



**CEPII**

**CENTRE  
D'ÉTUDES PROSPECTIVES  
ET D'INFORMATIONS  
INTERNATIONALES**

No 1999 – 13  
September

Forum Economique Franco-Allemand  
Reduction of Working Time/Eastward Enlargement  
of the European Union,  
5<sup>th</sup> meeting, Paris July 6-7 1999

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**FORUM ECONOMIQUE FRANCO-ALLEMAND  
DEUTSCH-FRANZÖSISCHES WIRTSCHAFTSPOLITISCHES FORUM**

Together with other members of the European Union, France and Germany are about to embark on an unprecedented cooperative venture. To be successful, Economic and Monetary Union will require a very high degree of mutual understanding among the policymakers of the participating countries. It will also require upgrading the dialogue between those who contribute to shaping the policy debates on both sides of the Rhine.

France and Germany have a long tradition of high-level dialogue and cooperation in the framework of bilateral and European institutions. But the dialogue between their civil societies does not match this spirit of cooperation. Economists and those involved in practical economic policy making from both countries in particular rarely talk to each other to find out why they may have differing visions of the functioning of Economic and Monetary Union and of the associated challenges, and even more rarely try to narrow the divergence of their views. This lack of dialogue contributes to keeping alive entrenched prejudices on the other country's supposedly hidden policy agenda.

Yet, an Economic and Monetary Union in which policy debates with a bearing on European policy choices remain confined within national boundaries would be prone to instability, because disagreements about policies would tend to end up in disputes between countries. It is, therefore, of utmost importance to foster the emergence of a genuine *European* professional discussion on major economic policy issues.

The purpose of the *Deutsch-Französisches Wirtschaftspolitisches Forum/ Forum économique franco-allemand* is to contribute to this discussion through the organisation of a series of informal meetings between French and German economists.

The Forum assembles professional economists from academia, business and the public sector. As a non-partisan institution, the Forum brings together participants from all strands of thinking about economic policy with the aim of stimulating fruitful debate. Each meeting is devoted to one or two major policy issues: employment, exchange rate policies, the organisation of economic policy in Economic and Monetary Union, its relations with non-participating countries, and the immediate policy challenges on the eve of monetary union, to name just a few. The Forum commissions papers to provide an informed basis for the discussion, but the focus will be on debate and the exchange of views, starting with reactions from discussants whose role will be to present alternative views and to frame the key issues for the debate.

The proceedings of each meeting are published in working paper format. With the present brochure, we present papers of the discussion from the Forum's third meeting on July 6-7, 1998. We hope that this will be a useful input into an emerging public debate on Europe's economic policies in our two countries and beyond.

Jürgen von Hagen  
Jean Pisani-Ferry  
July 1997



**FORUM ECONOMIQUE FRANCO-ALLEMAND  
DEUTSCH-FRANZÖSISCHES WIRTSCHAFTSPOLITISCHES FORUM**

Avec les autres membres de l'Union européenne, la France et l'Allemagne vont s'engager dans une coopération d'une dimension sans précédent. Pour réussir, l'Union économique et monétaire devra s'appuyer sur un degré très élevé de compréhension mutuelle entre les responsables politiques des pays participants. L'UEM nécessitera aussi d'approfondir le dialogue entre ceux qui, de part et d'autre du Rhin, façonnent le débat politique.

La France et l'Allemagne ont une longue tradition de dialogue et de coopération qui se déroule tant dans le cadre bilatéral qu'au niveau des institutions européennes. Mais les échanges entre les membres de la société civile ne reflètent pas cet esprit de coopération. En particulier, les économistes des deux pays se rencontrent rarement pour débattre de leurs différences d'approche sur le fonctionnement de l'UEM et sur les défis qui en découlent, et encore moins pour tenter de rapprocher leurs points de vue. Ce manque de dialogue contribue à alimenter des préjugés bien ancrés quant aux objectifs politiques supposés cachés du partenaire.

Cependant, une UEM dans laquelle les débats politiques qui ont une incidence sur les choix de politique européenne resteraient cantonnés dans les frontières nationales serait vouée à l'instabilité, car les désaccords sur les politiques à suivre pourraient dégénérer en conflits entre les pays. C'est pourquoi il est essentiel d'encourager l'émergence d'un débat véritablement *européen* et professionnel sur les principaux enjeux de politique économique.

L'objectif du *Forum économique franco-allemand* est de contribuer à cet échange à travers l'organisation de réunions informelles entre économistes des deux pays.

Le Forum rassemblera un nombre restreint d'économistes professionnels (environ 12 de part et d'autre, auxquels se joindront des participants invités selon les sessions), issus tant des milieux académiques que du secteur public et privé, et reflétant aussi bien les points de vue favorables et opposés à l'UEM. Chaque rencontre se déroulera autour d'un ou deux thèmes centraux, tels que : l'emploi ; l'UEM, les partenaires des pays de la zone euro ; la conduite de la politique économique en UEM ; les défis immédiats posés par le démarrage de l'union monétaire. Les organisateurs demanderont à des rapporteurs de préparer un texte qui servira de base informelle à la discussion, mais l'accent sera mis sur le débat et l'échange de points de vue, amorcés par les réactions des discutants qui présenteront un point de vue alternatif et délimiteront les points essentiels du débat. Les actes de chaque session seront publiés sous forme de document de travail.

Jürgen von Hagen  
Jean Pisani-Ferry  
Juillet 1997



## **SUMMARY OF THE PROCEEDINGS**

The fifth Franco-German Forum, which is jointly organised by the ZEI and the CEPIL, was held in Paris, on the 5<sup>th</sup> and 6<sup>th</sup> of July 1999. At the opening dinner, Jean-Michel Charpin, French Planning Commissioner, presented the main conclusions of his recent report on reforming the French pension system, and answered to the questions of German and French economists of the Forum. The discussion the following day was based on two presentations:

- *Reduction of Working Time: Does it Decrease Unemployment?*  
by Axel Börsch-Supan (University of Mannheim, CEPR and NBER).
- *The Eastward Enlargement of the European Union: a New Economy for a United Europe*  
by Antoine-Tristan Mocilnikar (French Planning Agency, Paris).

### **1. REDUCTION OF WORKING TIME (RWT)**

#### **Presentation by Axel Börsch-Supan (University of Mannheim)**

Axel Börsch-Supan presented some figures showing that Germany has reduced working time by 8% since 1980 and by over 20% since 1960. However this did not impede a huge rise in employment and a fall in the employment rate of elder workers. According to Mr Börsch-Supan, only Léon Blum in France succeeded in reducing unemployment after reducing working time in 1936, but this was due to the simultaneous fiscal stimulus.

Then, Mr Börsch-Supan listed a number of necessary conditions for making RWT a success: fixed prices and wages, perfect substitutability between employed and unemployed workers, constant output, preference for leisure, no capital substitution, no fixed costs per worker. He insisted that the impact of RW on employment would crucially depend on the impact on the real wage bill. He then turned to the German experience, which he examined through four types of studies: circumstantial evidence, direct evidence, simulation studies and case studies.

- Circumstantial evidence: Mr Börsch-Supan quoted a panel analysis carried out by Hunt (1996), showing that the 2.5% RWT in Germany between 1985 and 1995 was accompanied by an hourly wage increase of 2-3%. He also quoted estimates made by the German Council of Economic Advisors, which related the 2.5% RWT with a productivity increase of 1.0-1.8%. However he wondered whether these productivity gains could have been achieved without any RWT. Finally, Mr Börsch-Supan referred to opinion polls showing that workers do not wish to work less, especially if they are paid less, and that RWT increases overtime work.
- Direct evidence: according to Mr Börsch-Supan, existing econometric studies do not provide clear evidence that RWT helps to reduce unemployment.
- Simulation studies (with macroeconomic models): Mr Börsch-Supan quotes two simulation studies. The first one was carried out by the DIW. Assuming that productivity increases offset 50% of the RWT, the RWT that took place between 1984 and 1990 increased employment by 2.9%, and GDP by 0.8% in 1990, compared to the baseline. However Mr Börsch-Supan notes that this positive effect was due to the reduction in unit labour costs derived from the productivity assumption and from the moderate increase in hourly wages. The second simulation study quoted by Mr Börsch-Supan was performed by the IAB



(research institute attached to the German labour administration). It concludes that German RWT increased employment but reduced output due to the impact of RWT on prices.

- Case studies: in 1993, Volkswagen reduced working time by 20%. This RWT was accompanied by an increase in hourly wages by only 4% and by a huge productivity increase (10-20%) over three years. Although their net income was cut by 11-12%, workers seem to have been satisfied by this arrangement, but Mr Börsch-Supan suspects moonlighting to have been an important adjustment variable. A contrasting example is that of Ruhrkohle AG where hourly wages were maintained constant despite a 6% RWT, with little satisfaction by the workers and picking overtime working and moonlighting.

Mr Börsch-Supan concluded that the German experience did not provide any convincing evidence that reduced work hours increase employment, neither that it reduces employment.

**Comment by Gilbert Cette** (*French Council of Economic Advisors*)

Mr Cette agreed that the evolution of unit labour costs is the key of the reduction in equilibrium unemployment. In the long run, if the Unit Production Cost (UPC) increases, RWT can destroy employment and increase unemployment, and if UPC decreases, RWT will improve employment and destroy unemployment. In the short and medium term, for Mr Cette, we have to add the positive work sharing effect of RWT on employment.

However, Mr Cette strongly criticised simple cross-section graphs comparing working time to unemployment rates. He showed that the same graph plotted over different periods leads to contradictory results. He came back to Jennifer Hunt's work, showing that the negative effect of RWT on German employment was due to the full compensation of wages: Jennifer Hunt found a negative effect on employment, because of the increase in UPC, and not of the RWT by itself. He commented on the Dutch case, where working time decreased by 15% from 1982 and 1997 (through collective RWT and part time work), while employment grew by 30%. According to Mr Cette, half of this relatively good performance (compared to France) can be attributed to higher growth, and the other half came from a very slow productivity growth through RWT, without any increase in UPC, because of wage moderation. Finally, Mr Cette turned to the French case. He noted that the French RWT currently undertaken provides incentives for higher flexibility with strong wage moderation, in a context of high mark-ups (contrasting with the previous experiment of 1982).

He concluded that RWT is not supposed to be *the* solution against unemployment. In the most optimistic evaluations, the 35 hours are credited of 700 000 employment creations, and of 500 000 less unemployed people (for about 3 millions unemployed people presently). For Mr Cette, growth will be the first way to reduce unemployment.

**Comment by Michael Wiedemeyer** (*Hans-Böckler Foundation*)

Michael Wiedemeyer noted that the RWT observed in Germany was partly due to the development of part-time work, especially for low qualified workers. Simultaneously, overtime, often-unpaid work has been expanding for qualified workers. He then agreed on the fact that scientific research on the impact of RWT on employment is rather thin, but disagreed on Mr Börsch-Supan's conclusion: according to Mr Wiedemeyer, the impact may be positive. He noted that increased productivity should not be redistributed through real wages and through RWT at the same time. He admitted that flexibility can be positively influenced by RWT, but

he noted that such flexibility might offset the benefit from RWT for workers. He insisted that there should not be full compensation, neither a uniform RWT.

### **General discussion**

In his reply, Mr Börsch-Supan's came back to the Dutch case where non-employment has increased due to the reduction in the labour force, and despite reduced unemployment. Another participant added that it is difficult to derive any lesson from such a small, open economy, where negotiations are easier than in Germany or France. Another one noted a contradiction between the Dutch RWT through part time, which braked productivity, and the collective RWT, which is supposed to increase productivity.

All participants agreed on the fact that the impact of RWT on unemployment crucially depends on its effect on unit labour costs and, more specifically, on flexibility. It was argued that annualisation of working time would reduce overtime hours, hence reducing average hourly wages. Indeed, half of French RWT agreements include variations in working time over the year. However, it was suggested that existing figures on the first Aubry law include a selection bias (the firms which actually reduced working time were those where it was easiest). More generally, there was a discussion on whether RWT can be considered an incentive towards more flexibility, and whether more flexibility would actually reduce unemployment. On the first point, it was argued that competition is a tougher incentive than RWT to achieve more flexibility, except in non-traded sectors. On the second point, a German participant highlighted the fact that, due to reduced income and increased flexibility; RWT would raise the participation of women in the labour force, which would be good news for employment and social contributions, but bad news for the unemployment rate. However, another German economist argued that women would be willing to enter the labour force even without RWT.

Several participants highlighted the importance of differentiating working hours across qualifications (which was done in Germany and can be justified by the needs to protect low skilled workers), workers' ages, firm sizes and sectors. More specifically, it was argued that some qualifications may soon be missing in the labour market; that RWT increases work intensity, which creates a problem for elder workers; that workers in small firms are not substitutes, which creates a non-divisibility problem; finally, that some services will hardly find productivity gains.

Cyclical aspects of RWT were also discussed. Some participants argued that excess supply and low interest rates provided favourable conditions for RWT, whereas others were concerned about delays and about the irreversibility of RWT, which prevents using it for cyclical purpose.

Finally, little was said on the fiscal implications of RWT. One participant wondered whether the assumption of a zero sum game was appropriate (i.e. that the social cost of an unemployed is equal to the subsidise given to one job creation through RWT). Others were concerned about social security contributions (shouldn't we increase working time?).

## 2. EU ENLARGEMENT

### **Presentation by Antoine-Tristan Mocilnikar** (*French Planning Agency, Paris*)

Antoine-Tristan Mocilnikar started his presentation through reminding the participants the decisions of the Cologne summit of June 3<sup>rd</sup> and 4<sup>th</sup> 1999, which fixed end-2000 as a deadline for the new Inter-Governmental Conference. He also insisted in the political aspect of enlargement, which was enhanced by the Kosovo war.

After recalling some basic arithmetic of enlargement, Mr Mocilnikar showed that there was no clear relationship in the CEECs between the amount of reforms and the initial fall in GDP, but that afterwards, countries that had reformed most recovered more quickly. He provided a set of graphs showing that economic liberalisation is negatively related to average inflation, and positively linked to political freedom and to average GDP growth. He then quoted a study by Baldwin and others (1997), showing that market integration would have much more impact on CEECs GDP than a simple free-trade association agreement, because only in the former case would country risk be reduced, which would bring capital flows in. In this spirit, developing credible prospects for membership would favour direct investments from now through positive expectation effects. Mr Mocilnikar subsequently used various econometric studies in order to measure the potential impact of institutional change on growth both directly (as a production factor) and indirectly (through capital accumulation derived from foreign direct investment). Using calculations carried out by the French Planning Agency, he evaluates potential growth per capita to be close to 5-6% per annum.

Mr Mocilnikar went on highlighting the risks attached to this scenario, which would entail high current account deficits (and capital inflows). He advocated sound macroeconomic policies, stable economic and judicial environment and a stable exchange rate policy. He ended his speech with fiscal implications of enlargement. According to Mr Mocilnikar, the Common Agriculture Policy (CAP) reform put forward by the Commission, and the non-inclusion of foreign aid to Eastern Europe would make it possible to extend CAP spending to the East. He also supported the 4% of GDP ceiling retained by the Fifteen for structural funds, because of capacity limits of new members to absorb public aid, and also for budgetary and administrative reasons. He found also interesting the 300 euros per capita ceiling suggested by Martin (1998), which would curb net spending once this ceiling is reached

### **Comments by Jacky Fayolle** (*OFCE, Paris*)

In his comment, Jacky Fayolle praised Mr Mocilnikar's paper for its well-documented and precise contribution to the enlargement debate. But he regretted that Mr Mocilnikar had endorsed the official approach of enlargement. He stressed that the EU approach to enlargement is one-sided, and those economic and political liberalisation criteria, which are put at the forefront, are highly correlated with the distance from Brussels. He feared that this method of enlargement would lead the two groups of CEECs to diverge. He said that the governments from all CEECs need international integration in order to achieve structural and democratic reforms.

Turning to the engineering of enlargement, Mr Fayolle denounced the use of ceiling as a structural fund policy. According to him, the efficiency of absorption depends on a set of

factors such as the access to global financial markets, the dynamics of regional imbalances or the policy-mix. Mr Fayolle also denounced the non-access of new members to direct CAP aid as unfair towards countries that are making huge efforts to fulfil the *acquis communautaire*. Besides, more generous structural funds would then be necessary.

Mr Fayolle feared that the plans for the reconstruction of countries involved in the Kosovo war once again would leave Bulgaria and Romania aside. He alluded to the CEPS's proposal for "A system for post-war South East Europe" (which was presented at the end of this Forum). He understood the needs for a strong EU commitment in the Balkans. But he felt unfair that Bulgaria and Romania, who have managed the minorities' problems better than their Balkan neighbours, did, would be considered only after the latter. He advocated including Bulgaria, Romania, Slovakia, Lithuania and Latvia in the same, 2<sup>nd</sup> shot package as Albania and the countries from the former Yugoslavia. He concluded on the needs for strong EU commitment for both the 1<sup>st</sup> and the 2<sup>nd</sup> wave of enlargement.

### **General discussion**

In the discussion, German economists appeared often less optimistic than the French, which seemed related to their own enlargement experiment to East Germany (although there is no reason to anticipate a quick wage increase like in East Germany) and to their exposure to migrations from the CEECs. They stressed the length of the catching up process (46 years for filling half of the income per capita gap between the CEECs and the EU). They also regretted that Mr Mocilnikar's paper mainly dealt with benefits of enlargement, and little with the costs. Political costs were absent from the analysis, whereas enlargement will mechanically lead to a huge increase in complexity for EU decision-making.

Concerning potential benefits from enlargement, several economists from both sides of the Rhine asked for caution concerning trade and growth evaluations included in the paper, due to methodological disagreement or more general scepticism on this kind of exercise where institutional change cannot be treated as exogenous. One participant remarked that East Germany should have attracted huge amounts of direct investments according to this analysis. Another compared the outcome of Spain and Portugal in the one hand, Greece in the other hand.

Finally, the participants stressed the role of the monetary framework on the success of enlargement, and the necessity to design a complete two-tier (single market, monetary union), or maybe three-tier (start with association) integration.

Agnès Bénassy-Quéré  
CEPII



## ***Reduction of working time: does it decrease unemployment?\****

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### **ABSTRACT**

Over and again, the reduction of working time is praised as *the* instrument against unemployment in Europe. While the first round argument appears obvious – less work for some will create more work for others – second round repercussions, such as consequential labour cost increases, put doubt on the validity of the argument. As frequently, empirical evidence would be helpful to shed light on this important debate.

This paper reviews the theoretical arguments and the empirical evidence on the effects of reduced weekly working time on unemployment. Given the prominence in the European popular discussion, the scientific literature is astoundingly thin on the topic.

The main findings can be summarised as follows: There are theoretical arguments that can form the basis for a positive effect on employment in response to a reduction in working time. However, they rest on strong assumptions that appear counterfactual. Econometric studies show little or negative effects on employment in Germany. Only a set of simulation studies predicts a positive employment effect – but again, they appear to rest on counterfactual assumptions. Hence, while the reduction of work hours may have increased workers' utility – a legitimate goal of the unions – it does not appear to be justified as a cure against unemployment.

### **1. INTRODUCTION**

Over and again, the reduction of working time is praised as *the* instrument against unemployment in Europe. It is an old debate with equally old arguments. Franz (1984) quotes the military in 1817, Bismarck in the 1880s, and Lemmer (1930) with a paper that has exactly the same title as this one. Why hasn't this issue been settled?

The issue – as it concerns Germany – came to a climax in the mid 1980s when the labour union in the metal industry enforced a reduction in work hours by wide-spread strikes that ultimately reduced weekly working time from 40 to 35 hours. In fact, working time has been secularly reduced since the industrial revolution. Even since 1960, both contract and effective hours have been reduced dramatically, see Table 1, by almost a quarter. This reduction in annual working hours was accompanied by an equally dramatic reduction in working time over the life span, see Figure 1. While the labour force participation of men aged 60-64 was about 70

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\* Paper presented at the 5<sup>th</sup> meeting of the "Forum Economique Franco-Allemand", Paris, 5-6<sup>th</sup>, July, 1999.

<sup>1</sup> I wish to thank Lothar Essig for his assistance, and Joachim Winter for helpful discussions.

percent in the 1960s, less than a third were employed 30 years later. This trend was shared all over Europe, with the exception of Sweden.

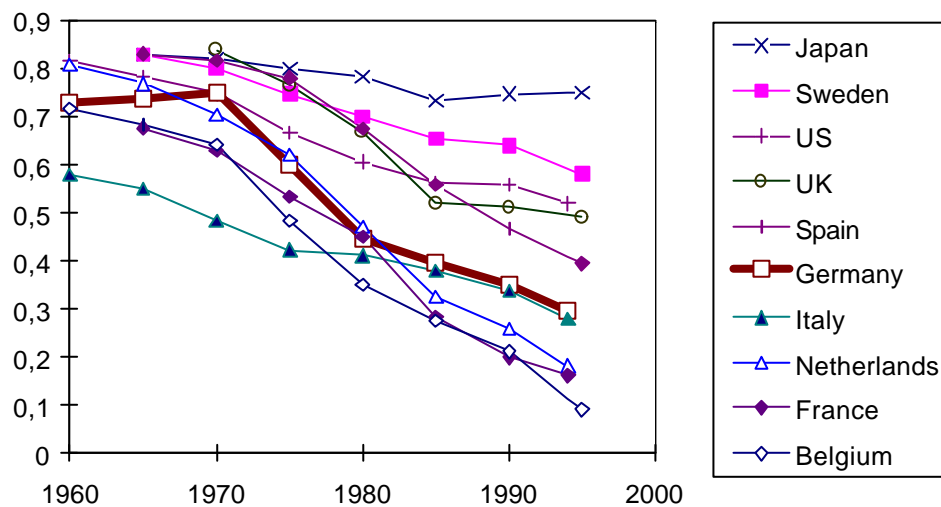
**Table 1: Working Time per Full-Time Employee**

	1960	1970	1974	1980	1984	1990	1994
<b>Weekly hours</b>	44.6	41.5	40.8	40.1	40.0	38.5	37.8
<b>Vacation days p.a.</b>	15.5	21.2	23.7	27.3	29.9	30.7	31.0
<b>Contract hours p.a.</b>	2124	1898	1832	1789	1761	1676	1661
<b>Actual hours p.a.</b>	2101	1930	1829	1751	1729	1649	1621
<b>Overtime (% contract)</b>	4.5	8.3	6.3	4.5	3.7	4.2	3.7
<b>Sick leave (% contract)</b>	5.3	5.7	5.8	6.1	4.8	5.5	5.2

*Notes:* West Germany only.

*Source:* Stille and Zwiener (1997), Tabelle 1/1.

**Figure 1: Old Age Labor Force Participation in Europe, U.S. and Japan, 1960-1995**

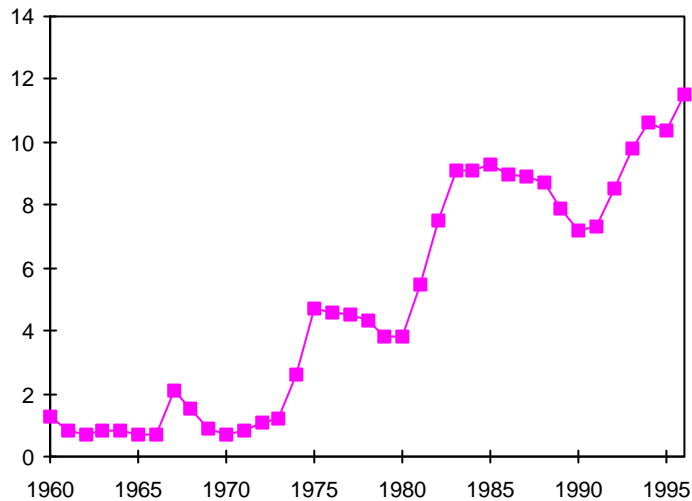


*Note:* Labor force participation rates of men aged 60-64.

*Source:* Gruber and Wise (1999).

It is tempting to correlate these trends with the evolution of the unemployment rate. As Figure 2 shows, the prima facie evidence for a positive effect on employment in response to this dramatic reduction in work hours is not very convincing.

**Figure 2: Unemployment Rate, West Germany, 1960-1995**



Source: Statistisches Jahrbuch für die Bundesrepublik Deutschland

As Figure 2 shows, unemployment has steadily risen, and the business cycle upturn in the mid 1980s has not produced a different pattern in the unemployment rate (quickly rising, slowly falling) than the corresponding upturn in the late 1970s, although the former was accompanied with a reduction in work hours.

The opposite apparent conclusion could be drawn from the Blum experiment in France around the year 1936. His reduction in working hours was accompanied by a strong decline in unemployment. However, Léon Blum also started a large fiscal expansion, which might have overcompensated an actually negative employment effect of the hour's reduction. Thus, more subtle analysis is required to separate causes and effects in both historical examples.

Similarly tempting, the *prima facie* theoretical arguments appear “obvious”. If prices are fixed, workers’ and employers’ behaviour remains unchanged; less work for some must create almost tautologically more work for others.<sup>2</sup> On the other hand, if prices and quantities are flexible, any reduction in work hours that raises unit labor costs must decrease employment. Again, more subtle analysis is required to understand the second round repercussions, such as consequential labor cost increases, price and wage effects, and general equilibrium feedback on product demand.

The issue has not been settled because *prima facie* arguments are so seemingly obvious and politically tempting while the countervailing arguments are substantially more subtle and complicated. Given the prominence in the European popular discussion, the scientific literature is astoundingly thin on the topic. This paper reviews the theoretical arguments and critically evaluates the empirical studies that have been conducted in Germany. The paper concentrates on weekly hour reductions. Other changes in working time are the increase in yearly vacation days, see Table 1, and the prevalence of early retirement, see Figure 1. The latter is discussed in length in Borsch-Supan and Schnabel (1998, 1999).

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<sup>2</sup> Toedter (1988), p.1320.



The main findings can be summarised as follows: There are theoretical arguments that can form the basis for a positive effect on employment in response to a reduction in working time. However, they rest on strong assumptions that appear counterfactual. The econometric studies show little or negative effects on employment in Germany. Only a set of simulation studies predicts a positive employment effect – but again, they appear to rest on counterfactual assumptions.

The reduction of working time has provided German workers with more leisure during, and a longer retirement after, working life. There are also no signs that German workers have suffered from income losses due to reduced work hours, *given output*. This is an important social achievement and has made life much more pleasant for the workers. However, there is little evidence that a reduction in working time has reduced unemployment, while there is some evidence that it has reduced output and thus macroeconomic growth. We have no reasons to believe that the underlying assumptions will change in a way that will make these conclusions less relevant in the future.

The remainder of the paper is structured as follows. In the following section, I set out the theoretical background of the debate in order to isolate the main mechanisms that might create (or inhibit) positive employment effects in response to an hours reduction. The next four sections collect circumstantial evidence on these mechanisms: evidence on wages, productivity, desired hours, and macroeconomic feedbacks. Section 7 continues with a review of the direct evidence of employment effects. In addition to the econometric evidence, Section 8 summarises the results and mechanisms of two major simulation models, and Section 9 reports on the famous VW experiment. Section 10 concludes.

## 2. THE THEORETICAL BACKGROUND OF THE DEBATE

While the often-voiced first-round theoretical argument – less work for some must create more work for others – appears “obvious” in favour of a positive employment effect; it has several major flaws.<sup>3</sup> First, the amount of labour is not given as a fixed lump, which can only be redistributed. The total amount of labour demanded and supplied changes as the economy evolves, and a reduction of working time may affect this total amount of labour. Thus, partial analysis of the labour market needs to be supplemented by a general equilibrium analysis of total demand in the economy. This leads to the second flaw in the argument: Labour can be substituted by capital, and the demand for labour depends on the relative price of capital and labour. If labour costs change in the wake of an hour's reduction, labour demand will also change. Thus, we need to study how unit labour costs evolve after an hour's reduction, which requires an analysis of wage and productivity adjustments. The third fundamental flaw in the argument suggests that labour is homogenous, and that the currently unemployed are good substitutes for labour which has been “freed” by the reduction of working hours. Thus, a supplemental analysis of the qualification structure of the work force is required.

Furthermore, the semantics of the debate obscure an important distinction among working time (measured in hours), employment (measured in persons employed hours), and the product of the two, the total quantity of labour demanded (measured in man hours, or politically more correct, in person hours). Franz (1984) and Toedter (1988) carefully distinguish these variables. Taking hours (*h*) and persons (*n*) as separate production factors

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<sup>3</sup> See Franz (1984).

besides capital, and ignoring capital-labour-substitution, a reduction in hours ( $dh/h < 0$ ) will create the following response in the demand for workers ( $dn/n$ ):

$$(1) \quad dn/n = h_n [ dw/w - dp/p + (1-a_h) dh/h ]$$

which depends on the wage response ( $dw/w$ ), the price response ( $dp/p$ ), and several demand and production parameters. Hours supply is treated as passive: it accommodates demand.

In the best of the Keynesian worlds, wages and prices are sticky. In this case, an hour's reduction leads to a proportional increase in employment,<sup>4</sup> and total worker-hours remain constant. This result appears to underlie arguments that are often voiced by trade unions.

However, if prices and wages respond to the hours change, results are more complicated. In this case, we need to look at the demand and production parameters more carefully. Among those,  $g$  will denote the demand elasticity of the product ( $dy/y$  divided by  $dp/p$ ),  $h_h$  and  $h_n$  denote the elasticities of the employers' demand for hours and workers with respect to the wage ( $dn/n$  and  $dh/h$ , respectively, divided by  $dw/w$ ), while  $a_h$  and  $a_n$  denote the scale elasticity's of hours and workers in production ( $dy/y$  divided by  $dh/h$  and  $dn/n$ , respectively). Using these parameters, equation (1) becomes

$$(2) \quad dn/n = [ h_n \times (h_n \times a_n + g) ] \times [ (1 + 1/h_h) - a_h (1 + 1/g) ] \times dh/h$$

If the hours reduction is fully compensated by a corresponding increase in wages ( $h_h = -1$ ) and prices fully adjust to a quantity reduction in output ( $g = -1$ ), the hours reduction has no effect on employment at all. In this case, total worker-hours and output decrease. Workers wage bill remains constant, and their utility may increase or decrease, depending on whether they appreciate the added leisure. The same holds, if  $a_h = 0$ , i.e., if the organisation of labour by working hours makes no difference in the production process.

We now have shown that an hour's reduction can have a positive and a neutral effect on employment. However, it can have a negative effect as well. If the organisation of labour by working hours matters in the production process ( $a_h > 0$ ), the product is moderately price elastic ( $0 < -g < 1$ ), and the hours reduction is fully compensated by a corresponding increase in wages ( $h_h = -1$ ), then not only output and worker-hours but also employment will fall in response to an hours change. Moreover, real wages will fall because prices will rise. In this third case, the policy will be counteracting its purposes.

The theoretical analysis of labor demand therefore provides three important insights:

**First**, depending on parameter assumption such as wage and price responses, hours reduction can lower, keep neutral, or increase employment. All sides of the debate can be accommodated. As a rule, positive employment effects are the more likely, the less workers, employers and customers can respond to the hours change. If in turn workers shift into overtime, employers substitute labour by capital, and customers demand less of a more expensive product, the employment effect will be negative (Toedter, 1988).

**Second**, employment will unambiguously decrease in response to an hour's reduction if the real wage bill is to remain constant. This is an important result which contradicts some

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<sup>4</sup> The factor proportionality is  $\eta_n \cdot (1 - a_h) < 0$ .

arguments in the public debate. It is strengthened by general equilibrium effects, see Franz (1984) and Toedter (1988).<sup>5</sup>

*Third*, the analysis provides us with a checklist of items that helps to clarify where the fault lines are in the public debate. Although the items are highly interrelated, it will also structure our review of the empirical analysis in Germany, which follows in the next section.

**Box 1: Check list for empirical analysis**

- ◆ **Are hourly wages fixed?**
  - Will the hours reduction is combined with an increase in the hourly wages in order to keep the nominal wage bill constant (full compensation)?
  - Will wages respond to productivity changes?
  
- ◆ **Will productivity change?**
  - Change in capital intensity?
  - Better work organisation/more labour flexibility?
  - Better work conditions, lowering quit rates and exhaustion?
  
- ◆ **Is the capital stock exogenously fixed?**
  - Will labour be substituted by capital? (Short run vs. long run)
  
- ◆ **Is effective working time exogenous?**
  - What is current labour-leisure trade-off? Is workers constraint by current hours, will they be constraint by lower hours? Will the hours change precipitate more over-time and/or black-market activities?
  - Are employers at their optimal allocation between labour hours and capital utilisation?
  
- ◆ **Are prices fixed?**
  - Can employers shift higher labour costs to consumers?
  - Will lower/higher prices increase/decrease product demand?
  
- ◆ **Is output fixed?**
  - Partial against equilibrium analysis: Will output via the transmission channels (real wages and prices) be reduced or increased?

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<sup>5</sup> Some argue that this proposition is weakened if the hours reduction precipitates a productivity increase over and above the one implied by a fixed production technology, for instance by fostering a higher degree of labour flexibility. While this is correct, higher flexibility could be achieved without an hours reduction. This line of reasoning therefore confounds two distinct labour market policies. In this paper, we want to concentrate on the effect of an hours reduction per se.

### **3. EVIDENCE ON HOURLY WAGES**

A first item in our list of circumstantial evidence is whether hourly wages respond to a change in weekly work hours. This is at first sight a purely contractual matter as a reduction in work hours can be negotiated with or without full compensation of the contractual monthly pay. However, even if there were no changes in hourly *contract* wages, there are several reasons why an increase in *effective* labour costs is likely in response to a shorter workweek. First, a reduction in contract hours may increase the demand for, and the supply, of overtime, which is commonly remunerated at higher hourly wages. Section 5 will show that there is no homogenous answer to this question. A majority of the workers, however, does not want to decrease hours and is therefore likely to supply overtime. Second, there are typically fixed cost of labour that is independent of hours worked. A prominent example are training costs, another the start-up time required to obtain the usual routine (Dichmann, 1996). McKinsey (1994) estimates these costs at 10% of total labour costs, not counting management and similar overhead. Third, a reduction in hours may lead to investment in capital (such as automated teller machines in the banking industry) and thus raises total production costs. Moreover, it raises productivity and thereby, potentially with a lag, wages, see below. Of course, all effects are amplified if the reduction in work hours is negotiated with a full compensation of the former total salary.

Because of the multitude of mechanisms, an assessment whether hourly wages respond to a reduction in hours requires an econometric study. Hunt (1996) provides an extended empirical analysis of wage changes between 1985 and 1995, using the German Socio-Economic Panel (GSOEP). Her careful econometric study differentiates between industries that mandated hour's reductions and those, which did not. This is important since national time-series studies will not be able to isolate the effects of hour's reductions from other concomitant changes.<sup>6</sup> She finds that a one-hour reduction in contractual working time was accompanied by an hourly wage increase of 2-3 percent, relative to industries with unchanged hours. Since a one-hour fall from a 40-hours week corresponds to a 2.5% decrease, this implies close to full compensation. Thus, the assumption of unchanged hourly wages, an important ingredient to generate positive total employment effects, appears counterfactual.<sup>7</sup>

### **4. EVIDENCE ON PRODUCTIVITY CHANGES AND CAPITAL UTILIZATION**

An increase in hourly wages may be accompanied by an increase in productivity. First, hours might, just as workers, scale effects in production. Reducing hours may thus increase productivity. In addition, there may be secondary effects due to better work organisation or less exhaustion, e.g., because workers are better rested, an important argument in the 19<sup>th</sup> century literature on hour's reduction. If productivity rises due to lower work hours, the increase in unit labour costs due to rising effective hourly wages is dampened, and the effect of an hour's reduction on *unit* labour costs may become ambiguous.

Indeed, here is a handle for positive total employment effects (measured in worker-hours) if productivity increases more than proportionally to the hours reduction. In this case, unit labour costs decline, labour demand increases, and unemployment could be reduced if the unemployment pool provides the qualifications needed. Thus, an engine for positive employment effects can be hidden in production inefficiencies due to overly long work hours or other bad practices in work organisation. Interestingly, McKinsey (1994) provides a long

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<sup>6</sup> Such confounding effects are the wage freeze in France in the early 1980s.

<sup>7</sup> Note that constant real wages are neither necessary nor sufficient for positive employment effects.

list of such examples and claims that productivity could be raised by between 10 and 30 percent even if daily work hours are reduced from 8 to 6 hours. The main instrument to achieve this productivity gain is flexible shift time that permits an optimal utilisation of capital.

There are two problems with this argument. First, many of the effects could be achieved without an hour's reduction. This line of reasoning therefore confounds two distinct labour market policies. In this paper, we want to concentrate on the effect of an hour's reduction per se. The second problem is that this well of productivity has not been tapped into. Why? It appears that flexible shift work does not appear to be liked among workers, see Section 5.

Unfortunately, there are no recent econometric studies that link labour productivity to hour's reduction. The German Council of Economic Advisors (1983) presents estimates that relate a 2.5% decrease in hours with a productivity increase of 1.0-1.8%. It appears unlikely that genuine productivity changes can be the *deus ex machina* that creates higher demand for labor when hours are reduced.

## 5. EVIDENCE ON DESIRED WORK HOURS

Any effect on employment (i.e., workers) will be mitigated when reduction in standard work hours are compensated by an increase in overtime supplied by the existing workers. This is an area where we actually have considerable empirical evidence. DIW (1997) and Hunt (1998) evaluate the GSOEP data and arrive at similar conclusions as a series of polls conducted by the German employers' association (EMNID, 1997), see Tables 2 and 3.

**Table 2: Desired hours by actual hours, 1985 and 1994**

Actual hours worked	Percentage desiring .... weekly hours:				
	Year	More	Same	Less	Sample size
Less than 40	1985	64.2	14.1	21.8	187
	1994	28.8	39.0	32.2	517
Exactly 40	1985	6.0	69.7	24.3	749
	1994	3.7	55.5	40.9	227
More than 40	1985	7.4	6.1	86.5	428
	1994	6.2	8.2	85.6	200

Source: Hunt (1998) using data from the German Socio-Economic Panel (GSOEP).

**Table 3: Desired Hours, 1997**

<b>Desired weekly work hours</b>	<b>All</b>	<b>West</b>	<b>East</b>	<b>Men</b>	<b>Women</b>	<b>Union members</b>
<b>Less than 10</b>	7.3	7.8	5.3	5.8	8.9	4.3
<b>10 – 25</b>	9.5	10.8	4.6	2.5	17.2	4.6
<b>25 – 35</b>	16.5	17.2	14.0	8.5	25.4	14.1
<b>35 – 38</b>	17.0	18.1	13.0	19.5	14.2	24.1
<b>38 – 40</b>	13.7	13.9	13.0	13.1	14.4	17.8
<b>40 – 45</b>	25.5	22.8	35.7	34.6	15.6	24.8
<b>45 – 50</b>	3.7	2.7	7.3	5.7	1.5	3.6
<b>More than 50</b>	6.8	6.8	7.0	10.4	2.8	6.7

*Source:* EMNID poll with a sample of 1.074 workers, July 1997, for the Institut der deutschen Wirtschaft.

Both GSOEP and EMNID asked about desired hours under the (counterfactual) assumption of no wage compensation (“if total pay is adjusted accordingly”). Under this presumption, workers appear to have a rather strong consensus on a 40-hour week. Workers with fewer hours want to work more while workers with more hours want to work less.

Responses of intend to polls and survey questions are notoriously unstable. Small changes in the wording, in particular concerning the compensation agreements accompanying the hour's reduction, can change responses due to framing effects. Thus, the agreement between the sources is remarkable. Nevertheless, ex post data may be a more reliable indication of workers' preferences than ex ante statements of intends. Thus, it is interesting to combine the responses in Tables 2 and 3 with experiences that workers have actually made with hours reductions, see Table 4.

**Table 4: Personal Experiences with Reductions in Weekly Hours**

	<b>Percent of workers who experienced ...</b>		
	<b>More strain</b>	<b>More overtime</b>	<b>New hirings</b>
<b>All</b>	52.9	52.6	13.0
<b>West</b>	56.3	54.8	12.4
<b>East</b>	35.0	40.9	15.8
<b>Men</b>	56.2	52.5	14.4
<b>Women</b>	47.6	52.6	10.7
<b>Union members</b>	63.5	54.5	13.1

*Source:* EMNID poll with a sample of 1.074 workers, July 1997, for the Institut der deutschen Wirtschaft.

52.6% of the workers say that they experienced an increase in overtime in their company as a response to an hours reduction (EMNID, 1997). This is in line with estimates by Hunt (1996) who reports that actual hours responded less than one-to-one to contract hours. On an aggregate level, second jobs have increased from 1987, when 2.6% of workers moonlighted, to 3.7% in 1994. Overtime as a percentage of total actual working time responds closely to the business cycle and does not show a secular trend. Correcting for cyclicity, König and Pohlmeier (1988) show that overtime responds much stronger to an hours reduction than actual hours. The coefficient is compatible with Hunt's less than one-to-one relation between actual and contract hours.

A recent study by the research institute of the German labour unions reports similar findings. While workers appreciate the leisure brought about by a forced reduction in work hours, most also complain about initially lower incomes (Herrmann et al., 1999, p.75). Polls accompanying the VW experiment in Wolfsburg, described in Section 9, produce identical results (Klenner et al., 1996, p.120).

Summing up, an hours reduction at constant hourly wages is likely to create significant effort by the workers to compensate the loss of income at least partially by taking overtime and/or moonlighting. There is anecdotal evidence that this happened in Wolfsburg to a large extent when VW reduced quite dramatically reduced the workweek to 28.8 hours. We will come back to this issue in Section 9.

## 6. EVIDENCE ON PRICES AND OUTPUT

Turning to general equilibrium issues, an important consideration is product prices because they affect product demand, which in turn determines labour demand. This is the last of the items in our list of circumstantial evidence, and the item we know least of.

First, the ability to shift increased labour costs in the form of higher prices is a consideration frequently quoted in the literature. Even if unit labour costs rise, demand for labour may increase in the wake of an hour's reduction if product prices can be raised to an extent that increases total revenues. Obviously, this requires rather low price elasticities. Empirical evidence provides a heterogeneous picture by type of commodity. Almost all price elasticity's are between 0 and -1, and most are close to -0.5.<sup>8</sup> In addition, this consideration is on shaky theoretical grounds, as it requires market power vis-à-vis (international) competition with longer working hours. However, a monopoly would not produce at a point featuring such a low elasticity.

Second, and on the other hand, Keynesian models rest on the assumption that prices are sticky. This assumption is an important ingredient in order to stop feedback mechanisms due to hours reductions. The microeconomic evidence on short-term price adjustments is still in its infancy. Blinder (1994) and Kashyap (1995) are seminal studies. They agree that price changes are infrequent, irregular, and that intervals between price changes in consumer goods are about one year. Köhler (1996) investigates price adjustments in Germany and finds similar lags. This implies, in turn, that prices will adjust to changes in the economic environment – for instance reduced work hours – by about one year.

<sup>8</sup> In the UK, the major consumption groups and their own price elasticities were: food (-0.51), clothing (-0.38), housing (-0.39), utilities (-0.67), transportation (-0.47), and out-of-pocket medical care (-0.67) (Blanciforti, Green and King (1986)).

Price changes provide an important general equilibrium mechanism that will reduce output in response to an hours reduction, in addition to any straightforward reductions in output due to lower labour input measured in worker-hours. We do not have good econometric evidence on the output reaction to the hours reduction. The gap in GDP per capita between Germany and the U.S. widened in the early and mid 1980s, but narrowed in the late 1980s. However, such aggregate evidence is hardly indicative of cause and effect.

## **7. EVIDENCE ON EMPLOYMENT**

Collecting the results of sections 3 through 7, there is little encouragement to believe that employment will increase in response to an hours reduction. Hourly wages have increased rather than remained constant. Productivity has adjusted less than one-by-one until the mid 1990s, increasing unit labour costs even more.<sup>9</sup> Although those, who work a lot, would like to, decrease their work hours, there is little evidence that workers are constrained to work at hours that are substantially lower than the current hours. Finally, absolute price elasticities are larger than zero in most industries, alleviating a feedback to labour demand via a decrease in product demand, at least after a while of about a year.

In addition to the circumstantial evidence that these transmission mechanisms render a positive effect of an hours reduction on employment quite unlikely, there is also direct econometric evidence of that an hours reduction will have no effect, or even a negative effect, on employment.

In a series of articles, König and Pohlmeier (1988, 1989, and 1992 together with Entorf) develop an econometric framework and estimate production functions in which labour enters separately as hours and workers, with a non-linear relation between the two. These estimates can be used to compute the elasticities involved in equation (2), and therefore also to predict the employment reaction to an hours reduction.

Their main result is that there is very little substitution between hours and workers, much less than between labour and capital. “A reduction in standard working hours will result in a [small]<sup>10</sup> decrease in the number of employees but an increase in overtime work and induce substitution in favour of capital” (König and Pohlmeier, 1989, p.569). These results were based on industry data 1964 to 1983. König, Pohlmeier and Entorf (1992) use a longer sample period (1962-1986) to arrive at the same conclusions: A reduction of standard hours worked by 6.25% (from 40 to 37.5 hours per week) leads to a very small *reduction* in total employment of 0.2%.

Kraft (1993) uses a different econometric approach. He essentially uses a reduced form to regress employment on contract working hours, lagged values and a number of other covariates that correct for business cycle effects. His findings indicate a small negative, but insignificant effect of an hours reduction on employment. His conclusion is, that “it is appropriate to consider the effect of an employment reduction on employment as neutral, as long as the hourly wage stays constant” (Kraft, 1993, p.24).

Hunt (1998) is the only econometric study based on micro data. Using desegregate data permits the correction of many confounding effects (such as changes in the composition of

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<sup>9</sup> It appears that unit labor costs have fallen after the mid 1990s. Since the measurement of unit labour costs is difficult, the jury is still out.

<sup>10</sup> Added by the author.



the work force) as well as individual heterogeneity (such as differences in qualification). She arrives at a similar conclusions as the other econometric studies and finds that her “results suggest that reductions in standard hours were associated with employment declines, although the magnitudes of these decreases are imprecisely estimated” (Hunt, 1998, p.356).

The agreement among these studies is remarkable because the samples are so different. While König et al. (1988, 1989) and Kraft (1993) use industry data before the mid 1980s, Hunt’s study relies on micro data and spans the actual “natural experiment” during the second half of the 1980s when work hours were significantly reduced.

## 8. SIMULATION STUDIES

Simulation with a structural macroeconomic model is another methodology to predict the effect of an hours reduction on unemployment. Such simulation studies are hard to compare to actual ex post analyses because their calibrated parameters do not rest on an internally consistent data set. Thus, it is rather difficult to isolate specific model features that are built in to produce certain results. Nevertheless, such models attempt to reproduce general equilibrium effects and are powerful instruments if the underlying behavioural assumptions are correct. The methodology is to estimate a set of equations on actual data (in this case, spanning the end 1980s reduction in working hours), and then create a counterfactual (in this case, how employment, wages, and the entire set of macroeconomic aggregates would have behaved if working hours had stayed constant).

In this section, we report on two simulation studies, which have received widespread attention in Germany. The first study was conducted by DIW, the German Institute for Economic Research in Berlin, the other by IAB, the research institute attached to the German Labour Administration. We will present the main results and then look at the internal and external plausibility of the involved mechanisms.

Stille and Zwiener (1996) present an application of the DIW-macroeconomic model to the hours reduction that took place between 1984 and 1990. The DIW model is a Keynesian business cycle model with limited contemporaneous adjustments of prices and wages to exogenous shocks. The original DIW model was adapted to accommodate exogenous changes in the standard working time. Additional equations – relating wages and employment to standard working time – were estimated on the basis of quarterly national accounting data (Stille and Zwiener, p.148). Note that using nation-wide aggregate data is problematic insofar as changes in working time were industry specific. Thus, aggregate data may not properly identify the effects of changes in the standard working time on wages and employment.

As in any simulation model, the predictions rest on a set of strategic assumptions. In this case, productivity increases are assumed to offset 50% of the reduced standard working hours. The relation between hourly wages and standard working hours (full versus no compensation) results from the regression equation mentioned above. Since all other structural changes between hours and wages in the 1980s affect this equation as well, but are left out in this equation, corresponding biases are carried forward in the simulation.

Table 5 summarises the main results. All figures represent deviations between the actual reduction of working hours 1985 to 1990 from a counterfactual that left the 1984 standard working hours constant. The simulation predicts a relative employment increase of 2.9% over these 6 years. This corresponds to 700.000 workers. This is enormous number that flatly

contradicts the neutral effects measured by the econometric analysis reviewed in the previous section. At the same time, GDP increases relative to the path of the economy that would have prevailed if hours had remained constant.

**Table 5: DIW Simulation Results (Percentage differences relative to baseline)**

	1985	1986	1987	1988	1989	1990
<b>Weekly work hours</b>	-0.8	-1.6	-2.5	-2.9	-3.7	-5.8
<b>Induced productivity</b>	+0.4	+0.8	+1.3	+1.5	+1.9	+2.9
<b>Employment</b>	0.4	0.9	1.5	1.7	2.0	2.9
<b>Real GDP</b>	0.1	0.1	0.3	0.5	0.6	0.8
<b>GDP Price level</b>	-0.0	-0.2	-0.4	-0.7	-1.0	-1.3
<b>Contract wages</b>	0.0	0.0	0.1	0.5	0.8	1.2
<b>Unit labor costs</b>	-0.1	-0.4	-0.6	-0.7	-0.9	-1.2

*Source:* Stille and Zwiener (1997), Table 5/2.

How do these predictions come about? It helps to look at the other aggregates predicted by the DIW model. The main point is that productivity increases by 2.9% by assumption (50% of the hours decline) while hourly wages increase by only 1.2%. Thus, unit labour costs decrease by 1.2%, making labour cheaper than without the hours reduction. Cheaper labour increases labour demand and create the rising employment. At the same time, prices fall and increase product demand, thus GDP, the latter by 0.8% relative to the baseline scenario.

Results for a smaller and larger productivity increase (offsetting 25% and 75% of reduced working hours) are as expected: smaller productivity increases dampen, while higher ones amplify, these effects. Main point is that in all model variants productivity effects are not translated into corresponding hourly wage increases. The main engine for the increase in employment is therefore lower unit labour costs.

Are these predictions credible? Actual data shows that with the exception of 1988, unit labour costs have risen by about 2% on average between 1985 and 1990. Using the DIW estimates, unit labour costs would have risen by 2.2% on average if work hours had stayed constant. These are small differences, and there is no reason to believe that these numbers are implausible. However, this is not the case with some of the strategic links in the model. Remember that we found in Section 3 that the hours reduction in the 1980s were about fully compensated by wage increases (Hunt, 1996). This is not the case in the DIW results. To the contrary, real contract wages fall<sup>11</sup>. This is particular astounding as productivity is assumed to increase substantially vis-à-vis the baseline scenario. The implausible decoupling of wages from productivity appears to be a major reason for the difference between the simulation exercise to the ex post econometric studies summarised in the previous section.

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<sup>11</sup> Nominal contract wages (Table 5) minus CPI which falls slightly more than the GDP deflator reported in Table 5.

A second large-scale simulation exercise was performed by the IAB and is reported in Klauder, Schnur and Zika (1996), summarised in Barth and Zika (1996). IAB modifies the SYSIFO model originally designed by Westphal (1988). The SYSIFO model is another Keynesian-type macro model, featuring complicated lag structures, which emphasise dynamic adaptations to exogenous shocks. The IAB model exchanges the role of productivity and wage reactions. While in the DIW model productivity reactions are set and wage reactions to standard hours estimated, the IAB model estimates how productivity correlates with working time and exogenously sets how wages are adjusted when hours are reduced.

Table 6 summarises the main results. It reports differences in growth rates between the baseline scenario (only very slightly reduced work hours between 1996 and 2005) and an assumed reduction from 37.5 to 34 weekly hours. Employment changes are reported as absolute change (in million workers).

**Table 6: IAB Simulation Results (Percentage growth differences relative to baseline)**

	<b>1996/2000</b>	<b>2000/2005</b>	<b>1996/2005</b>
<b>Weekly work hours</b>	-1.1	-0.3	-0.6
<b>Employment*</b>	0.7	-0.1	0.3
<b>Real GDP</b>	-0.1	-0.2	-0.2
<b>Labor productivity</b>	0.3	0.2	0.2
<b>Contract wages</b>	0.5	0.9	0.7
<b>Unit labor costs</b>	0.1	0.7	0.4
<b>GDP Inflation</b>	0.2	0.5	0.3
<b>Disposable income</b>	-0.2	-0.4	-0.3

Source: Klauder, Schnur and Zika (1996), p.14, Table 2, Column 1.6.

Note: \* Absolute difference

While the first round employment effect appears to be astoundingly close to the DIW result, the simulation in fact rests on very different mechanisms. Table 6 shows that the IAB simulation represents a tough medicine. Real GDP falls, and even more so disposable income. Inflation increases, and productivity gains are modest. As Barth and Zika (1996) summarise, the “gain in employment is paid for with welfare losses” (Barth and Zika, 1996, p.179). This is in stark contrast to the DIW simulation in which prices fall and GDP increases. While the DIW-model’s engine of growth in employment is a productivity increase that is not absorbed by corresponding increases in the real wage, the IAB-model’s engine of employment growth are higher product prices that depress output more than labour demand.

Whether the gloomy picture painted by the IAB is more credible than the DIW model is unclear. GDP per capita relative to the U.S. has stagnated but it has increased relative to most other EU countries. Inflation has remained low. Thus, many of the predicted effects appear counterfactual.

There are other important reasons to be sceptical about predictions made by aggregate simulation models. Most importantly, neither the DIW nor the IAB model has labour markets

that are desegregated by qualification. Labour is assumed to be homogenous, and the unemployed can substitute for any of the reduced hours, disregarding differences in qualification and work experience. This is different from the econometric analyses. While these studies do not explicitly model mismatches in qualification, they indirectly capture such effects because they are based on micro data that corrects for individual qualification heterogeneity (Hunt, 1996) or on industry data (König and Pohlmeier, 1989; Entorf, König and Pohlmeier, 1992; Kraft, 1993) which at least capture inter-industry differences in qualification.

### 9. THE VOLKSWAGEN AND RUHRKOHLER EXPERIMENTS

The cleanest way to find out about the effects of policy changes on the economy is when large-scale experiments take place, which are precipitated by exogenous changes in policy. In many respects, the decision by Volkswagen to decrease working hours from 36 to 28.8 hours per week was such an experiment. VW had a fairly strict agreement with its workers when it entered a period of a swift demand decline when the unification boom ended in 1993. Demand declined by about 20%. Firing was as expensive as was short-time because VW had agreed to very high severance payments and to labour contracts that forced VW to keep paying up to 90% of the wage bill in case of short time (Stille and Zwiener, 1997). In many respects, VW had no choice but to reduce work hours in response to the (exogenous) decrease in demand.

The reduction in working hours of 20% was accompanied by only a 4% increase in hourly wages, resulting in a gross income loss of 16%, and a somewhat smaller net income loss due to the progressive German tax schedule (11-12% according to Stille and Zwiener, 1997). In turn, VW promised a moratorium on firings until 1997. Details of the VW-Plan can be found in Hartz (1994). Unfortunately, there is no comprehensive study yet on the overall effects of this experiment on the Wolfsburg economy. VW company reported a massive productivity increase by 10-20% in the three years between 1992 and 1995. There were no new hiring – but also no firings in spite of the drop in demand. Promberger et al. (1996) present a comprehensive report on workers' view of the VW experiment, see Table 7.

**Table 7: Workers' Satisfaction with the VW Experiment (Percentages)**

<b>General satisfaction with 28.8 hour week</b>	<b>(Very) Satisfied</b>	<b>Indifferent</b>	<b>(Very) dissatisfied</b>
	49	35	16
<b>Actual change in household income</b>	<b>Increase</b>	<b>Same</b>	<b>Decrease</b>
	2	12	87
<b>Coping with income decrease</b>	<b>(Very) hard</b>	<b>So so</b>	<b>(Very) easy</b>
	43	51	6
<b>Reasons for income stability or increase</b>	<b>Other HH member</b>	<b>Overtime</b>	<b>Other Sources</b>
	40	45	32
<b>Desired changes in employment contract</b>	<b>More pay/more hours</b>	<b>Leave as is</b>	<b>Less pay/less hours</b>
	46	53	1

*Source:* Assembled from Promberger et al. (1996).

The picture is an ambivalent one. On the one hand, almost half of the workers are satisfied or very satisfied with the experiment. The other half is indifferent or against it. On other hand, 87% report an income increase, and 43% state that they have problems in coping with this

income decrease. Asked whether they would prefer changing the deal, a slight majority (53%) wants to leave the VW employment contract as it is. However, 46% prefer changing the contract to either more hours or more pay.

It is interesting how those workers coped who kept or even increased their total income. Overtime was frequent, as was additional work by other household members. Unfortunately, the survey missed it to ask about moonlighting. As mentioned before, there is ample but anecdotal evidence that moonlighting increased, and that overall demand for goods and services declined in the Wolfsburg region. Further work has to look at the entire regional economy, not only at VW.

The VW experiment has really not found emulators. The union-associated institute for economic research (WSI) blames this on the negative impact on take-home pay (Klenner et al., 1996, p.120). It appears that the VW experiment was born because of the special circumstances – mainly the specific labour contracts with their expensive social plans and short-time regulations – of the VW company. The closest other experiment is that of the Ruhrkohle AG, a large mining conglomerate in the Ruhr area. This company reduced working hours by introducing additional free shifts, i.e., annual working time rather than weekly working time. The reduction was much smaller than at VW, about 6%. However, pay losses were strictly proportional keeping hourly wages constant. Promberger et al. (1996) compare some of the workers' sentiments with that of the VW workers, see Table 8.

**Table 8: Workers' Satisfaction with the Ruhrkohle AG Experiment (Percentages)**

<b>General satisfaction with reduction in annual work time</b>	<b>(Very) Satisfied</b> 35	<b>Indifferent</b> 43	<b>(Very) dissatisfied</b> 22
<b>Actual change in household income</b>	<b>Increase</b> 7	<b>Same</b> 28	<b>Decrease</b> 66
<b>Coping with income decrease</b>	<b>(Very) hard</b> 53	<b>So so</b> 40	<b>(Very) easy</b> 8
<b>Reasons for income stability or increase</b>	<b>Other HH member</b> 36	<b>Overtime</b> 60	<b>Moonlighting</b> 28
<b>Desired changes in employment contract</b>	<b>More pay/more hours</b> 60	<b>Leave as is</b> 38	<b>Less pay/less hours</b> 2

Source: Assembled from Promberger et al. (1996).

Although the pay cut was lower than at VW, 53% rather than 43% found the loss in income hard to bear, and only 38% rather than 53% wanted to keep the deal as is, while 60% asked for either more pay or more hours rather than 46% in Wolfsburg. Most interesting are the mechanisms to offset the income losses: Almost a third of the workers started moonlighting, and 60% worked on overtime.

In summary, workers appreciate the additional leisure but frown about the lost income. The supply of overtime and moonlighting work indicated in the surveys sheds considerable doubt

on the hypothesis that the workers optimal labour-leisure trade-off is on such low working hours as they were targeted in the VW and the Ruhrkohle experiments.

## **10. CONCLUSIONS**

This review paper collected the theoretical arguments and the empirical evidence on the effects of reduced working time on employment in Germany.

As often with such a complex matter, theory yields a wide variety of predictions, depending on the structure of the economy. As a rule, positive employment effects are the more likely, the less workers, employers and customers can respond to the hours change. If in turn workers shift into overtime, employers substitute labour by capital, and customers demand less of a more expensive product, the employment effect will be negative.

In spite of the ambiguity, theory helps to structure the problem and to isolate the main transmission mechanisms. Collecting the evidence on the main links, it appears that those assumptions that would give rise to positive employment effects are counterfactual. Hourly wages have increased rather than remained constant. Productivity has adjusted less than one-by-one until the mid 1990s, increasing unit labour costs even more.<sup>12</sup> Although those who work a lot would like to decrease their work hours, there is little evidence that workers are constraint to work at hours that are substantially lower than the current hours. Finally, absolute price elasticities are larger than zero in most industries, alleviating a feedback to labour demand via a decrease in product demand.

We then resorted to direct evidence. None of the few existing econometric studies could find a significant effect over various time periods and different degrees of aggregation. All studies use inter-industry differences in working hours as identifying instruments. The econometric evidence rather unambiguously rejects the idea that reducing work hours will help decrease the unemployment problem.

Only two simulation studies predict a positive employment effect. One uses a unit labour cost decrease as an engine to create employment (productivity increases faster than hourly wages), the other pays a high price for employment increases in the form of a GDP decline and an inflation increase. Both models rest on counterfactual mechanisms in detail.

In summary – and this may come as a surprise given the subtlety of the issue, once the arena of prima facie arguments has been left behind – this old debate with equally old arguments has quite an unambiguous answer: the German experience provides no convincing evidence that reduced work hours will increase employment. Reduced work hours probably have increased workers' utility by providing them with more leisure at only slightly reduced income. This is not a small achievement which labour unions can be proud of. But there is simply no evidence that it can work as an instrument for the solution of the unemployment problem.

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<sup>12</sup> It appears that unit labour costs have fallen after the mid 1990s. Since the measurement of unit labour costs is difficult, the jury is still out.

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## ***Employment, unemployment and reducing working time: the French approach<sup>1</sup>***

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The lasting effects of a reduction in working time (referred to as RWT) depend essentially on the impact on unitary production costs, whether it be at the level of a single company where it is implemented, or at country level. To succeed in creating sustained employment, RWT must not increase the unitary production costs of companies. It is in this spirit that the actual French approach in RWT is implemented as to induce the creation of numerous durable jobs and the decrease of the unemployment rate.

I shall now successively (and briefly) review the effects of the RWT on the employment and unemployment (I), the principle means of financing RWT (II), how they can eventually be activated by the Aubry Law and what the possible effects are on employment and unemployment induced by this new Law (III).

### **1. THE EFFECTS OF A REDUCTION IN WORKING TIME ON EMPLOYMENT AND UNEMPLOYMENT**

Thus, in the simplest case where RWT implemented by a company, does not modify the unitary production costs, its profitability and its competitive position are not modified either. Moreover, in this case, where the workload remains unchanged (in respect to a situation without RWT), the sole effect of an RWT will be an increase in employment, which is equal to that of RWT (in percentage) minus the hourly productivity gains of the work associated with it. These productivity gains are linked to the acceleration of working patterns as well as the elimination of certain under-productive practices both of which could not have occurred without RWT. Unemployment decreases thanks to this creation of employment which is diminished by the « come-back effect » on the labour market: the discouraged unemployed regain hope and return to the labour market when the situation improves (the so-called « conjunctural flexion of the activity rates »). This impact almost totally accountable to RWT on employment and unemployment is often qualified as a «work sharing effect ».

Very broadly, the mechanisms described above, on a company level, can be transposed onto those of a Nation, with two additional important mechanisms coming into play. On the one hand, the balance of Public Accounts improves in respect to a situation without RWT as a result of a reduction in unemployment costs, fiscal revenue and social supplements. It allows granting subsidies for RWT assuring a part of the financing, while durably respecting the constraint of non-degrading Public Finances. On the other hand, when the equilibrium in the labour market improves and the unemployment rate decreases, the bargaining position of employees will be stronger and the pay increases induced by this will put pressure on the costs of enterprises. This pressure on costs will reduce job creation. In the end, this effect

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<sup>1</sup> Partly inspired by G. Cette and A. Gubian (1998). Our sincere thanks to M. de Jong and K. Beau.

could progressively bring the rate of unemployment back to the level it would have had without RWT. The theories called « equilibrium unemployment » strive to define the level of unemployment for which the pressure on wages is contained in a way as to stabilise inflation. These theories on the equilibrium rate of unemployment have been upheaval by the works of R. Layard, S. Nickell and R. Jackman (1991)<sup>2</sup>.

In most general terms, an RWT may modify the equilibrium rate of unemployment upwards or downwards: this result has been shown well by A. d'Autume and P. Cahuc (1997), or G. Cette (1998). If the well being of employees induced by RWT owing to the fact of increased leisure time, improves substantially, the decrease in unemployment generated by this RWT will not accentuate the pressure on wages too much, and the equilibrium rate of unemployment will hence be decreased. On the contrary, if the improvement in well being is weak or non-existent, the equilibrium unemployment rate could remain unchanged (or it could even increase) in which case RWT will not have favourable lasting effects on unemployment.

The macro-economic effect of an RWT on employment and unemployment depends largely, in the long term, on the improvement that RWT induces on the quality of life of the employees in terms of « liberated time ». This improvement will be even more important when the was in which RWT is implemented, fit the expectations of employees. It is therefore useful that the process of preparing and evolving of RWT allows to reveal these expectations, and that the effective ways of RWT be in line with them as much as possible.

The RWT can also contribute to a reduction in the conjunctural unemployment and can accelerate the effective unemployment towards its equilibrium. Taking into account the delay in convergence of unemployment towards its equilibrium level, revealed by the macro-economic models<sup>3</sup>, this result is already important. This decrease in the conjunctural unemployment is obtained by the « work sharing effect ». It is sometimes referred to as a « Malthusian effect », as the wealth is not necessarily modified on a national level. However, we underline that the collective welfare is itself increased by this « work sharing effect »: the situation of the firms and of the Public Finances remain unchanged; the welfare of the employees already at work before the RWT is not modified (or even improved) due to the increase in leisure time which should compensate for the wage moderation and other inconveniences stemming from the constraint concerning the profitability of firms; and the welfare of the ones previously unemployed, who will have found a job thanks to the « work sharing effect » of the RWT, is obviously improved. The constraint, already mentioned, concerning the profitability of firms, is important: if the profitability of firms were affected by the RWT, the conjunctural unemployment (which the RWT could have reduced) would decrease only by an upward shift in the equilibrium unemployment. The favourable « work sharing effect » would potentially be diminished.

For the « work sharing effect » to be at maximum exploited, the constraint concerning the profitability of firms also raises the question of the speed of the economic change: the effects of RWT are more favourable if they are progressive and if the decrease in the effective unemployment rate is not limited by short-term constraints due to hysteresis effects. Consequently, in order to get the benefits of an RWT, additional policies may be necessary to maintain or even develop the employability of the unemployed active population.

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<sup>2</sup> An extended literature is devoted to the question of the effect of the RWT on the equilibrium unemployment notably the works of L. Calmfors (Cf. for example (1985)). For an overview of this literature, Cf. A. D'Autume et P. Cahuc (1997).

<sup>3</sup> For France, see on this topic Banque de France, Direction de la Prévision, Erasmé INSEE, OFCE (1998).

Resuming, in order to obtain the best lasting effects of an RWT on employment, it is necessary that the unitary production costs are not increased, which means that the hourly productivity gains from the RWT are sufficient to finance the increase of costs linked to the RWT coming from the fixed costs per worker as well as the increase in hourly wage (for more details see G. Cette (1998)). There is an extended literature in which it is assumed that this condition cannot be verified mainly because of the fixed costs per worker (see for example OECD (1998), Chapter 5 dealing with the RWT). This argument seems to be weak, at the least in its most general form, as certain industrialised countries have evidently achieved to decrease the average working time of their workers considerably and reduce the unemployment in the same time while remaining highly competitive. For example in the Netherlands between 1983 and 1997, according to the OECD data (1998), the average annual working time of employees has decreased from 1550 to 1400 hours (compared to 1570 to 1540 in France), the employment has increased by 26 % (against 2.4 % in France), and the unemployment rate has decreased from 11.0 % to 5.6 % (against 8.3 % to 12.4 % in France) while the net trade balance is positive by 6.1 % of GDP in 1997 (against 2.7 % for France). Hence, the analysis of fixed costs remains to be done.

It is clear that a balanced bargaining between social partners is essential to evoke such a virtuous process<sup>4</sup>. In France, the Law on « the orientation and the incitement concerning the reduction in working time » of 13 June 1998, called the Aubry Law, aims at giving an impulse to the process of negotiated RWT in order to favour such a virtuous process.

To conclude, it is interesting to note that, amongst economists who are little convinced that RWT policies could reduce unemployment, some of them have proposed superficial and unconvincing analyses based on simple statistical correlations. For example, R. Layard, S. Nickell and R. Jackman (1991) show graphically (in a related discussion) a relationship between the observed changes in the unemployment rate and the working time over the period 1975-1988 for several industrialised countries. In this way, they show that countries which have had the strongest RWT are also the ones with the highest increase in unemployment. From this observation, they conclude that the RWT cannot be an answer to the problem of unemployment<sup>5</sup>.

We must begin to oppose to such a « demonstration », based on simple graphic correlations, by saying that the countries which are the most affected by the increase in unemployment may very well be the ones which have attempted to contain this increase by different policies under which the RWT. The increase in unemployment would have been even stronger in these countries without RWT policies. And when we reproduce the same graph, for the same countries, yet over a longer period (1975-1997), or only since the second oil shock (1982-1997), we see no such relationship (Appendix).

Moreover, when we graph the working time and the unemployment rate in levels instead for 1997, we again note the absence of any clear relationship (Appendix). However, if we only look at the European continental countries (dropping the USA, Japan, the UK and Canada), we see a positive relationship: the longer the working time, the higher the unemployment rate.

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<sup>4</sup> It is by such a virtuous process of negotiation that the important RWT realised in the Netherlands in the last two decades has been able to contribute in such significant manner to the reduction of unemployment. Cf. on this topic J.-Y. Boulin and G. Cette (1997) ; IRES (1997).

<sup>5</sup> "Unemployment has risen most in those countries where hours have fallen most. The case for shorter working hours receives no support from these statistics", Layard, Nickell et Jackmann (1991), p. 504.

This to say that, concerning the RWT, prevailing demonstrations should be taken with care, even when they are based on empirical data.

## **2. THE FINANCING OF A REDUCTION IN WORKING TIME**

If an RWT were to create sustained employment, its financing should not degrade the profitability of the *enterprise* nor structurally the *Public Finances*. If it is possible to put structural incentives into motion for an RWT in the Public Administration, they must be envisaged « at zero costs *ex post* » for the Public Finances. Moreover, the envisaged RWT in public companies must be as demanding and constrained in financing as the for private companies.

It is in this spirit that the structural subsidies towards RWT are viewed by the French Government. The considered amount of such subsidies, according to various realistic hypotheses, is around 5 000 FF (about 750 euros) per year and per employee if working time is reduced by 10 %. If the structural subsidies towards RWT must be affected at zero costs for the Public Finances, other subsidies can be added transitorily to incite and facilitate the movement of RWT. These concern the *transitory subsidies*, at non-zero costs *ex post*, which can help to compensate the firms for transitory costs of negotiations and reorganisations related to the process of RWT. A completely different logic is concerned here than for structural subsidies, comparable to those of numerous other political operations which have non-zero costs *ex post* for the Public Finances.

*The hourly labour productivity gains* induced by RWT can contribute strongly to its financing. Based on various studies, the evaluations of RWT scenarios, made with macro-economic models, usually suppose these gains to be between 25 % and 50 % of RWT. Generally, the intermediate number of 1/3 is adopted<sup>6</sup>.

*The economy of fixed capital*, induced by possible reorganisations and by prolonging the capital operating time associated with RWT, can also contribute to the financing of RWT. Though this source of financing could be important for certain firms, numerous studies show that on the macro-economic level, it not a significant means of financing (Cf. D. Anxo, G. Bosch, D. Bosworth, G. Cette, T. Sterner and D. Taddei (Eds) (1995) ; G. Cette and D. Taddei (1995)). In any event, simply maintaining the capital operation time would already be a positive result.

*A wage contribution* is also one of the means of financing an RWT. It can be either dynamic or static. A *dynamic contribution* corresponds to a slower progress in salary without a decrease in purchasing power compared to a situation without RWT. It concerns a use of « spontaneous » productivity gains, that is independent of RWT, to finance it rather than a wage increase per head. This means of financing is one which has historically been most frequent in the past. It is also true that over a very long historic period, the strong diminution of working time has been realised under financing condition compatible, *ex post*, with a sustained growth in the economies of the industrialised countries. The wage contribution to the financing of RWT can also be static and can take the form of an instant decrease of purchasing power. This is certainly the situation for individuals (part-time).

Obviously, in both a dynamic or a static form, the contribution by wages to the financing of RWT can be more important (all other things being equal) as the employees find more advantages in RWT. It is for this reason that we have previously emphasised that RWT must

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<sup>6</sup> E. Malinvaud (1973) proposed a value of 50%.

at best correspond to the aspirations of the employees concerned in the firms, in the modifications in the organisation of work it entails.

For France, the analysis of around 3 000 agreements of RWT reached between October 1996 and June 1998 in the context of the Robien Law (Cf. L. Doisneau (1998)), which concern 280 000 employees, as well as the analysis of 4 000 agreements reached between June 1998 and April 1999 (Cf. MES (1999)), which concern 1 200 000 employees, show that very many RWTs have integrated forms of wage contributions in a static way (at the moment of RWT) or dynamically (after RWT). Of course this wage consent to contribute to the financing of RWT is more frequent, in its two forms (static or dynamic), in the context of a defensive agreement than in an offensive one. It remains very important even in cases of offensive agreements in which we can assume that employees have negotiated more freely, without significant threats directly concerning their work.

Moreover, a number of vast surveys done over thousands of employees indicate that the majority is hostile to a decrease in their salary at the moment of an RWT (static contribution). However, they are more receptive to a wage moderation, if their salary is higher (majority of white collars are in favour), if there are trade-offs in terms of employment accompanying RWT and if the implementations of those trade-offs are in line with their expectations (Cf. M.-P. Baesa (1996); J.-Y. Boulin, G. Cette and D. Verger (1998)).

How much should wages contribute to the financing of an RWT? The extreme diversity of the situations of firms and of the expectations of employees prohibits any generalisation, of course. In certain (rare) cases, the economy of capital could be sufficient to finance RWT and a wage contribution would not be necessary. But on average, the two means of financing, that is inherent productivity gains and structural subsidies of the Public Administration, can contribute about 60 % of the total financing of RWT (a third and a quarter respectively). The wage contribution must hence finance the remaining 40 %. This number is high and low at the same time: if the wage contribution will be inevitable in general, it will represent only a reduced fraction of RWT and can be obtained over several years.

### **3. THE POTENTIAL EFFECTS OF RWT EVOKED BY THE AUBRY LAW**

The limited results, we could even say non-existent, in terms of RWT, of the inter-professional agreement of 31 October 1995 recommending RWT to create employment, have shown once again that it is impossible to succeed in this domain only by negotiation between social partners. Moreover, the fact that despite very generous financial incentives which were in place for 18 months in accordance with measures written in the Robien Law, less than 300 000 employees have benefited (that is literary 30 000 jobs created and by a more economical evaluation 20 000 jobs created or preserved), shows that strong positive incentives are not sufficient anymore to get a real process of RWT under way. That is why there is intervention by the Public Authorities through the Aubry Law, whose principle elements are given in the Table below.

Concerning the effects, everything will depend on the financing of RWT for the reasons mentioned above. If the financing is « successful » (in other words if RWT doesn't structurally degrade the accounts of firms nor the Public accounts), important sustained employment would be created. In case of default, the inflationary consequences of RWT strategy would be unfavourable for an economy that has definitely entered the Euro zone, the correction by the exchange rate of the inflationary effects not being possible.

The evaluations made using macro-economic models, collectively indicate that, under the favourable conditions of financing as mentioned above, RWT evoked by the Aubry Law may not pretend to be the solution to massive unemployment in France. Yet, the potential of jobs created or preserved is certainly superior to those of other labour policies. In the best case, that is, under strict conditions for a cost equilibrium in firms, passing from 39 to 35 hours per week for all full-time workers in the non-agricultural merchandising sector, could lead to a durably higher level of employment by 700 000 persons, and to a two points decrease in the unemployment rate<sup>7</sup>. Concerning firms with more than 20 employees alone, around 500 000 jobs would be created.

Furthermore these evaluations show that, under the usual hypotheses of hourly productivity gains of labour induced by RWT which are between 25 % and 50 %, non-degrading unit production costs in firms will need a wage contribution towards RWT as well as a dampening of salaries. The wage efforts can then be rewarded by structural subsidies given by the Public Administration at zero costs ex post. The amount and the entitlement conditions of these subsidies will be outlined in the second Law at the end of 1999. We note that, if employees were to lose (on average) some purchasing power, compared to a situation without RWT, they would gain leisure time and many unemployed would gain a job... In contrast, the macro-economic evaluations indicate that, if the conditions for an equilibrium are not respected, notably for the reason of an insufficient wage moderation, the number of jobs saved or preserved could be sensitively less in the long run than the numbers given above. This number of jobs would even be negative if the resulting inflation and disequilibrium of the Public Finances would lead to restrictive policies.

The limits of such evaluations are often exploited to disqualify them. Such rejections may seem excessive, if one admits that the limits of evaluations are not superior for the policy of RWT than for other labour policies usually evaluated. The evaluations have in fact a pedagogical vocation: the economists who make them show under what conditions the effects of an RWT are favourable. The economists show the unfavourable consequences of a disrespect of these conditions. They show the inevitable necessity of wage moderation, but it is up to the social actors to make the choice, on the micro-economic level, between respecting the important conditions, and hence the success of RWT, or disrespecting them, and having an eventual failure...The Aubry Law leaves time for negotiation between social partners, all in accordance with the positive and negative incitements of RWT. But the effects of such policies will depend on the financing of RWT which is decided by the actors in the negotiations. If the financing will be « successful » and respects the highlighted constraints, important sustained employment will be created. The well being of households will be modified, in the sense that the employees will gain spare time while losing a slight purchasing power (compared to a situation without RWT) and many unemployed will find a job.

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<sup>7</sup> Cf. G. Cette et A. Gubian for an overview of the literature on these evaluations.

**Table: the Aubry Law: principle elements**

Schematically, the policy to reduce working time (RWT) implemented by the Aubry Law of 13 June 1998 constitutes the following principle elements:

- First of all, an *encouragement for negotiation between social partners*. Article 2 of the Law appeals to negotiate about RWT and the right for financial aid is conditional to a signed agreement. Moreover, it is announced that many arrangements (overtime, the working time of high personnel...) will be decided in a second Law which will be voted by the end of 1999, and as such it will take into account the agreements within sectors or firms negotiated before its elaboration.

Conditioning the entitlements for subsidies to an agreement that is signed by the social partners in a firm is evidently designed to dynamise the collective negotiation. Such agreements can allow to unlock certain arrangements concerning the Working Code. This can contribute to develop, within the domain of working time, the contract rights work at the expense of reglementary disposition (Cf. J. Barthélémy (1998)). This approach brings with it an element of guaranteeing that the implementations of RWT correspond to the interest of both signing parties. It is specified (article 4 of the Law) that *the reduction in working time can be in the form of days leave* which can if necessary be capitalised over four years via a time savings account;

- Furthermore, the *signal to lower the legal weekly working time to 35 hours*, on the 1st of January 2000 for the firms with 20 employees and more, and on the 1st of January 2002 for the firms with less than 20 employees;

- *Negative financial incentives*. Firms whose working time will remain above 35 hours after the decrease in legal working time will experience an increase in labour costs due to the fact that hours are becoming overtime and because of associated wage premiums. These wage premiums will be decided in the context of a second Law by the end of 1999. The quota for overhours, which will also be decided in the second Law, could in fact constitute a compulsory reduction in working time for firms which practice longer working times;

- *Positive financial incentives* designed in the case of an agreement between the social partners to reduce working time before the legal decrease in time, of at least 10 % to 35 hours per week under certain conditions concerning recruitment. The subsidies are as such designed to create employment (offensive version of the Law) or to maintain employment in the case of a social plan (defensive version). The creation of jobs (in the case of an offensive agreement) or the preservation of jobs (in the case of a defensive agreement) must be at least 6 % for an RWT which is at least 10 % (9 % for an RWT which is at least 15 %).

According to the commitments of the Government, a one-off allowance in the order of 5 000 francs would follow the transitory subsidies. This allowance could benefit other firms for whose working time will be 35 hours or less. The exact amount of this subsidy as well as the conditions in which to obtain the right, will be decided in the second Law.

\*

The process is as such rather flexible, as it values the voice of negotiation between social partners, it leaves time for negotiation and on accordance with the positive and negative incentives towards RWT. In all that, the approach distinguishes itself from previous interventions, for example the Robien Law or

*Eu Enlargement*

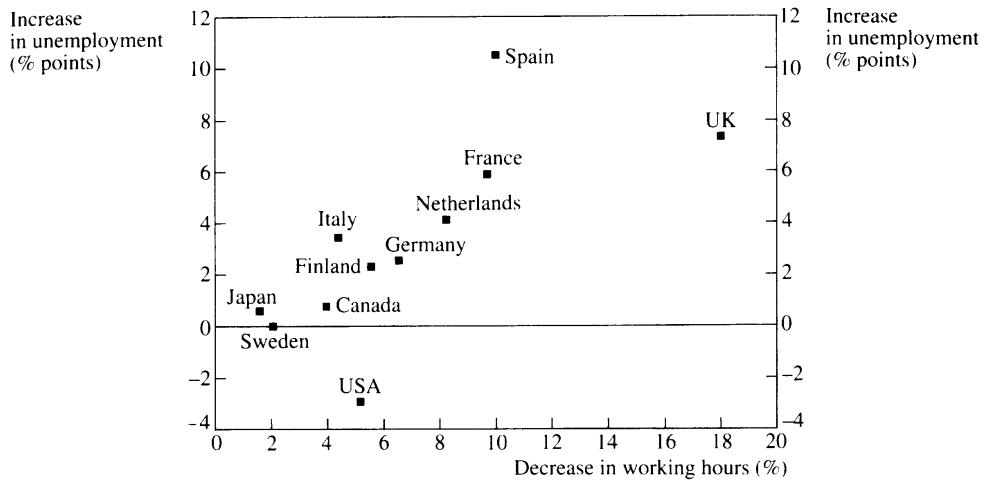
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the Regulation of 16 January 1982 which had lowered the weekly legal working time from 40 to 39 and which had generalised the fifth week paid leave. This flexibility is of course designed to facilitate the conclusion of agreements in which the partners find advantages (win-win agreements) and whose modes of financing RWT optimise the favourable effects on the resulting employment.



## APPENDIX

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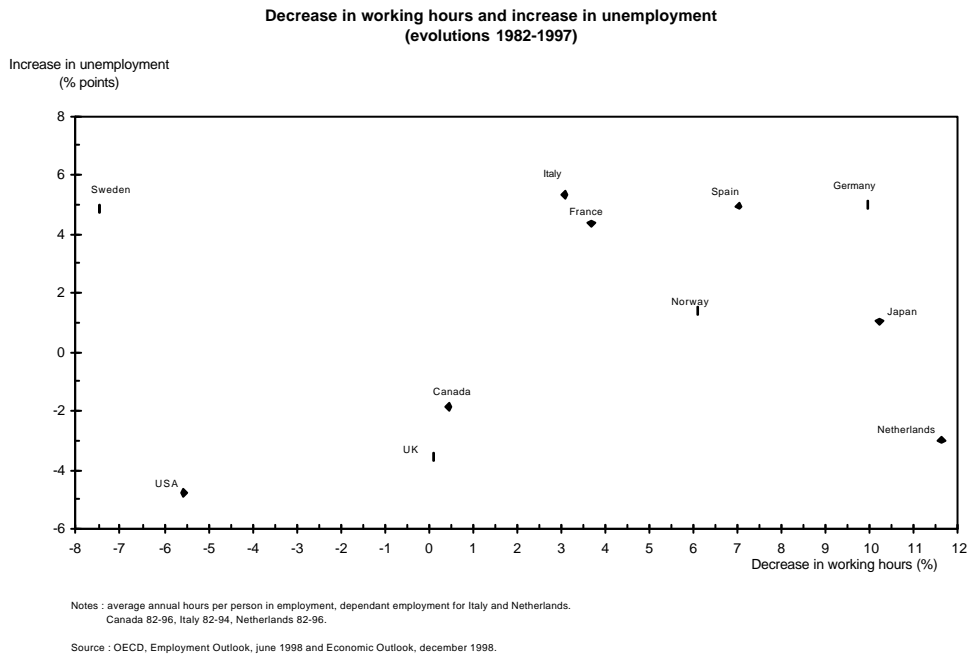
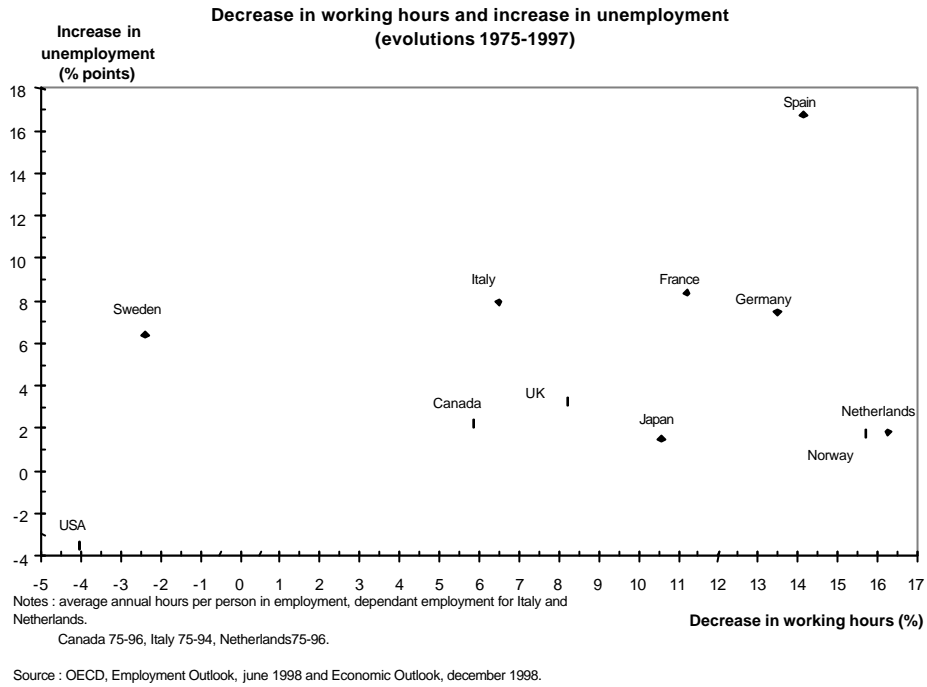


**Fig. 3.** *Decrease in working hours and increase in unemployment, 1975–1988.*

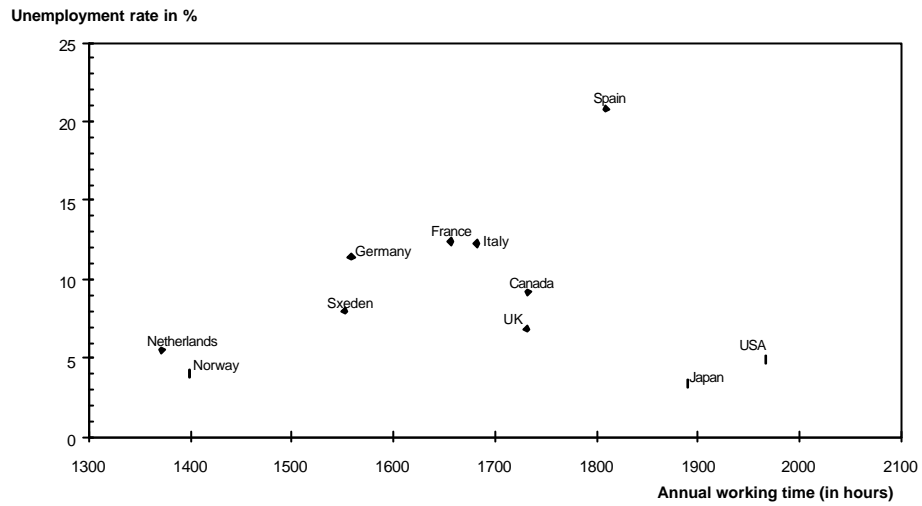
Average annual hours per person in employment.

*Notes:* Italy, 1975–83; UK, 1975–84; Netherlands, 1974–87; Spain, 1979–88. Dependent employment for Germany and the Netherlands.

*Sources:* *Unemployment:* OECD, *Employment Outlook*, 1990, Table 1.A.4, and OECD, *Employment Outlook*, Sept. 1987, Table 5.7. *Hours:* OECD, *Employment Outlook*, July 1990, Statistical Annex, Table L. For UK: OECD, *Employment Outlook*, Sept. 1988, Statistical Annex, Table L.



Working time and unemployment in 1997



Notes : Unemployment : standardised rate (OECD) ; average annual hours per person in employment, dependent employment for Italy and Netherlands. Canada 1996, Italy 1994, Netherlands 1996.

Source : OECD, Employment Outlook, june 1998 and Economic Outlook, december 1998.

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## ***The Eastward Enlargement of the European Union: A New Economy for a United Europe\****

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*Chargé de mission for the Commissaire au Plan (French Planning Commissioner)*

### **1. THE UNION OF EUROPE, A STEP IN ALONG PROCESS**

By enlarging the European Union to Central and Eastern European Countries, the Baltic as well as Malta and Cyprus, Europe will attain unity. The will to enlarge the Union exists. This enlargement will follow preliminary and necessary reforms, which are to start after the Berlin agreement, the 24 and 25 March 1999, concerning Agenda 2000<sup>2</sup> - a package of reforms of the Union's budget and the Community's intervention mechanisms (essentially the Structural Funds and the Common Agricultural Policy). The Cologne Summit of the 3 and 4 June 1999 signalled the start of a new phase in institutional reform, running to the end of 2000. The new Inter-Governmental Conference (IGC) will be officially launched at the Helsinki Summit, next December, and should end a year later under the French Presidency of the Union<sup>3</sup>.

The road to enlargement requires many decisions to be made and compromises to be struck. France and Germany were particularly keen to reach a conclusion concerning the budget at the Berlin Conference this year while there was a wide spread scepticism on this subject. This was achieved. Similarly, there is nothing now which suggests that substantial and sufficient progress cannot be made over institutional matters, before the end of 2000. These reforms will neither block nor slow down enlargement.

Enlargement will have major political and strategic implications for Eastern Europe, which will become part of a safe, stable and prosperous region. The responsibility of the European Union on the continent will rise markedly.

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\* Paper presented at the 5<sup>th</sup> Franco-German Forum CEPIL-ZEI, Paris, 5 and 6<sup>th</sup> July 1999. Translation to English:

Nicolas Sowels.

<sup>1</sup> This paper takes up numerous points included in "*l'élargissement de l'Union Européenne à l'est de l'Europe : des gains à escompter à l'Est et à l'Ouest*", a report prepared for the French Prime Minister, at the request of the *Délégation pour l'Union Européenne de l'Assemblée Nationale*, with a preface written by Henri Nallet, Chair of the Delegation, available from *La Documentation Française*. The author remains, nevertheless, entirely responsible for this text.

<sup>2</sup> The final communication stipulates: "In order to guarantee effectiveness of work carried out by the European Union after enlargement, the Council of Europe confirms that it intends to summon a conference of representatives of the governments of the Member States, at the beginning of 2000, so as to resolve institutional questions that were not settled at Amsterdam and which must be resolved prior to enlargement".

<sup>3</sup> The 15 Member States have decided to restrict this exercise to issues left outstanding at Amsterdam, which came into force the 1 May 1999.

## **2. THE EASTWARD ENLARGEMENT OF THE UNION AS A MAJOR POLITICAL ISSUE**

The principle of enlarging the Union to Central and Eastern European Countries was taken at the European Council in Copenhagen, the 22 June 1993. The Luxembourg Council of the 12 and 13 December 1997 decided to open up negotiations in 1998, which are still in progress, with the six countries selected by the Commission in the Agenda 2000 report: five countries are from Central and Eastern Europe as well as the Baltic (Estonia, Poland, the Czech Republic, Hungary and Slovenia), to which Cyprus may be added. European conferences are being held, in parallel to these negotiations, with all applicant states, including Bulgaria, Romania, Slovakia, Lithuania, Latvia, to which Turkey may be added. Malta requested that the European Union reactivate its application, on the 10 September 1998.

The Eastward enlargement of the European Union will be one of the major political undertakings of the Union in the next years. The crisis in Kosovo is a tragic example, but illustrates this movement. Most of the regional actors in this drama are not in the "circuit" of the applicant countries. Nobody can refute the idea that this lack of perspective and sense has accentuated the hate stemming from nationalism.

Fortunately, the European Council approved the creation of a stability pact for South-East Europe, on the 14 April 1999. This will be established in June, following a conference bringing together all the actors concerned by the crisis (including the Republic of Yugoslavia, provided it accepts to abide by international rule).

## **3. MORE THAN TWENTY YEARS BEHIND**

The integration of ten Central and Eastern European Countries (CEECs) into the Union will increase its population by 105 million (bringing the Union total to 490 million), and expand its surface area by 34%. However, the increase in EU GDP will only be in the order of 4 to 5%, given the modest levels of national wealth in the CEECs: GDP per capita is on average equal to 15% of the Western Europe's.

This very strong difference between the rise in the population and GDP indicates that the Union's heterogeneity is set to increase substantially. This was already the case in the past. But this time the differences will be even greater. The GDP per capita of the Union will fall by 16%, compared to a 3% when the "Six" became nine, a 6% fall when the nine became twelve, and a 3% fall when the 12 became 15 (including German unification).

But, the CEECs are very far from being developing countries. Their education level, for example, is relatively high compared to Western Europe. In fact, they are in transition. Econometric estimations suggest that, apart from their freedom, these countries lost 15 to 30 years of economic development under central planning.

It is possible to quantify the backwardness accumulated by the CEECs during their inclusion in the Soviet bloc. Table 1 looks at the consequences of Soviet communism on the CEECs. It is taken from a very complete study by the IMF (Fischer, Sahay and Végh (1998)). It gives GDP per capita, in 1992, and the GDP per capita these countries would have had at that time had they not experienced Soviet oppression. To calculate this theoretical level of GDP, Fischer, Sahay and Végh (1998) began by taking the GDP level of these countries in 1937. Subsequently, this level is extrapolated using the regressions established for Western

countries over the same period of time, thus providing a theoretical level of GDP in 1992<sup>4</sup>.

The Table subsequently assumes future growth rates based on the methods of Barro (1991) and Levine & Renelt (1992), in order to indicate the number of years "lost" with respect to Western Europe. This number corresponds to the number of years needed to close the gap, under present conditions<sup>5</sup>. The average lag following on from the communist period is equal to one generation.

**Table 1: The Backwardness of some Former Communist Countries in Eastern Europe**

	<b>GDP per capita 1992 (real)</b>	<b>GDP per capita 1992 (predicted)</b>	<b>Annual rate of growth in % - (Barro method)</b>	<b>Number of years of backwardness</b>	<b>Annual rate of growth in % - (Levine-Renelt method)</b>	<b>Number of years of backwardness</b>
Bulgaria	4054	14000	5.06	<b>25</b>	5.31	<b>24</b>
Czech Republic	6845	15845	5.66	<b>15</b>	4.73	<b>18</b>
Hungary	5638	15448	5.19	<b>20</b>	4.74	<b>22</b>
Poland	4726	14584	5.54	<b>21</b>	5.06	<b>23</b>
Rumania	2565	13102	5.61	<b>30</b>	5.85	<b>29</b>
Yugoslavia	3887	13446	5.62	<b>23</b>	5.42	<b>24</b>

*Source:* Fischer, Sahay and Végh (1998), calculations, French Planning Agency.

#### **4. A STRONG INITIAL DECLINE IN PRODUCTION WHICH IS NOT SET TO BE REPEATED**

All these countries went through a strong recession as of 1989. They experienced a 20% fall in GDP over three years, on a weighted average basis. As shown in Table 2, some of these countries are today in a relatively favourable situation (Poland, the Czech Republic, Slovakia, Slovenia, and Hungary), whereas others are especially backward (mainly Bulgaria, Latvia and Lithuania).

**Table 2: The Evolution of GDP in the CEECs (year 1989=100)**

	<b>1989</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998 (estimates)</b>	<b>1999 (forecasts)</b>
Poland	100	88.4	82.2	84.3	87.6	92.8	98.8	104.8	112.0	117.8	124.9
Slovenia	100	95.3	87.6	82.9	83.9	88.5	92.1	94.9	98.5	102.4	106.4
Czech Republic	100	98.8	87.4	84.6	85.1	87.4	92.5	96.3	97.3	96.3	97.8
Slovaquia	100	99.6	83.8	78.2	74.5	78.1	83.8	89.6	94.7	99.4	103.0
Hungary	100	96.5	85.0	82.5	81.8	84.2	85.6	86.5	89.9	94.0	98.4
Estonia	100	96.4	84.9	66.6	61.0	62.8	65.3	67.9	75.4	79.2	84.7
Romania	100	92.6	80.7	73.6	74.5	77.4	82.8	86.2	80.5	76.5	77.5

<sup>4</sup> This type of extrapolation can be legitimately challenged, but it is particularly pertinent for the former Czechoslovakia, Hungary, and Poland, which had cultures and industrial bases quite similar to those in Western Europe.

<sup>5</sup> For the period in question, government spending is considered to be equal to 10% of GDP, and investment 30% of GDP. These hypotheses are relatively optimistic, so that the number of years should be viewed as a lower limit.



Bulgaria	100	90.9	80.3	74.4	72.6	73.6	75.5	67.3	62.3	64.8	67.3
Lettonia	100	97.7	86.9	56.3	48.0	48.9	49.1	50.5	53.5	55.6	59.3
Lituania	100	95.0	82.3	51.8	42.3	42.7	44.2	45.8	48.6	50.1	53.4
Average	100	92.7	83.4	80.6	81.3	85.1	89.6	93.2	96.8	100.8	105.6

*Source:* national authorities, IMF, The World Bank, EBRD, UE/UN, European Economy for the forecasts (1999).

Early studies, which looked principally at the CEECs, attributed this initial fall in production to an excessive stabilisation process<sup>6</sup>. But, as the World Bank has shown (1996), the facts now tend to show that three factors explain this fall. These include demand adjustments after liberalisation, the collapse of the Comecon and the Soviet Union and the disruptions of supply due to the disappearance or absence of institutions and the existence of a system with aberrant incentives.

With stabilisation, liberalisation led to the end of economic scarcity and of supply bared economy, in which products of poor quality found buyers. Henceforth, goods no one wanted remained unsold. At the same time, companies no longer needed reserves and could run down stocks: such stock reduction accounted for about a third of the fall in Polish production in 1990-91 and half the 11% fall recorded in the Baltic states in 1993. In Russia, military orders fell by 70%. All these early fall in output had an impact on demand as incomes were reduced, so that the overall effect on production was greatly amplified.

Linked to the liberalisation of trade, the disintegration of the Comecon and the Soviet Union provoked the collapse of trade among the CEECs and the newly independent states. Buyers then began replacing missing products with imports, including durable consumer goods, from countries outside the Comecon. At the same time, the progressive shift of prices towards world market levels led to a very significant rise in energy and raw material prices outside Russia. According to an approximate estimate by the World Bank (1996), price subsidies provided by Russia for other Comecon countries amounted to \$58 billion in 1990, of which \$40 billion were directed to the rest of the Soviet Union, and \$18 billion to other members. The suppression of such subsidies generated cost increases in imported factors of production, reducing overall supply and production.

Lastly, the Planning institutions in the CEECs and the newly independent states disappeared before market institutions could be set up. The sudden abandonment of planning in a complex economy led to problems of co-ordination and hence a waste of resources as production was often inappropriate<sup>7</sup>.

An inadequate system of incentives, often linked to inadequate property rights, worsened the shortages of technology and modern competencies, and created enormous obstacles to the

<sup>6</sup> Andor and Summers (1998) provide a synthesis of this type of argument.

<sup>7</sup> In this way a number of countries suppressed former systems for attributing agricultural credits, but without replacing them with networks of wholesalers and retailers or by credit attribution systems based on market criteria. The lack of institutions servicing the market led to breakdowns in coordination mechanisms throughout production and commerce, breakdowns which frequently arose from information insufficiencies and a climate of uncertainty. Similarly, herd sizes fell substantially in the newly independent states in the wake of strong price rises for fodder relative to the prices animal products. Russian crude oil production also fell by nearly half compared to 1988 – despite a strong rise in the relative price of energy. The main causes for this were severe shortages of investments in maintenance and modernisation, as well as an inadequate legal, institutional and budgetary system which discouraged improvements in management, foreign investment and the adoption of new technologies.

rapid redeployment of factors of production to newer sectors. Uncertainty has encouraged capital flight, both by households and companies. To some extent, these problems are the inevitable result of a country breaking with its past.

The second indicator that there should be no resurgence of these major problems lies in the fact that countries which have reformed most have the lowest inflation and have returned to positive growth the fastest, so that their present GDP levels are greater than at the transition. Nevertheless, they are still far from having completed their conversion to a market economy, though rates of progress vary<sup>8</sup>. Thus Poland, which is leading the pack in its reforms, was the first to experience an upswing, and has had permanent growth since 1992. This country is also the first to have reached its level of wealth of 1989 (in 1996), and indeed surpass it this year by as much as 25% (thus keeping up the country's lead). Hungary and the Czech Republic are following similar paths. However, the latter has suffered from profound errors in its privatisation process, which means that corporate governance is lacking in this country. This in turn is blocking reforms and restructuring in a fundamental way. Bulgaria, which has undertaken the slowest reform, is at the other end of the spectrum, with growth only turning positive in 1997. This country now seems set on a path of sustainable growth<sup>9</sup>.

Evidence also exists at company level to validate these observations. The existence of a failing macroeconomic environment is an important factor in explaining the poor performance of companies. Buiter, Largo, Rey and Stern (1997) provide an econometric demonstration based on company data.

**East Germany and Instantaneous Transition: A Political Obligation  
at the Expense of Sustainable Development**

At the time of reunification, Eastern Germany accounted for a quarter of West Germany's population, but only provided one tenth of its domestic product. The reunification provided an institutional and legal framework that had survived the test of the market and access to a vast network of experts. Reunification also provided considerable resources - equivalent to nearly 50% of East German GDP and between 4 and 5% of West German GDP - to finance investments and social transfers. However, it soon became apparent that the situation stemming from wage differences in the East and West, which were necessary to compensate for the low productivity in Eastern Germany, were not acceptable from a social and political point of view. The rise in wages pushed up unit labour costs in Eastern Germany to levels that existed nowhere else in the world.

As stressed by Bénassy-Quéré and Villa (1995), Germany thus embarked on a policy of promoting economic and especially social catch-up by the Easter *Länder*, at the expense of growth in Western Germany and in Western Europe more generally. Thus, the German authorities accepted wage increases in the East without subsidising them: subsidised capital in the East and the use of concessional interest rates disconnected the cost of capital in the East from the restrictive monetary policy pursued by the Bundesbank. Lastly, they raised taxes in the West, in order to finance infrastructural investment and social security in the East. This explains generalised unemployment, which was made politically acceptable by social transfers that provided the unemployed with living standards that were higher than for employed workers prior to unification. Without use of early retirement and other similar programmes, unemployment would have risen to over

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<sup>8</sup> A very complete analysis of this is provided in the theoretical section of the French Planning Agency's Study "L'adhésion à l'Union européenne est un puissant accélérateur de croissance l'Est avec un effet retour positif à l'Ouest", World Bank (1996), De Melo et al. (1996), and Fischer, Shay and Vegh (1998).

<sup>9</sup> The impact of reforms and liberalisation has thus been beneficial for the economy. Furthermore, it is possible to observe a clear correlation between political freedom and liberalisation, which is to be much appreciated for countries that are coming out of totalitarian rule: the countries that have reformed most have the most freedom and the greatest respect for human rights and vice-versa. See De Melo *et al.* (1996).

30%. Based on simulations, the provisional maintenance of former plant and equipment in operation would have been more effective in terms of employment during the transition than wage subsidies.

The former German Democratic Republic is beginning to move out of the recession which accompanied the period of adjustment, and the surviving companies make up a very competitive core. But only a small number of the present unemployed can expect to find a job. The transition has led to the social marginalisation of a whole generation. It cannot therefore act as a model.

## 5. THE EFFECT OF INTEGRATING MARKETS IS FAR MORE POSITIVE THAN A FREE-TRADE ASSOCIATION WOULD BE<sup>10</sup>

Baldwin, François and Portes (1997) used the GTAP (Global Trade Analysis Project) model to evaluate the impact of an enlargement of the Union on Eastern Europe. This model makes it possible to study various effects (distribution of resources and accumulation).

In the wake of integration, the trade policies of the European Union and the CEECs are modified. In these studies, such modifications consist primarily of the suppression of customs' tariffs between two regions, and the adoption by Eastern Europe of the EU's Common External Tariff. Two estimations are carried out. They correspond to different agreements (a free-trade agreement, or a deeper economic integration agreement with the creation of an integrated single market) and a different attitude by investors. In the first case, the estimations only take into account the effects of free trade. In the second case, the issue of country-risk is tackled. In the latter case, it is assumed that advanced integration helps diminish country-risk. Baldwin *et al.* (1997) use a normative assumption stipulating that average country-risk by the CEECs will converge on that of Portugal.

In this case, it is to be observed that distribution and accumulation effects linked to integration have little impact on well-organised market economies. The CEECs are thus favoured more than Western Europe. Furthermore, the accumulation effects that correspond to an acceleration of investment have a more important impact on GDP.

The first estimates only take into account effects linked to free trade<sup>11</sup>. In this case, the percentage variation of domestic product with respect to the situation of *status quo* (ie. no integration) is 7.5 times greater for the CEECs than for the European Union (Table 3).

**Table 3: Variation in Domestic Product (*baseline : no integration*)**

Country Percentage of GDP	Creation of a simple Free- Trade Association	Implementation of advanced integration
CEECs	1.5	18.8
EU	0.2	0.2
EFTA	0.1	0.1
Ex-USSR	0.3	0.6

<sup>10</sup> The economic points which follow are based largely on Cazes, Coquet, Fayolle, le Cacheux and Lerais (1996), Baldwin, François and Portes (1997), Piazzolo (1997) and Keuschnigg and Kohler (1997).

<sup>11</sup> In practice, issues of country-risk and its possible fall following integration are not taken into account here.

CEECs: Czech Republic, Slovakia, Poland, Hungary, Slovenia, Bulgaria and Romania. Ex-USSR: including the Baltic States.

*Source:* Baldwin, François and Portes (1997).

On top of this first set of advantages are those linked to the accumulation of factors. Integration makes it possible to improve the institutional environment and to reinforce macroeconomic stability: investments become less risky, which makes them more attractive and accelerates they're (in) flows.

The consequences of integration for the European Union are no different in this second case. In contrast, the impact of integration on the CEECs is multiplied by 12. This increase is due to a 68% rise in the capital stock of the CEECs (as opposed to a 1.2% increase in the stock under the previous scenario).

The effects of integration are more modest for well-organised market economies. Furthermore, the effects corresponding to the acceleration of investment have a considerable impact on the growth of GDP.

It is interesting to vary the two parameters which characterise the integration process of the CEECs. The first is made up of a reduction in the breaks to international trade. The second concerns the risk premium on investments. The impact of enlargement will be examined for different sets of parameters. The results are presented in Table 4.

**Table 4: Variations in the Value of Domestic Product (ECU billions, 1992) relative to Non-Integration and as a Function of the Reduction in Risk Premiums and Trade Costs**

Reduction in the risk premium (with a reduction of factors limiting international trade by 10%)	CEECs	EU
<i>0%</i>	2.5	9.8
5%	6.2	10.0
10%	14.5	10.3
<b>15%</b>	<b>30.1</b>	<b>11.2</b>
Reduction in the constraints of international trade (with a 15% cut in risk premium)		
5%	29.5	10.2
<b>10%</b>	<b>30.1</b>	<b>11.2</b>
15%	30.4	11.8

The figures in bold are the results for advanced integration, whereas the figures in italics relate to a free-trade union.

*Source:* Baldwin, François and Portes (1997).

The effects on the CEECs only slightly depend on the reduction in the constraints on international trade. In contrast, these effects are very dependent on the evolution of the cost of capital (via the fall in the risk premium) and correlatively to foreign financial flows. This second factor conditions catch-up fundamentally.

Deep integration of Eastern and Western markets, as is foreseen by the enlargement of the

European Union, will permit investment flows and growth to accelerate. It has a far more positive effect than a simple free-trade union. Moreover, the most advanced integration into a region of economic stability and institutional security becomes a major objective in itself for these countries. Furthermore, expectation theory indicates the importance of developing credible prospects for membership, which would favour direct investments, as of now.

## 6. MODELLING THE EFFECTS OF INSTITUTIONAL DEVELOPMENT ON GROWTH

Piazolo (1997) has tried to quantify the effects on the CEECs of adopting European rules. More specifically, he has attempted to define the effects which a favourable institutional environment may have on economic development. The main difficulty in this assessment lies in quantifying the quality (development and appropriateness) of this environment and the corresponding rules of public intervention. Piazolo (1997) used an indicator of the European Bank or Reconstruction and Development (EBRD) to do this. It is called the "Indicator of Institutional Change", and studies the transition in 25 countries. It is calculated for each country, and covers 9 areas<sup>12</sup>. Each area is graded for low to high institutional progress (from 1 to 5 respectively). The indicator is then calculated by adding the grades for the nine areas. Piazolo (1997) uses a growth model including this institutional indicator as an exogenous variable.

### The Growth Model by D. Piazolo (1997)

D. Piazolo (1997) uses a classical growth model in his demonstration (without economies of scale), with capital accumulation being taken as endogenous. The model includes a representative firm and individual. The production function of the firm is given as:

$$Y = AP^\beta K^\alpha \quad (1)$$

with  $0 < \alpha < 1$  and  $0 < \beta$ .

P is a parameter representing the institutional environment in the CEECs<sup>13</sup>. It indicates the extent to which institutions have converged with the West. The result is a model similar to Solow's (1956), to which the author has added a variable for institutional change. The amount of work is assumed to be constant and equal to 1, which is a non-negligible assumption in the case of the Central and East European Countries, which have experienced very strong fluctuations in their employment levels. The agent maximises a classical function of representative utility.

$$K^{1-\alpha} = \alpha AP^\beta / (\delta + \rho) \quad (2)$$

$\delta$  is the rate of capital depreciation, and  $\rho$  the preference for the present.

As  $1 - \alpha > 0$  and  $\beta > 0$ , when P rises, K rises too. As production Y is both a function of P and K, a deepening of the reform raises production, via capital accumulation and also via a rise in capital productivity. That said, when the level of reforms rises, capital accumulation and domestic growth rise. The production function may be re-written after differentiation:

$$dY/Y = \beta dP/P + \alpha dK/K + \gamma \quad (3)$$

with  $dA/A = \gamma =$  technical progress.

<sup>12</sup> Large and small-scale privatisation, company restructuring, price liberalisation, the organisation of foreign trade and commerce, competition policy, banking reform and the liberalisation of the interest rate, non-bank financial institutions and market surveillance, as well as the application of legal rules to investment.

<sup>13</sup> The P variable is not included in the traditional growth model by Solow (1956). In Barro's model (1991) P is replaced by G, which represents government activity.



The effects of change in the institutional environment on growth in the CEECs are estimated econometrically. The results are provided in Table 5. They demonstrate that growth is positively correlated with the convergence of the institutional environment in the CEECs on that of the West. Thus, if P rises by 10%, then domestic product, Y, rises by about 3%.

**Table 5: The Impact of Institutional Change on Growth**

Exogenous Variables	Dependent Variable: $dY/Y$	
	Constant	-14.77* (5.03)
dP/P	33.89* (3.54)	29.58* (3.29)
dK/K	0.37 (1.23)	-
R <sup>2</sup>	0.36	0.32

\* The coefficient is significant. Calculated for 1989-1996, the variation of GDP extends over the period. Data from the World Bank and the EBRD, calculations by the author. Source: Piazzolo (1997).

The analysis put forward by Piazzolo (1997) is also based on the consequences of the institutional environment for foreign direct investment flows, as is shown in the following econometric estimation. Other things being equal, a 10% increase in the Indicator of Institutional Change should lead to a further \$80 of FDI per capita over one year (Table 6).

**Table 6: The Impact of Institutional Change on Foreign Direct Investment**

Exogenous Variables (in dollars)	Dependent Variables	
	Total inflow of foreign direct investment per capita 1989 to 1995	Inflows of Foreign Direct Investment in 1995, per capita
Constant	-427.60* (2.4)	-158.64* (2.21)
dP/P	22.91* (3.21)	8.56* (2.98)
R <sup>2</sup>	0.31	0.28

The coefficient is significant. Calculated for 1989-1996. Data from the World Bank and the EBRD, calculations by the author.

Source: Piazzolo (1997).

These estimates can help us to measure the potential effects on growth of the CEECs adopting the *acquis communautaire*. It is assumed that countries integrating the *acquis communautaire* will see their grades rise to 4 or 5 in each of the nine areas.

The potential maximum of the Institutional Change Indicator is 45, a score, which would seem difficult to achieve in the short term. We will examine here the consequences for growth of this indicator reaching a total of 42. Table 7 provides a level of institutional backwardness compared to the 42 benchmark, for the 10 countries requesting EU membership.

**Table 7: Institutional Backwards compared to the 42 benchmark**

Country	Institutional Backwardness to Reach the Total of 42	
	Points	Variation with respect to the point of departure
Hungary	9	27.3%
Czech Republic	9	27.3%
Poland	10	31.3%
Estonia	11	35.5%
Slovenia	12	40.0%
Slovakia	11	35.5%
Latvia	14	50.0%
Lithuania	16	61.5%
Bulgaria	19	82.6%
Rumania	19	82.6%

Data EBRD, based on Piazolo (1997), calculations CGP (FPA).

Thus, for Hungary integration will lead to a 9-point rise in the indicator, equivalent to a 27.3% rise. This will make it possible to expect an 8% advance in GDP ( $= 27.3\% * 29.58$ ), when only the  $\beta$  coefficient is taken into account ( $= 29.58$ ) of the equation which measures static institutional progress.

This method does not take into account any variations in the capital stock. In fact, high marginal productivity of capital will lead to a rise in the equilibrium stock of capital per capita, as shown in Equation (2) of the box. This additional dynamic effect is difficult to quantify.

Baldwin (1989, 1993), in studying the effects of liberalisation the European market in 1992, estimated this effect to be equal to the initial static effect. Accordingly, Piazolo (1997) considers that the overall effect on growth should be doubled, giving a 16% rise in GDP for Hungary. Estimates of the various effects of institutional progress on domestic product are summarised in Table 8<sup>14</sup>.

**Table 8: The Various Effects of Institutional Progress on Domestic Product**

% of GDP, Country	Hungary	Czech Republic	Poland	Estonia	Slovenia
The total static effect of the variation in the indicator of institutional change, on GDP	8.07	8.07	9.24	10.50	11.83
Total dynamic effect on GDP	16.13	16.13	18.49	20.99	23.66
Rise in foreign direct investment each year	1.82	1.78	2.61	4.14	1.1

	Slovakia	Latvia	Lithuania	Rumania	Bulgaria
The total static effect of the variation in the indicator of institutional change, on GDP	10.50	14.79	18.20	24.44	24.44
Total dynamic effect on GDP	20.99	29.58	36.41	48.87	48.87
Rise in foreign direct investment each year	3.05	6.55	7.3	10.17	10.84

Source: calculations CGP (French Planning Agency), from data by BERD and Piazolo (1997).

<sup>14</sup> Piazolo's conclusions (1997) are close of Sachs and Warner (1996), as well as those of Barbonne and Zalduendo (1997).



The total effect can be considered as a discounted gain for the CEECs, due to membership of the European Union.

The implementation of the *acquis communautaire* makes the CEECs' policies far more credible. The profitability of investments becomes less uncertain, which also raises their value. Thus FDI flows to the CEECs will accelerate, by about 2 percentage points of GDP per annum, for the most developed countries. Flows could reach 10 percentage points of GDP for the most backward countries like Romania and Bulgaria.

This study makes it possible to specify what is at stake with integration, and is much less normative than Baldwin *et al.* (1997). The latter involved forecasting the risk premium which ought to be deducted from the profitability of investments in the CEECs, or more precisely a fall of the risk premia to Portugal's rate. In contrast, Piazzolo's (1997) work stipulates the channel by which investment may be accelerated. In each case, the results are similar for the first wave of candidates, equivalent to an increase in growth of about 15 to 20%. The results of the Piazzolo study (1997) will hence be retained.

## 7. VERY SIGNIFICANT POTENTIAL FOR GROWTH

The two preceding sections concentrate on factors which could affect growth in the CEECs, taken as transition countries. As this transformation process advances, these factors should play less and less of a role in growth. For Fischer, Sahay and Végh (1998) the methodology employed to forecast future growth involves deducing such growth from past growth in the market economies. Using data available for the CEECs, future growth is predicted. To this end, an econometric equation is used, which is felt to follow the methods set out by Barro (1991) and Levine and Renelt (1992).

**Table 9: Two Growth Equations Estimated on Market Economies**

<b>Dependent Variable : Annual Growth in GDP Per Capita</b>	<b>Barro method</b>	<b>Levine-Renelt method</b>
Constant	0.0302	-0.83*
Initial per capita income	-0.0075*	-0.35*
Population growth rate		-0.38
Rate of primary schooling	0.025*	
Rate of secondary schooling	0.0305*	3.17*
Ratio of government spending/GDP	-0.119*	
Investment rate		17.5*

Source: Fischer, Sahay, Végh (1998).

\* coefficient significant at the 5% level.

These econometric estimates explain future growth using several variables. Countries that are most backward have a tendency to grow fastest, which is known as catch-up. The accumulation of human capital - measured by rates of schooling - is factor that favours growth. A high population growth rate is unfavourable to growth. Estimations for the CEECs are then based on existing data. Future growth calculations for the CEECs are presented in the Table 10.

**Table 10: Estimated Potential Growth Per Capita**

	Bulgaria	Estonia	Hungary	Latvia	Poland	Czech Rep	Romania	Slovakia	Slovenia
Barro method	5.06%	5.29%	5.19 %	5.48 %	5.54%	5.47%	5.61%	5.85%	5.35%
L-R method	5.31%	5.13%	4.74 %	5.73 %	5.06%	4.48%	5.85%	4.98%	4.71%

These calculations are obtained by applying the Barro method to an average level of current government spending, equal to 10% of GDP. The L-R method takes into account the average rate of investment, equal to 30% of GDP. These two variables are different from present values (respectively 18% and 22%), because the latter are still influenced by Soviet-style planning (in which public spending is high and private investment low).

Source: Fischer, Sahay, Végh (1998).

Table 10 indicates that growth may be expected to be faster than the world average, as this zone is far from its equilibrium path. This phenomenon falls under the heading of catch-up. The calculations would have been the same for any country with the same level of backwardness in its productive and human capital accumulation. The factors calculated by Piazolo<sup>15</sup> are then added to take into account the specificities of the transition countries, which will adopt western standards. Such an implementation of modern institutions is deemed to be positive. This provides estimates - if fragile - for growth, running at high rates of 5% and 6.5% according to the country in question.

**Table 11: Total Future Potential Growth Per Capita**

	Hungary	Czech Rep.	Poland	Estonia	Slovenia	Slovakia	Latvia	Romania	Bulgaria
Barro Method + Piazolo static	5,6	6,0	5,9	5,8	5,9	6,4	6,1	6,3	5,9
L-R method + Piazolo static	5,1	4,9	5,4	5,6	5,2	5,5	6,4	6,6	6,2

Source: Calculations by CGP (FPA) based on Piazolo (1997) and Fischer, Sahay and Végh (1998).

Such growth rates have already been observed during the 1990s in Asian countries, and in the industrialised countries after World War II. The European Bank for Reconstruction and Development concludes - based on similar lines - that the transition countries should experience growth of 4% to 7% per annum. The OECD (1998) is a little more pessimistic in its medium term scenario. For the period 2000-2003, it forecasts growth of 5.5% in Poland, 4.6% in Hungary and 2.4% in the Czech Republic.

Such levels have already been obtained by Poland and the Baltic States. Following its structural adjustment plan in 1995, Hungary may converge on such a level of growth. Among those countries where reforms are the most advanced, the Czech Republic is still in a contrasting situation, experiencing macroeconomic difficulties in the wake of the forex crisis in 1997. Since 1998, Bulgaria, where reforms have gone ahead the least, seems to be converging

<sup>15</sup> Just as the direct effect of variations in the Indicator of Institutional Change is complementary to such catch-up, so the additional effect is redundant. Hence it has not been included. This semi-effect of the Piazolo method is qualified as being static. The effect given by Piazolo is distributed here, in a conventional manner, over the number of years needed for convergence.

on a more stable path, which is not yet the case for Romania.

## **8. SOME POINTS CONCERNING EXCHANGE RATES**

Work on exchange rates, notably by Balassa, provides evidence of a relationship that makes it possible to determine what "normal" exchange rates may be for countries that are economically different. By using this method, it can be seen that the present situation is not one of "monetary dumping"<sup>16</sup>. Two arguments support this. The first stems from the effective rise in unit labour costs expressed in a foreign currency, over time. The second follows from the very significant trade and current account deficits.

Furthermore, the CEECs have little interest in devaluing<sup>17</sup>. Indeed, this is not just a question of external competitiveness, as foreign debt is denominated in foreign currency. Thus, a depreciation of a currency may improve the current account balance thanks to an acceleration of exports, but risks also leading to a re-evaluation of foreign debt. The net effect on the external accounts is uncertain. This argument is especially true for countries like Hungary, Bulgaria, and the Czech Republic (Table 12).

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<sup>16</sup> See Lahrière-Révil (1997).

<sup>17</sup> This argument essentially follows from Bénassy-Quéré and Lahrière-Révil (1998).

**Table 12: The Level of Exports and Foreign Debt Service for some CEECs, in 1997**

	Current Account	Exports as a % of GDP	Gross foreign debt as a % of GDP	Service costs of foreign debt, as a % of GDP
Bulgaria	2.4	63.7	88	11.2
Czech Republic	-8.4	62.9	45.3	7
Hungary	-4.2	44.6	62.2	11
Poland	-5.8	26.5	32.7	3.5
Rumania	-4.6	29.7	27.6	9.8
Slovakia	-10.1	64	56.2	11.2
Slovenia	-1.2	61.4	31.7	6

Source: Caisse des Dépôts et Consignations, quoted by Bénassy-Quéré and Lahrière-Revil (1998).

With debt service equal to 11% of GDP, a 10% depreciation with respect to the reference currency implies an increase in the cost of debt servicing of 1.2% of GDP. From another point of view, a currency depreciation improves external competitiveness. With an export rate of 60% of GDP and a price elasticity of 0.7 for exports and 0.5 for imports, a 10% depreciation will raise the current account balance by 1.2% of GDP. The impact of the depreciation is then practically zero, which is equivalent to saying that an improvement on the trade balance is wiped out by a greater deficit on the capital account (debt service costs included). The effect may even be negative for lower trade elasticities.

Countries experiencing faster growth should also see a faster appreciation of their real exchange rates, with the opposite trend applying to slow growth countries. It is possible to calculate the long run trend of real exchange rate appreciation. For the CEECs as a whole, this rate is in the order of 1.5% to 2% per annum<sup>18</sup>. In fact, it has been possible to observe a constant appreciation of the real exchange rate over the last years for the whole of the zone, due largely to disinflation policies.

A consequence is that growth expressed in constant euros is greater than growth calculated in constant national currencies, as the real exchange rate of these countries is appreciating. Thus, in constant ECUs, the growth rate of the ten candidate countries was running at 13.5% per annum for the period 1993-1997, as opposed to 4.5% in constant, local currencies over the same time.

## 9. THE RISKS OF A CRISIS<sup>19</sup>

In the opposing case of non-integration, there will be a shift to divergence. Capital will enter a lot more slowly into these countries. Also, due to balance of payments constraints, it will no longer be possible to exceed 4% growth without there being considerable risks of imbalance. The East European countries therefore would lose more than 2 percentage points in terms of growth<sup>20</sup>. Were access to the European market to be made difficult, then foreign

<sup>18</sup> This estimation is given in a report by the French Planning Commission, entitled "L'adhésion à l'Union Européenne est un puissant accélérateur de croissance à l'Est avec un effet retour positif à l'Ouest".

<sup>19</sup> See essentially Landesmann and Pöschl (1995).

<sup>20</sup> See the report of the French Planning Agency, op. cit.

investment would slow down and credit conditions would worsen. The stability of growth thus depends crucially on the likelihood and conditions of EU enlargement.

In terms of financial risks, the candidate countries must accept high current account deficits, within the perspective of catch-up. The whole enlargement strategy depends on maintaining the pace of high investment and the abundant supply of credit, without which the management of financial risks would run up against external constraints. The deficit will rise under pressure from imports, that are necessary to vital, structural adaptation of these economies, without such investments being able yet to contribute to the development of exports.

These current account deficits are possible because the capital accounts are in surplus. They should not be contracted strongly, because exchange rate policies in these countries are geared to strong price stability.

The deficit is fundamental. It makes it possible for the candidate countries to finance growth externally. It is mainly made up of investments which are undertaken in these countries by foreign, private companies and by the substantial private loans they may benefit from.

Yet the deficits require great care in reform, as any turnaround in the economic policy may lead to a switchback in capital flows. Up until now this risk has been limited, as the major share of capital transfers corresponds to direct investment, and not to portfolio investments in the financial markets of these countries. The East European countries have been less effected by hot-money finance, on average, than have the Asian countries. Hence they are less exposed to sharp turnarounds in the business cycle, though the risks of over-indebtedness should not be underestimated.

In particular, the inflow of capital would not be sustainable if it favours consumption rather than investment. Excessive current account deficits could also lead to problems with controlling the money supply and hence too inflationary pressures. This could threaten the good progress made on inflation, which was standing at 12.6% in October 1998, at an average rate for the CEECs (and at 8.9% when Romania's high inflation figures are taken out of the figures). These problems will continue to be important, because the CEECs are going to integrate with a group of countries that have a strong tradition of price stability. As a result, there is an optimum level which deficits should not exceed. It is all the higher if the reform process is well managed.

It is clear that if the potential high levels of annual growth are to be attained, with their corresponding high levels of current account deficits, it has to be accompanied by complete integration into the European Union and by structural reforms. I also necessitate positive expectations to be held by financial markets, which are themselves based on the credibility of local agents.

The structural nature of the current account deficits, which have already been sanctioned by crises in Hungary, the Czech Republic and Slovakia, raises the issue of the sustainability of the transition process as such, with respect to its schedule. However, the prospects held out for enlargement and integration in a wide and deep market make it possible to reduce the risks linked to it. Thus, in the framework of the enlargement negotiations, it is important to get rapidly to the point at which the enlargement and the integration of the CEECs into a stable economic space with institutional stability is certain, even if it does not take place immediately. The objective must be clear, even if the calendar takes into account delays necessary to adaptation.

## **10. THE EASTWARD ENLARGEMENT REQUIRES DETAILED BUDGETARY MANAGEMENT**

In Agenda 2000, presented in July 1997, the Commission proposed a financial reference framework for the years 2000-2006. It takes into account the outlook for enlargement by the Union in 2002. This framework was modified at the Berlin summit, the 24 and 25 March 1999, so that spending for the Fifteen will be lower. No changes were brought about concerning the six candidate states. Given progressive budget support and only a partial extension of the Common Agricultural Policy to the Eastern countries, the new framework will make it possible to finance the enlargement to a first wave of five countries in Central and Eastern Europe, as well as Cyprus, within the limit of the EU's "own resources", set at 1.27% of the total Union GNP.

The CAP reforms put forward by the Commission, and the non-inclusion of direct aid to Eastern Europe would make it possible to extend EU budgetary spending on the CAP to the East. The budgetary cost is cut by nearly two-thirds. But non-application is justified on grounds other than those linked to the budget. The agricultural prices in CEECs will increase. Therefore the main reason explaining direct aid by the EU-15 does not exist there. Transferring similar support to Eastern Europe is incompatible with the WTO Treaties, and the shock to collective welfare stemming from such loans is very painful<sup>21</sup>.

For spending on structural support in the East, aid by 2006 should account for about 4.2% of these 10 countries' GDP, which would correspond to about 5% of the EU-15 GDP at that time. The gross costs of enlargement are thus about 5% to 4%, or about 0.2% of the Fifteen's GDP. This level is not negligible within a context of budget restraint, but it remains modest. The figure must be compared to the ceiling on the EU's "own resources": 1.27% of GDP, and to national government spending which is equivalent to between 40% and 50% of GDP.

However, safe control of spending requires a precise framework of measures. As has been shown, the CAP is quite well hemmed in. Similarly, the ceilings on Community financing for structural supports (i.e. the second most important spending heading) also seem reasonable. The Commission has taken this problem into account and envisages placing a ceiling on grants to each beneficiary, equivalent to 4% of GDP, with reference to the highest weight of structural support in the GDP of present eligible member states.

The idea of a 4% budget ceiling was set out in the Agenda 2000, page 22: *"The rise in transfers to new member countries will be progressive to take into account their absorption capacity. In any case, the overall transfers of structural and cohesion funds should not exceed 4% of GDP of any present or future member"*. The 4% ceiling were retained for the Fifteen, at the last Council in Berlin, and have hence become a reference.

Contrary to what certain initial analyses have implied, this level of spending is quite well calibrated. More specifically, the Marshall Plan, which was implemented between 1948 and 1951, provided support for European reconstruction with a budget of \$13.2 billion, which was equivalent to 2.4% of the GDP of the countries concerned. It corresponded to 1.13% of American GDP, for the four years of the programme's existence. In terms of aid intensity, the European programme is thus 6 times more generous in terms of the GDP of the aid-providing

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<sup>21</sup> See French Planning Agency, op. cit.

countries, and 75% more important in terms of the receiving-countries GDP, which from the point of view of the CEECs is the only ratio that counts<sup>22</sup>.

Conversely, German reunification led to transfers to the new *Länder* of nearly 40% of their GDP, which in no way matches the case studied here. The CEECs will not benefit from the social advantages of a particular West European country. Indeed, in contrast to the new *Länder*, the CEECs will not merge with one or several present members of the Union. Nor will they enter a monetary union that would bring their wage levels up those of a Western country. This scenario is dangerous, as it would lead to worse unemployment given the CEECs lower levels of labour productivity.

To be sure, there is no magic figure that constitutes a limit on spending; no exact quantity is incontestable. But, thanks to a few simple indicators, it may be noted that it is difficult to exceed such a limit to spending. When the share of European credits in public spending exceeds 3% of GDP, then they reach very high shares of public spending of the same type (above 50%). The level of public spending in this specific area is then also very high, in the order of 7.2% of GDP in Greece and Portugal. This level is very important, because it only covers part of public expenditure, and excludes traditionally heavy spending budgets like education and health.

These are generally called the capacity limits of new members to absorb public aid, for macroeconomic, budgetary and administrative reasons.

Tighter control of spending is a crucial issue, as it will make it possible to perpetuate the cohesion policies of the structural funds. Indeed, depending on the design of rules for fund allocation, applying it equally to Eastern and Western country may lead or not too unsustainable budget pressure. One way for facilitating such greater control is to add the criteria set out at the European Conference in Berlin, relating to: national GDP, regional GDP, the level of regional unemployment, the ceiling expressed as a percentage of GDP (4%); and a second criterion relating to a ceiling expressed in Euros per capita.

More specifically, with growth in the CEECs of 4%, the cost of cohesion policy will exceed Euro 15 billion in 2008, and Euro 20 billion in 2015. But, as has been indicated above, these countries can grow at faster rates. Instead of the 4% rate adopted by the Commission, it is assumed here that growth in the CEECs will average 7%. For spending in this second scenario, the same profile for the share in GDP is used as provided in the *Agenda 2000*, up until 2006, with a 4% limit being set for 2007 onwards. As a result, the spending expressed in Euros is greater. It rises to Euro 16 billion, expanding to over Euro 20 billion by 2010 and Euro 30 billion around 2015. Spending growth is thus very high. If growth runs at 4%, then spending will increase far more slowly, barely rising above Euro 16 billion by 2015.

Some commentators, such as Martin (1998), suggest that spending should be limited by a per capita ceiling. As is shown in the Table 13, when Ireland is excluded as a result of reforms presently underway, the highest level will be reached by Portugal, with ECU 299 per capita. It would therefore be possible to fix a limit of Euro 300 per capita (in constant terms), as suggested by Martin. In this case, growth of 7% in Slovenia will bring aid up to its limit by 2004, i.e. before the end of the current financial outlook. The Czech Republic and Hungary will get to this level by 2007, and Poland by 2012. Only Estonia will not have reached this limit by 2015. In this case, spending will stabilise at Euro 18 billion.

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<sup>22</sup> The calculations are based on date of the Bureau of Economic Analysis of the Department of Commerce and on Delong and Eichengreen (1991).



**Table 13: Spending Levels for the EU's Cohesion Policy, Calculated in % of GDP and in Per Capita Terms for the EU-15 and the CEECS**

<b>For new Members, spending in 2006: For the former Members, in the 1993-1999 "package":</b>	<b>Structural policies/GDP (% of GDP)</b>	<b>Structural policies per capita (Euro per capita)</b>
<i>6 first candidates</i>	<b>3,3</b>	<b>179</b>
Austria	0,19	39
Belgium	0,18	34
France	0,22	43
Germany	0,21	45
Greece	3,67	284
Ireland	2,82	346
Italy	0,42	63
Netherlands	0,15	28
Portugal	3,98	299
Spain	1,74	181
United Kingdom	0,25	37
Total	0,51	75

Source: Eurostat, European Commission; calculations by the FPA-CGP.

Once a country has reached the Euro 300 per capita ceiling, its receipts no longer change, whereas its contribution to the Union continues to rise along with its growth rate. The net cost thus falls. This measure makes it possible to control very clearly spending on cohesion policy in the wake of Eastward enlargement, while at the same time providing the new Members with no less support than the former members, for a given level of development. If growth does indeed rise to 7% between the present and 2015, then Euro 9 billion will be saved per year. If growth turns out to be only 4%, then the saving will be Euro 3 billion.

Once Eastward Enlargement has been achieved, the net cost for the public finances of the Fifteen will be zero in the long run, and growth in the West will accelerate.

Cazes *et al.* (1996) have used the MIMOSA model to quantify the Eastward enlargement of the Union economically. This approach would appear to be pertinent to evaluating the effects on Western Europe. It also seems to us to be more suitable than that of Baldwin, François and Portes (1997). Indeed, it is not possible to observe precisely the distribution of gains within the European Union with their model. Such modelling is applied to two scenarios, which are now classic, namely free trade and advanced integration. The second scenario will be examined here.

The transfer of public funds is supposed to be equal to 0.2% of GDP per annum, a figure which is quite close to reality. It is assumed that there is a general improvement in the flows

of private direct investment. In this scenario, the flows may raise GDP in the Eastern countries by more than 1 percentage point<sup>23</sup>.

Structural funds finance productive investment, which translates into imports emanating from Western Europe. Public finances in the West benefit from such flows. Similarly, exports to Eastern countries make growth in the industrialised countries more dynamic, and induce a slight fall in the rate of unemployment as well as an improvement in current accounts (Table 14).

**Table 14: The Impact of an Integrated European Union Enlarged to the CEECs**

	<b>GDP</b>	<b>Current Account Balance</b>	<b>Unemployment</b>	<b>Public Sector Balance</b>
USA	0,4	-0,2	-0,2	0,1
Japan	0,0	0,7	0,0	0,0
<b>Germany</b>	<b>0,4</b>	<b>-2,0</b>	<b>-0,2</b>	<b>0,1</b>
<b>France</b>	<b>0,5</b>	<b>0,0</b>	<b>-0,2</b>	<b>0,0</b>
Italy	0,9	0,1	-0,6	0,1
United Kingdom	0,1	-1,6	0,0	-0,1
EU North	0,4	1,1	-0,2	-0,1
EU South	0,3	2,1	-0,1	0,0
EU-15	0,4	0,0	-0,2	0,0
CEECs	29,4	-4,5	nd	nd

Source: Cazes et al. (1996).

Returning to Piazzolo (1997), foreign direct investment rates with respect to GDP are three times as large. These models are relatively linear, making it possible to estimate the extra growth for 2012. Under total integration, the extra growth amounts to 1.5 percentage points of GDP for France and Germany, and about 1 percentage point for the rest of Europe.

The convergence of Eastern and Western Europe will thus take place via a strong acceleration in growth in the East, accompanied by faster growth in the West. Integration should therefore create jobs in the West as well as in the East<sup>24</sup>.

Going back to the estimates of Cazes et al. (1996), the initial budget cost (*ex-ante*) stands at between 0.2 and 0.24% of GDP for the EU-15. This gross cost has particularly strong macroeconomic advantages for the beneficiary countries. And for the contributing countries, the impact on the degradation of their current accounts is zero in the long term, while there is a positive effect on the growth of tax receipts.

## **11. THE RIGHT PREPARATION FOR MEMBERSHIP IS VITAL**

To limit the risks of a crisis as much as possible, governments in the region must provide tangible signs of the willingness to implement sustainable and **balanced policies**. After a series of far more ambitious reforms, the CEECs are in a far better position than Russia. Direct

<sup>23</sup> Given that membership delays are long, the effects will no longer be measured for 2002, but rather for 2012.

<sup>24</sup> For the trade aspects, see Freudenberg and Lemoine (1999), who provide a very complete overview of this issue.

investments reflect the confidence they command. The same is true for their credit ratings, attributed by financial institutions.

An integrated market can only function correctly, and the CEECs will only benefit from it fully if the rules are the same for everyone. Thus, the necessary convergence of legislation must be accompanied by the establishment of mechanisms that can fully implement such legislation. Furthermore, the conclusion of the European Council in Vienna, on the 11 and 12 September, underlined that: "Transposition of *acquis* is not enough, but must be followed by effective implementation. The establishment of administrative and judicial capacities is thus a prime aspect of the preparation of membership, while the existence of credible and operational structures and institutions is an imperative precondition to future membership. The Council stresses the necessity of paying particular attention, prior to membership, to the effective implementation of all the component parts of the Single Market, including the creation of an operational system for the control of state aid. The environment, the nuclear sector, justice and internal affairs are among the other sectors requiring particular attention".

The aid provided by the European Union will help accelerate the rhythm of convergence. The present reforms of the Community intervention instruments will strengthen the link between resources and priorities. Partnerships with a view to membership will also allow the CEECs to target their own efforts and priorities. Yet much remains to be done, as is indicated in the latest issues of the regular Commission reports looking at the achievements of each candidate country on the road to membership.

The agreement memorandum that aims at promoting aid linked to pre-membership, and which has been signed jointly by the Commission, the EBRD and the World Bank, sets out the principle of conditionality for aid provided to countries undertaking reform. The idea is to link aid to progress actually made in structural reform, the implementation of the *acquis communautaire* and macroeconomic stability.

Such a principle obviously raises the problem of the implementation of an appropriate policy, which cannot be restricted just to deficit limitation on current accounts, but which must strive to create and maintain a better macroeconomic environment for viable economic growth. In particular, it is necessary to verify that reforms are actually being implemented at the microeconomic level. Beyond this, it is important to establish strict mechanisms for assessing the effectiveness of public policy instruments.

Transition periods may therefore be requested both by CEECs (on measures concerning current account balances, private property, competition, the environment, social policy, and the co-financing of Community cohesion policy) and by Western countries (CAP) or by both (migration). Thus, the concept of "gradualism" in the integration approach in the European Union has been put forward. It is based, in particular, on past enlargements. The countries concerned have had the benefit of a long period of time to meet criteria permitting integration. Excessively rapid integration, coupled with generous public aid policies (Greece) seem to have been negative and have held-up necessary adjustments. Similarly, the integration of many countries has not been quick (United Kingdom, Portugal and Spain). Excessive haste in the vital preparation process for membership has shown itself to be counter-productive. However, it must be stressed that there is a contradiction between the long time schedules that have benefited certain countries prior to membership (during previous enlargements) and the pressure which is currently being put on new candidates to adapt rapidly as well as the pressure these countries are putting on Member States. Credibility concerning the prospects

for membership is more important than the date of membership: the negotiation strategy must absolutely support this credibility throughout this lengthy process.

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