood of its interfering with the adjustment capacity of the wage. Thus, the greater the product of the two (and the closer it is to 1), the lower will be γ_1 (and the greater will be RWR). The value for France is 0.17[46], which does not seem overly high.

The Aubry law does not include any provisions relating to the minimum wage level, nor does it explicitly change the number of workers employed at SMIC level. It is, however, conceivable that the prescribed reduction in hours could lead to a greater proportion of (at least newly) employed workers being paid at SMIC level (the reduction in hours being compensated by lower starting wages, which will lead to a greater proportion of employees being paid at the minimum). Thus, n_{MIN} will increase to give

[46] Refer to Annex 1 for details.

$\Delta\gamma_1$ ($\frac{w_{MIN}}{w_{AV}}$ n_{MIN}) < 0 (negative).

Table 4.5 summarises the effects of the law on the variable γ_1. Two opposing forces are found to act on real wage rigidity: While union decentralisation and an increased degree of coordination tend to lower it on one hand, the fact that the working time reduction may lead to more new workers being employed at SMIC level tends to increase rigidity. However, the latter effect is likely to be less significant than the first two because it affects a relatively small number of employees, while the wage bargaining process and union structure cover almost the entire economy.

Table 4.5: Summary of the Aubry law's effects on the determinants of γ_1

Element	Formula	Effects on γ_1	Effects on RWR
Union centralisation*	x	positive	**negative**
Degree of coordination	DC	positive	**negative**
Generalisation of coverage	GC	neutral	neutral
Benefit systems	G_{BS}	neutral	neutral
SMIC level and importance	$\frac{w_{MIN}}{w_{AV}}$ n_{MIN}	negative	**positive**

* Union centralisation is represented by variable c, which is included in x. Refer to text for details.

It can be concluded that the Aubry law has the potential to introduce more labour market flexibility by influencing two variables of the model presented here: Institutional rigidities and wage flexibility. The first variable is worsened by two aspects of the law, namely the increase in administrative costs imposed on firms and the restriction of weekly working time. These may be compensated for, however, by the other aspects of the law influencing the labour market in a more positive way: The tax system will focus less on labour and more on consumption, life-long learning policies will reduce mismatch and the working time restriction is alleviated by a

relatively generous averaging period. The law's effects on wage rigidity are more ambiguous. While it is likely to have a positive influence on the bargaining structure in wage negotiations in France, it may increase the number of workers perceiving the downward rigid minimum wage. The effect on the bargaining structure is, however, likely to outweigh the second one because it concerns a larger number of employees. The Aubry law may in fact hide its positive effects on labour market flexibility behind the curtain of a few rigidifying measures.

Conclusion

There are important labour market issues to be tackled if EMU is to be sustainable in the long run. The OCA Theory criterion of labour market flexibility informs on the important adjustment role played by the labour market in monetary union. Two aspects are important when considering the relationship between the labour market and EMU sustainability. Persistent high unemployment rates may cause an asymmetric shift of preferences from a stabilising monetary policy to an employment-creating monetary expansion. This would almost certainly lead to the break-up of EMU. To render it sustainable, unemployment needs to be lowered durably. The Aubry law is intended to do this, but as chapter 2 demonstrates, the legislation's employment-creating effects may be disappointing, not least due to the serious theoretical flaws underlying its argumentation. Any policy targeting job creation through indirect measures such as sharing out existing levels of work are likely to be second-best options. If employment creation – subsidised or not – is the prime target of the law, this could have been better achieved through more direct measures.

The second issue relevant for EMU sustainability is labour market flexibility, which plays an important adjustment role in the case of idiosyncratic shocks. On the face of it, a law restricting the weekly number of working hours would seem to be a move in the wrong direction and actually rigidify the labour market. The results of this study, however, are counterintuitive: the Aubry law includes a number of provisions that may contribute to a flexibilisation of the French labour market. In fact, it introduces a greater number of measures increasing flexibility than reducing it. While the relative magnitudes of the individual variables' importance remain to be seen, the legislation could be a Trojan-horse policy to introduce more suppleness into a labour market where union, political and public opinion is extremely opposed to the notion of increased flexibility.

The reduction of payroll taxes relative to consumption taxes and the life-long learning policies brought about by the law could have been implemented without the working time reduction. This would have been a first-best solution. But the measures of flexibilisation, and especially the move towards a culture of more wage negotiation (as opposed to the traditional conflicts between employers and employees), required

some political counterweight to convince voters that an increased degree of flexibility was not imposed upon them without some sort of reward. The policy has been heavily sold on its employment-creating effects (an issue close to the hearts of many French voters) and its positive effects on the quality of life arising from a greater amount of free time. The measures introducing more flexibility have hardly been touched upon. This strengthens the view that the Aubry law is a 'stealth' policy to introduce more labour market flexibility.

This has important consequences for the future of EMU. The French practice shows that even if voters are opposed to measures increasing labour market flexibility – for fear of job security loss –, there are ways to prepare labour markets for their role as shock adjustment mechanism for monetary union. These ways are not first-best options. But EMU is not doomed due to political deadlock on labour market reform. More flexibility can be achieved. It is now up to the other euro-11 countries to find the second-best options that will allow them to prepare their labour markets for the requirements posed upon them by EMU.

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ANNEX

Annex 1 – Minimum wages

At the time of writing, the statutory minimum wage (SMIC) was at FRF6881.68 per month.

Average annual earnings, as communicated in the series Tableaux de l'économie française (1999/2000 edition) were FRF131,120.

Thus, the annual SMIC was FRF82,580.16. This yields a value for (w_{MIN}/w_{AV}) of 0.63.

The share of workers paid at or near[47] the SMIC is reported by INSEE (1999) as 27.2% of the total workforce (1996 figure).

As a result, the product $[(w_{MIN}/w_{AV})\ n_{MIN}]$ equals 0.17.

[47] This includes workers paid at up to 1.33 SMIC.