STRUCTURAL UNEMPLOYMENT IN THE CRISIS OF THE LATE TWENTIETH CENTURY

A COMPARISON BETWEEN THE EUROPEAN AND US EXPERIENCES

Preliminary Draft

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Le chômage structurel dans la crise de la fin du XX^e siècle:
Une comparaison entre les expériences européennes et américaines

On connaît l'ampleur de la vague de chômage structurel pendant les années 1970, dont les effets se sont maintenus en Europe jusqu'à nos jours, alors que le taux de chômage s'est réduit depuis 1982 aux États-Unis. La rapidité du changement technique n'explique pas cette montée, car son rythme a été particulièrement lent en Europe et aux États-Unis (l'Europe rattrapant l'économie américaine). La cause du chômage structurel est la lenteur de l'accumulation, elle-même l'effet de la crise commencée dans les années 1970, liée à la baisse de la rentabilité. A ces facteurs se combinent des déterminants macroéconomiques et financiers. Les politiques néolibérales, notamment les hauts taux d'intérêt, ont renforcé et prolongé cette vague de chômage. Mais son évolution différentielle dans ces deux économies explique bien la spécificité américaine (où le progrès technique est nettement plus lent qu'en Europe depuis la seconde guerre mondiale). C'est la comparaison avec la crise de la fin du XIX^e siècle qui est la plus pertinente, et notamment l'étude de la sortie de crise résultant des effets bénéfiques sur le changement technnique de la révolution managériale au début du siècle. Des évolutions similaires sont peut-être présentement en cours, plus apparentes aux États-Unis, liées à la révolution de l'information.

Straigthforward questions concerning unemployment

1. *Was unemployment due to the rapidity of technical change (the rise of labor productivity)?* No, the growth rate of labor productivity, which measures the ability to produce with less and less labor, was *slow* since the 1970s in comparison to the 1950s and 1960s, when full employment was achieved. Yes, the large rates of unemployment in Europe in comparison to the US basically mirrors the difference in the growth rates of labor productivity, which was *low* in Europe, and *very low* in the US.

2. *What was the main cause of the rise of unemployment?* The slowdown of capital accumulation, which was itself a major aspect of the structural crisis of the 1970s.

3. *What caused the structural crisis of the 1970s?* The decline of the profit rate.

4. *What was the original cause of the profit rate fall?* The disappearance in the late 1960s and early 1970s of the favorable features of technical change (rapidity and forms) since World War II.

5. *Is this erosion of technical progress puzzling?* No, the actual puzzle is the records of the previous decades. They were the outcome of the managerial revolution in the early 20th century, a real transformation of relations of production within capitalism.

6. *What was the role of wages in the decline of the profit rate?* The growth rate of wages (total compensation) was "adjusted" with some delay to the diminished performances of technical change.

7. *What was the major policy development?* Fighting unemployment is not part of the program of finance. Around 1980, the fight against inflation was given a total preeminence, independently of its costs in terms of employment. Inflation was faught by large interest rates.

8. *What were the effects of this policy?* (1) inflation was defeated ; (2) firms, the state, households and Third-World countries went into debts ; (3) lenders became richer, poor people poorer ; (4) welfare expenses were reduced on the pretext of deficits actually caused by interest rates ; (5) the effects of the low profit rate on unemployment were amplified and prolonged, despite workers concessions.

9. *Did monetary and exchange rate policies in Europe aggravate unemployment?* Yes, a strong pressure was placed on the general level of activity in Europe, with comparatively high exchange rates (for some countries) and a restritive monetary policy devised to maintain very low levels of inflation and to contain the public debt. Maastricht criteria are at issue. These policies had a negative impact on investment, therefore on employment.

10. *Is a recovery under way?* Substantial symptoms are apparent, and confirmed by the most recent data now available for the US.

11. *Would such a recovery in Europe restore employment if it were confirmed?* Yes.

12. *Could this recovery benefit workers?* Yes, if they demand it.

13. *Could the structural crisis of the 1970s rebound into a major clash, as did the crisis of the late 19th century into the Great Depression?* Yes, if finance does not behave. In case of emergency, finance will immediately call for state intervention which should be able to stop the slide.

INTRODUCTION

The large and lasting wave of unemployment that infected the developed countries is of major proportions. It is also a challenge for economists. There are similarities among countries, but also differences. Moreover, each decade had its own traits. The impact is diffferent for the various categories of workers, male, female, young, old, etc. It also cannot be understood in isolation. Everything is potentially important : technology, finance, new rules on the labor market, globalization, etc. Where to begin and where to end ?

This paper does not begin with the orthodox dogma that the causes of unemployment lie in the obstacles to the mechanisms that supposedly ensure the clearing of the labor market.[1] We will not discuss what would happen if workers always allowed wages to decline to alleged "adequate" levels. There are two basic reasons to this choice. First, realistically workers do not behave in this manner. We can surmise that wages would not have grown much historically, if workers always complied with the requirements of profitability. In spite of large concessions during the last decades of crisis, in terms of wages and working conditions, unemployment still exists in Europe and, as we will contend, if unemployment declined in the US, it is not because labor became more flexible but for other reasons. Second, the deflationary consequences of wages adjusting downward during recessions are at issue. They have already been the object of much academic discussion, at least since the Great Depression of the 1930s.

Our point of departure is different. It is that the problems in our economies, and their solutions, are the expression of the evolution of capitalism, the shock of productive forces against relations of production, their metamorphosis, class struggle, and the non-autonomous role of the state in these transformations. In the same tradition, we believe that much attention must be paid to the movement of the important variables accounting for technology and distribution, in relation to other categories of phenomena : economic in the strict sense, institutional, and political. Obviously, the present paper does not accomplish the entire task.

This paper combines two distinct approaches :

1. *Measurements*. The analysis is based on a rather extensive use of data series made available by national accounting frameworks and the OECD. The investigation of each field, considered in isolation, is rapid. What we want here is to provide an idea of the broad picture. Section 1 summarizes the analysis, and more details are given in appendices at the end of the paper.

2. *History*. Interpreting recent trends and their possible outcomes is a risky business. Of course a thorough knowledge of present transformations is essential. But much can also be learned from history. There is no necessary reason that history should repeat itself, but it does to a surprisingly large extent ! This is the purpose of section 2. The reference to the past is limited to the case of the United States.

1. For such a demonstration see BEAN C.R. 1994.

1 - THE BREAK OF THE 1970s. RECOVERY ?

We first discuss unemployment as a component of the structural crisis that affected major developed countries since the 1970s. What was the size of unemployment, its profile over time, its specific features and the United States (US) and Europe ? (This study only considers France, Germany, Italy, and the United Kingdom (UK), later denoted as "Europe".) We show that the rate of accumulation is crucial in this analysis. This investigation must, however, be supplemented by that of the historical trends of technology and distribution, in particular the decline of the profit rate. These trends explain the slowdown of accumulation, and account for the differences between Europe and the US, which are due to the specific features of technical change. This is the object of the second section. We then show, in the third section, how the policy of high interest rates accentuated the effects of the crisis, with consequences up to the present. Finally, a last section discusses the likelihood of a recovery. We contend that the "fundamentals" support this hypothesis. Whether all categories of the population will eventually benefit from such a recovery is another issue.

This study does not question standard statistical figures as used within national accounting frameworks or OECD data bases. As is well known, depending on measurements, the unemployment rate in the US may vary between 5.4% and 10%. Being employed does not mean a satisfactory standard of living for workers, as well as satisfactory working conditions. A very large fraction of employed persons live below the poverty threshold, work less than they want, and under precarious conditions. This study is based on the conviction that already a lot can be derived from standard statistics.

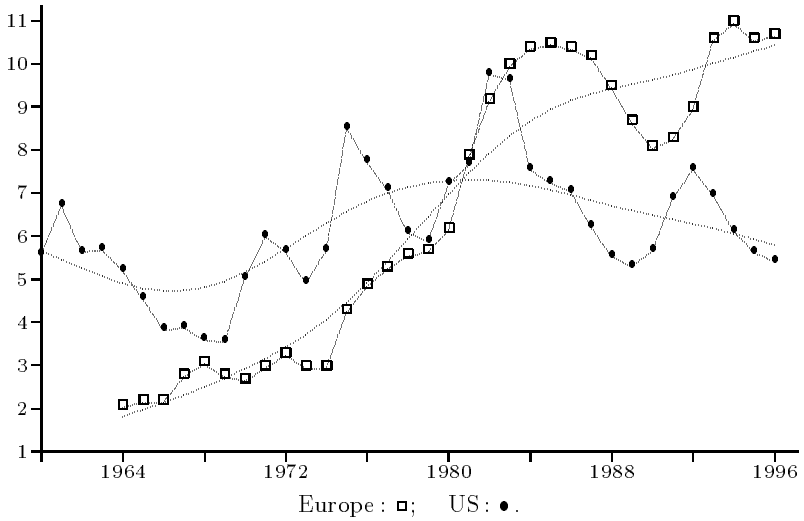
1.1 Unemployment in the Structural Crisis of the 1970s

The basic characteristics of the wave of unemployment are well known.[2] As shown in figure 1, unemployment rates soared in Europe[3] and in the US in concert, from approximately 1973 to 1982. The size of the increase was similar in the US and Europe. The unemployment rate in the US reached a maximum of 9.7% in 1982, when the figure for Europe in this year was 9.1%. A sharp divergence in the two evolutions was then observed. The US rate began its decline, returning to levels similar to those observed in the 1960s, while Europe fluctuated at a high

2. The analysis in this section relies on Appendix I.
3. This is the only figure in this paper where all OECD European countries are considered, instead of the four countries.

Table 1 - Unemployment Rates in 1996 (%)				
France	Germany	Italy	UK	US
12.4	10.3	12.2	7.6	5.4

Figure 1 Unemployment Rates in the US and all OECD European Countries (%)



level with a maximum of 10.9% in 1994. Finally, unemployment rates in 1996 are as shown in Table 1.

Consider the overall movement of these two rates for the US and Europe, the trends of "structural" unemployment, abstracting for shorter fluctuations (concentrating on the trend lines in figure 1). While the first episode of the drama was approximately the same in the two countries, the second act was quite different. Thus, a double question is posed :

- How can we account for the simultaneous rise, common to all countries ?
- How can we explain the following divergence, in particular why did the US fared better than Europe concerning unemployment since the early 1980s ?

The first issue suggests a global approach in which we abstract as much as possible from individual differences. In the second case, the specificity of the US economy in comparison to Europe becomes a central issue. Still, each European country has its own traits.

There is obviously no "explanation" of unemployment in isolation. The wave of structural unemployment that affected Europe and the US from the 1970s onward can only be understood as one component of a broader phenomenon, the

structural crisis of the 1970s-1990s. In a rather short period of time, many things went astray after 1970. The accumulation of capital and the growth of output underwent a considerable slowdown ; comparatively frequent and severe recessions occurred ; inflation soared ; the growth of labor productivity was eroded ; the profit rate declined ; real wages entered a long period of stagnation.

It is difficult to pinpoint in such a system of interrelated phenomena any single factor as a *cause*. In our opinion, *the decline of the profit rate*, however, has a special explanatory power and will be at the center of our investigation. The reference to the declining trend of the profit rate raises several methodological issues. It has often been used dogmatically by Marxists. It is also clear that Marx's demonstration in *Capital* does not fully measures up to his remarkable insight into the features of technical change and distribution within capitalism. Nonetheless, we consider it as a very powerful tool in the analysis of capitalism.[4]

Why is the profit rate so important to capitalism? Through what mechanisms is its influence exerted ? It is rather intuitive that large profits in comparison to the funds invested in a business are favorable to the accumulation of capital ; new investments are financed out of retained earnings and present profits augur well for the future. In turn, the construction of new productive capacity conditions the growth of output. The link between profitability levels and the instability of the general level of activity is more difficult to trace. Diminished profit rates reduce the cash flow of firms and put pressure on liquidity ; they tend to react more sharply to disequilibria (such as a drop of demand) ; in this context of general "nervousness", the macroeconomy becomes jerky. Concerning wages, the resistance of firms to the pressure for higher wages and better working conditions from workers is increased in period of low profitability ; firms actually fight to diminish the cost of labor and obtain more favorable employment conditions from the workers ; large rates of unemployment tilt the balance in favor of employers ; the rise of the purchasing power of wage-earners is consequently eroded or offset ; actual declines might finally be imposed. There is a link between a stagnating labor cost and technical change ; the stimulus to improve labor productivity is weakened.

The crisis of the 1970s was the outcome of a longer evolution. Abstracting from differences in timing between the US and Europe, unfavorable trends of technology and distribution could be identified since the 1960s. Besides the slowdown in the growth of labor productivity and the declining profit rate, one central feature was the increasing "burden" of fixed capital in comparison to labor and production.[5] Such a pattern of evolution is reminiscent of that described by Marx in Volume III of *Capital*. We denote this as a pattern *à la Marx*. It was also part of Marx's analysis that such trends would lead to crises. As we will show in section 2, two

4. See DUMÉNIL G., LÉVY D. 1993 and 1996. In these studies, we discuss the origin of the bias of technical change *à la Marx* within capitalism, as well as the consequences of actual declines of the profit rate.

5. This can be measured by the ratio of fixed capital (after correction for inflation) to the number of hours worked, *i.e.*, the capital-labor ratio ; or the ratio of output to fixed capital, *i.e.*, capital productivity.

such trajectories have been observed in the US economy since the second half the 19th century, both followed by a structural crisis.[6]

1.2 The Fragile Dynamics of Employment

Unemployment not only depends on the evolution of employment, it is also a function of the profile of the labor force. The relationship between employment and the labor force is complex, because they are interdependent. When employment approaches the limits of the labor force, as in the 1960s, several adjustments come into play to increase the population available for employment (immigration, participation of women to the labor force, etc.). Symmetrically, when unemployment develops for long periods of time, as in the 1980s, the labor force tends to contract. People are discouraged from seeking employment, etc. This study does not investigate these relationships, but only considers the impact of basic economic evolutions on demand for labor.

The maintenance of full employment is a difficult process in which the major economic variables and many institutional and policy mechanisms are implicated. The first section below discusses the role played by the major variables accounting for accumulation and technical change in the dynamics of employment and unemployment. The second section considers the consequences of the structural crisis, which unsettled the earlier fragile equilibrium. The third section stresses the important differences between the US and Europe with respect to technical change, quite slower in the US, as Europe was catching up with the US, and the ensuing advantage for employment in this latter country.[7]

1.2.1 Accumulation, Technology, and Employment

The chain that links capital accumulation to employment (and finally unemployment) occurs through the capital-labor ratio, a measure of the mechanization of production, and the duration of labor.[8] In terms of rate of variation, this chain

6. The existence of a downward trend of the profit rate in Europe in the late 19th century is not well documented. Most economic historians agree, however, concerning the existence of a "great depression" at the end of the 19th century. We also believe that there were some grounds to Adam Smith, David Ricardo, and Karl Marx insights of a decline of the profit rate during the 18th and 19th centuries. Precisely during which period? Was there episodes of recovery? Nothing has been firmly established in this respect.
7. The analysis in this section relies on Appendices II and III.
8. The basic relationship is:

$$\text{Employment} = \text{Capital Stock} \frac{1}{\frac{\text{Capital Stock}}{\text{Total Hours}}} \frac{1}{\text{Duration of Labor per Worker}}$$

is as follows:

Growth Rate of Capital
(Growth of Productive Capacity)
−
Growth Rate of the Capital-Labor Ratio
(Mechanization)
−
Rate of Variation of the Duration of Labor
=
Growth Rate of Employment

Thus, independently of the evolution of the labor force, accumulation, technical change and the duration of labor are all at issue. Consider, for example, the case of Germany in Table 2 that displays these rates of variation for two periods of time, before and after 1973.

Table 2 - Average Rates of Variation (% Per Year)
Germany

	1960-1973	1973-1993
+ Capital	5.58	2.86
− Capital-Labor Ratio	6.94	3.26
− Duration of Labor	−1.10	−0.63
= Employment	−0.26	0.24

These figures show that full employment or unemployment follow from very fragile dynamic adjustments. The average rates of variation of employment were less than .3 per cent. They resulted from differences between rates of variations that were more than *ten times larger*. Consequently, any small dislocation between accumulation, technical change and the duration of labor has a large impact on the evolution of employment.

As is intuitive, insufficient growth of employment of .5 percent causes, independently of other changes, a 10% additional unemployment in 20 years! *This means that a rate of accumulation .5% above what it was in Germany (compared to an average of 2.86% after 1973, and 5.58% before), from the 1970s onward, would have eliminated unemployment in this country.* The same result would have been obtained with a growth rate of the capital-labor ratio .5% below what it was (compared to 3.26% after 1973 and 6.94% before).

1.2.2 The Shock of the Crisis

Within this framework of analysis, we can address the first question raised above concerning the simultaneous rise of unemployment during the 1970s, comparing the role of accumulation and technical change. Our answer is unambiguous:

There was a structural crisis, linked to a specific pattern of technical change — the disappearance of its earlier favorable features — leading to a decline of the profit rate. One major manifestation was the slowdown of accumulation. Because of this sluggish accumulation, insufficient jobs were created. The cause of unemployment was not the acceleration of technical change, since, in all countries, technical change slowed.

Other competing explanations can also be dismissed. It was not the lack of demand, since, with some qualification for short periods of time (as presently in Europe), productive capacity was used normally in the average. Labor was forced into large concessions : precarious and part-time employment, stagnating wages, diminished protection, etc. These concessions could have been even larger, but their limits must not be mistaken for the causes of the crisis. Conversely finance took advantage of the crisis to strengthen its grasp on society in general.

The history of capitalism shows that there is no automatic adjustment of the variables that ensure full employment. The perturbation that occurred during the last decades was actually rather small, and states were not able — in all countries in the 1970s and early 1980s, and in Europe to the present — to make the necessary adjustments. A "little" stimulation of investment, of research and development, a degree of industrial policy would have been required. The program of finance does not exclude the intervention of the state, *via* legislation and policy. The new pro-merger attitude provides a striking example of such intervention. The same is true concerning research programs, in computer technology, for example. *But these policies are not targeted at full employment.* Full employment will perhaps come in time, when firms' prosperity is reestablished !

1.2.3 Catching up

We now turn to the second question raised above : Why did the US fare better than Europe concerning unemployment after 1982 ? In a nutshell — abstracting from policies and politics, and considering only macro variables — the answer is simple :

There was more unemployment in Europe after 1982 because technical progress was more rapid within that European countries catching up with the US (more mechanization, faster growth of labor productivity).

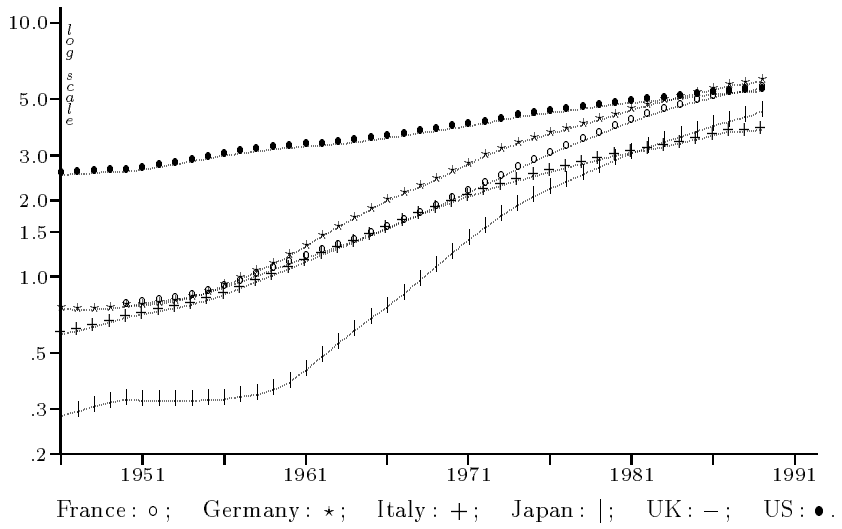
It was not because of the record performances of the US concerning technical change, but quite the opposite. It was not because the US grew faster than Europe, even in recent years, since growth rates in the US were not significantly larger.

A key aspect in the analysis of technical change in major developed countries since World War II is *catching up*. Since the war, European countries (and Japan) were gradually filling the gap that separates them from the US. This is true for technology, management, wages, financial structures, etc. There is a very spectacular convergence of major developed countries. The term *catching up* does not imply that these countries are simply copying the US model. There are obviously

several creative elements in this process. In a world of multinational corporations, innovation goes around the world in every direction.[9]

Figure 2 provides a striking illustration of this process. The variable displayed is the capital-labor ratio (the stock of fixed capital in volume divided by the total number of hours worked). It is a straightforward indicator of mechanization. The convergence is stunning. The series come from Angus Maddison's data base (MADDISON A. 1991 and 1993).[10] The catching up gathered momentum around 1960, and remained very strong until the mid-1970s. Then the structural crisis is manifest, with its slow technical progress. Although this study excludes Japan, the series for this country is plotted because of its dramatic character that strengthens the general argument.

Figure 2 The Capital-Labor Ratio in Maddison's Series



The main difference between the US and Europe concerning unemployment lies in the unequal rhythms of mechanization depicted in figure 2. Combining the European accumulation of capital with the profile of the American capital-labor ratio increases dramatically employment in Europe.[11] !

9. Catching up also does not mean necessarily that the further behind a country was from the US, the more it progressed. Obviously, we consider here a group of developed countries. This convergence is not a worldwide phenomenon as is well know.

10. The series ends in 1989. For recent years, see Appendix III.

11. Between 1973 and 1992, the ratio of capital to employment increased by 1.3% in the US and 2.7% in the four European countries. If technical progress in these countries had paralleled that of the US, *i.e.*, if no catching up had occurred, with no consequence on accumulation, then employment in these countries would have reached 128.8 million, in excess of 30 million of present employment, also well above the labor force.

This analysis must not be confused with the view that unemployment in the recent decades was caused by the speed of technical progress. Looking at figure 2, it is difficult to conclude that the wave of structural unemployment that developed since the 1970s was linked to rapid technical change. Globally, a central feature of the crisis was the slowdown in technical progress (notably the famous productivity slowdown). The rhythms of technical change explain the difference between the US and Europe, not the aggregate phenomenon.

This analysis stresses a major feature of the present situation in the most developed countries. Once the choice for free trade and free capital mobility has been made, European economies must adjust, as fast as possible, to the most advanced technology and management. Improving their technology they create unemployment by another channel. The moral of the story is as follow: *It is not good to catch up in times of structural crisis.*

There is obviously no automatic link between catching up and unemployment. After World War II, US technology was dramatically ahead of that of Europe. The capital-labor ratio in the US was four or five times larger than that of Europe. The catching up was realized in a context of growth, in which state intervention played a crucial role. European states conducted active industrial and macro policies to stimulate development. Governments seized direct control of some segments of the economy. These countries enjoyed a rather large degree of autonomy, thanks to the Keynesian framework prevailing in those years, both domestically and internationally. Inflation was tolerated. The general circumstances were quite different during the last decades, under the pressure of international competition.

1.3 The Rule of Finance

Independently of the resistance to policies concerning unemployment, the rule of finance was also directly felt within its own field. We now turn to this issue.

The financial picture of the latter decades is not less complex than that obtained for technology and distribution.[12] In a sense, it is less "fundamental", but it is also very important. Our major thesis in this study concerning monetary and financial mechanism is as follows:

The effects of the structural crisis in the 1970s, as it can be accounted for by the evolution of technology and distribution, were prolonged to the present by the policy of high interest rates and the subsequent indebtedness of firms.

This influence occurred primarily through the impact of interest rates on investment. The rise of interest rates discourages new borrowings and, therefore, investment. This is, however, only one aspect of the problem. Firms always hold a certain amount of debt. When old debts come to maturity, they can either be renewed at a larger cost, and firms go into greater indebtedness, or these debts

12. The analysis in this section relies on Appendices VIII and X.

can disappear without compensation. This latter outcome is also detrimental to accumulation.

The sudden rise of real interest rates after 1979 is well known. In the 1970s, during the first steps of the crisis, traditional demand policies were used. They had been very successful during the 1960s in stimulating activity, investment, and growth, but the situation was different after 1970. Inflation rates soared. A new phenomenon appeared, called *stagflation*, as inflation rates became larger during recessions. In 1979, in the US, a sharp policy about-face occurred. Monetary authorities decided to fight inflation at any cost. Instead of directly rationing credits, the choice was made of allowing interest rates to rise at unprecedented levels. (As we will see this policy gave finance significant advantages, independently of the fight against inflation.)

Looking at the longer picture, long-term interest rates (corrected for inflation, *i.e.*, real interest rates) fluctuated around 2.2% until 1970, then declined dramatically to negative values, and finally soared after the 1982 recession to reach a plateau of about 5.2%. There is no clear worldwide decrease in recent years. The same observation can be made for short-term interest rates, except for the US short-term rate that declined below 2% since 1991.

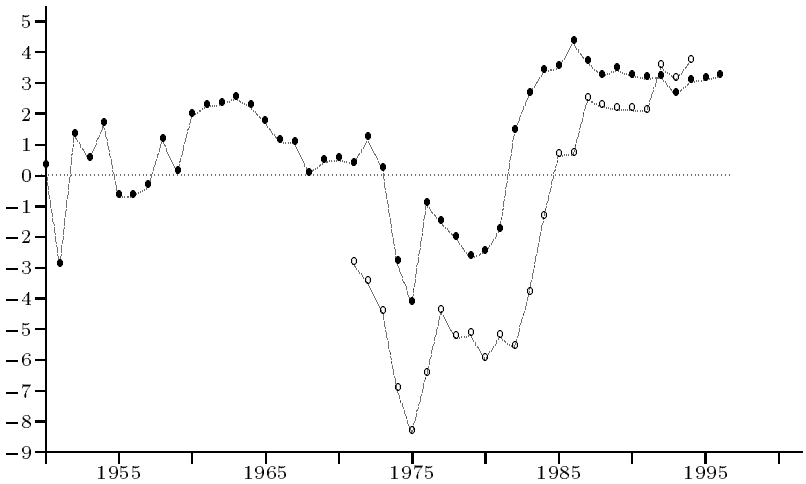
It is not surprising in this context that interest payments encroached progressively, more and more, on the profits of non-financial enterprises. It is hard to imagine to what extent non-financial corporations were hurt by the rise of interest rates simultaneous to the decline of the profit rate. In 1982, the profit rate before interest payments was so low that more than 80% of profits in France and Italy were, for example, pumped by interests. Only the new rise of the profit rate (before interest) allowed for some relief. It is also possible to relate the mass of net interest paid by firms to their capital stock. This ratio measures the number of percentage points of profit rates lost as a result of indebtedness. In France and the US, where this ratio can be computed, it displays an upward trend. No restoration is clearly apparent up to 1990. Then a sharp decline is observed in the US, related to the decline of interest rates.

It is also useful in this analysis to consider the present burden represented by interest payments to the debt stock held by enterprises, the ratio of *interests paid* to the outstanding stock of debts. This variable can be called the *apparent interest rate*. Figure 3 presents its profile (corrected for inflation) for France and the US.[13] It appears strikingly in this figure that the real cost of holding a debt remained historically high in both countries since 1979.

Under such circumstances, it is not surprising that firms primarily used their cash to pay back these debts. This is clearly confirmed by the recent evolution of the rate of self-financing of investment. In both France and the US, this rate

13. The average values of this rate may appear low. First, they are corrected for inflation. Second, important fractions of the debt considered, such as trade credit, do not pay interests or at a very low rate.

Figure 3 Real Apparent Interest Rates on the Debt Stock



remained above 1 since 1986 (1.27 in France in 1994). With the new recession following the "boom" around 1990, most self-financing rates reached similar levels. It is *to the present* that the policy of high interest rates prolonged the effects of the structural crisis !

It is not difficult to imagine the immediate benefit of finance in this transfer of profits from non-financial enterprises, *via* interests. But this mechanism also borrowed tax channels. The policy of high interest rates, besides its ruinous impact on Third-World countries, actually *caused* public deficits—and not the reverse. When the flow of interests paid is subtracted from state expenses, public finance is in balance, sometimes above, sometimes below equilibrium, depending on business-cycle fluctuations. States still held significant debts when the new policy was adopted after 1979. The short-term securities, which financed a large fraction of these debts, were renewed at the new high cost. No special device was implemented to shelter public finance from high interest rates. Although this is only indirectly related to unemployment, this is also part of the overall picture.

Another component of this analysis refers to the new financial structure that emerged under the leadership of finance, to which we will return in section 2. We only focus here on a few quantitative aspects of this analysis. Although difficulties of measurement are particularly acute in this respect, a new feature of capitalism appears strikingly in the financial accounts of non-financial enterprises. A new network of financial relationships is progressively established. Firms hold larger and larger portfolios of shares of other corporations. This is simultaneously the effect of more tight financial relationships (linked to the new wave of mergers and

financial agreements) and standard financial investment. In the US, non-financial enterprises have been consistently developing financial investment in shares or any other financial investment, paralleling their own traditional activity. This phenomenon is linked to the new prevalence of large interest rates. It seems clear that the strong heterogeneity among firms and the new financial network is central in this evolution. Large corporations, for example, enjoy a privileged access to credit channels, and they can lend under more favorable conditions to other firms (or take hold of them). The size of financial relations among firms of a same group is also well known. The impact of these new trends on investment is difficult to assess. Do firms arbitrate in favor of financial investment, at the cost of real investment ? One should at least keep in mind that reciprocal lending does not create profits. But lending can transfer substantial profits from one sector of the productive system to another.

1.4 Recovery ? Out of the Crisis with the Information Revolution ?

As time passes, it becomes more and more obvious that something fundamentally changed in the aftermaths of the 1982 recession.[14] Is it a period of stabilization or recovery ? It is difficult to answer this question in a straightforward manner. The situation is different in the various countries, and the picture strongly depends on the variables considered. It is also not easy to define a straightforward indicator of a recovery from a structural crisis, even limiting the investigation to technology and distribution. Is technical progress at issue ? Is it distribution ? In this latter case, the question is posed of the beneficiaries of the recovery : Is a rise of the profit rate with stagnating wages a recovery ?

Several observations emerge :

1. There is no improvement concerning wages, and the same is true for unemployment in Europe. The growth rate of labor productivity is still low. In the manufacturing sector of the economy, the profit rate stagnates at its present low levels. Capital accumulation and the growth of output are still slow, and the US is no exception in this respect.

2. A number of signs of improvement are, however, evident. The productivity of capital is increasing. *The profit rate is on the rise*[15] (also the share of profits in some countries).

This restoration of the profit rate is illustrated in figure 4 for the corporate sector in the US. Two measures of the profit rate are plotted, the ratios to the stock of fixed capital of either profits in the broad sense (subtracting only the cost of labor from the total product), or after taxes (indirect and direct) and net interests. The recovery is striking in both cases, in particular for the first measure.

14. This section relies on Appendix VI.
15. For *All Industries* (to be defined), not in Manufacturing.

Figure 4 The Profit Rate in the US Non-Financial Corporate Sector

Net Domestic Product minus total labor compensation over fixed capital stock, prior to taxes and interests payments (——), and after (— —)

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A process of economizing on fixed capital is presently under way. With stagnating wages, it has favorable effects on the profit rate. To date, this recovery did not materialize into faster accumulation (and growth). Consequently, no decline of unemployment is observable in Europe.

One clue into the interpretation of this recovery is provided by the analysis of particular industries and goods. *The restoration of the productivity of capital relates to the information revolution.* Its magnitude is manifest in the proportions of the various components of investment. From 1970 to 1996, the share of information (computers, communication, photocopy) investment, in constant dollars, rose from 5% to 42%. This increased used of information technology was paralleled by a sharp decline of the relative price of this category of equipment.

As was noted in the previous section, this restoration in the US also affected the financial situation of firms, in rather sharp contrast with the European countries. This is particularly clear in the relaxation of the proportion of net interests in profits.

Overall, the mixed picture of recent trends is puzzling. The comparison with the recovery from the structural crisis of the late 19th century provides a very helpful benchmark in its interpretation. We will return to it, after a brief historical survey of this period.

2 - ONE CENTURY OF US ECONOMIC HISTORY. DOES HISTORY REPEAT ITSELF ?

The specter of the Great Depression is certainly the most frequent reference to the past in the analysis of contemporary capitalism. This will also be a crucial part of this analysis, but much attention will be previously devoted to the crisis of the late 19th century.

The first section describes the crisis of the late 19th century and the way in which it was superseded. The similarity between the two crises is very strong. The second section is devoted to this comparison. Similar trends were observed in technology and distribution in the late 19th and 20th century, with the same decline of the profit rate. The recovery from the first crisis, at the beginning of the century, resulted from the reversal of the downward trend of capital productivity, itself the expression of a technical and organizational revolution, the managerial revolution. It affected all aspects of the economy. Does the present transformation in management, with its information technology, foretell a similar restoration ? This is the object of the second section. The third section is devoted to the lessons that can be drawn from the Great Depression, in particular concerning policy. The last section addresses the political issue. What was the role of the labor movement? How did it relate to internal contradictions within ruling classes ? How can we interpret the new conservative trends in this context[16] ?

2.1 In and Out the Crisis of the Late 19th Century

There are many similarities between the crisis of the 1970s and that of the late 19th century. Both technological trends and institutional transformations were involved. The most appealing aspect of this comparison is, however, the manner in which the earlier structural crisis was overcome. Can we surmise that a similar evolution is presently under way? A brief sketch of the crisis of the late 19th century is first at issue.

Like the crisis of the 1970s, that of the end of the previous century came in the wake of a trajectory *à la Marx*, in particular a declining profit rate. This is well illustrated in figure 5 that displays a broad measure of the profit rate since 1869.[17] The two declines of the profit rate are apparent on this figure, prior to

16. By *conservatism*, we refer to what is called *neoliberalism* in Europe. The term *conservatism* is rather conventional, but does not do justice to the complexity of the phenomenon.

17. The profit rate in this figure is the ratio of *the Net National Product minus total labor compensation* to the *stock of fixed capital*, for the total private economy. Profit taxes and indirect business taxes are not deducted, neither interests.

Figure 5 The Profit Rate in the US (1869-1993)

the two structural crises. Abstracting from the Great Depression, the period from World War I to the first decades following World War II was one of recovery.

With the exception of inflation, the other manifestations of the crisis of the late 19th century were similar: (1) a slowdown of accumulation; (2) increased instability (culminating in the depression of the 1890s); (3) dramatic unemployment rates (above 20%); (4) stagnating labor productivity and real wages.

One well-known feature of the period was the competitive rivalry among enterprises. The late 19th century was the period of cartels and trusts. The mechanization of production during the previous decades had already led to larger production units and firms. Facing declining profit rates, firms attempted to protect themselves from the rigor of competition by various types of agreements. Large trusts became a major object of discontent at the end of century. The Sherman Act was passed and was followed by a series of new legal devices in an attempt to curb agreements.[18]

Beyond competition, the real issue was, however, the development of the framework of modern capitalism, involving new relations of production. Despite antitrust legislation, a large merger wave occurred at the turn of the century.[19] This period is often referred to as the *corporate revolution*, in relation to the emergence of large corporations. One basic feature was the separation between *property* and

18. A more detailed analysis and references to the literature are given in DUMÉNIL G., GLICK M., LÉVY D. 1997.

19. Most analysts of the period contend that antitrust legislation actually contributed to concentration. Forbiding *loose consolidation* (cartels), it favored *tight consolidation* (corporations) (DUMÉNIL G., GLICK M., LÉVY D. 1997).

management. A first component of this transformation was the rise of large finance and its relation to industrial firms. This is the property side of the picture. A second basic aspect was the rise of large corporations, with their hierarchical management by salaried workers. In relation to this new form of management, the period is also characterized as a *managerial revolution*. The terminology *corporate revolution* specifically refers to the institutional form in which property rights were exerted and the new relationship between managers and owners ; *managerial revolution* emphasizes the transformation of organization, the new efficiency of business staffs.

This set of production relations created the conditions for a recovery from the structural crisis. The efficiency of production was greatly increased. This can be analyzed in, at least, two respects corresponding to the corporate and managerial revolutions. The structure of modern finance and its relationship to firms considerably strengthened the efficiency of capital allocation. Large financial institutions were more able to actually assess and compare profitable outlooks for investment, to detect present profitable investments and future prospects for reorganization and technical developments. Even more radically, the managerial revolution materialized in a thorough transformation of technology and organization. The new "scientific" approach to management was targeted to improved profitability records. This was achieved by systematic economizing on expenses, and by the minimizing of the various fractions of capital (fixed capital, inventories, and liquidities). The most popular example is that of Taylorism within the workshop. The implementation of the assembly line provides the most telling illustration. Although it represented a paroxysmal expression of mechanization, the assembly line was devised to make the most effective use of labor. So far, the traditional forms of mechanization had been associated with the typical bias *à la Marx* in the composition of capital, toward comparatively larger stocks of fixed capital. Instead, the "consumption" of labor by the assembly line was so intensive that the capital-labor ratio only increased slowly. A totally new profile of technical change emerged. The ratio of output to capital began to *rise* during the first decades of the 20th century, radically inverting the previous pattern *à la Marx*. The rate of profit rose. This new course of events gathered momentum around World War I and consolidated during the 1920s. It was not interrupted but accelerated by the Great Depression and World War II, and culminated during the 1960s, as the new organization had pervaded, in those years, most of the economy. The earlier pattern of technical change was then reasserted from the late 1960s onward.

2.2 Twin Crises - Twin Recoveries ?

The crisis of the late 19th was followed by a restoration, not in the sense of a simple recovery of output after a recession, but as a thorough transformation of the workings of capitalism, new forms of ownership and new classes of managerial and clerical personnel. Can history repeat itself ? Despite the impact of interest

rates and indebtedness, the rise of the profit rate since the early 1980s could be interpreted as the first steps of a lasting movement upward of technology and distribution. Could this reversal of technical trends create the conditions for a new rise of wages and a tight labor market? A very optimistic diagnosis!

2.2.1 Technology and Relations of Production

Indeed, the similarities between the two periods are striking. In both cases, a period *à la Marx* was followed by a structural crisis; the size of firms was sharply increased (the new corporations of the early 20th century and contemporary multinational corporations); finance played a crucial role in the emergence of new social relationships.

But there are also basic differences between the two periods. The managerial and corporate revolutions coincided with an actual transformation of relations of production and the emergence of new classes, while the recent transformations are more in the nature of a quantitative change (in degree, intensity) of management technology, in combination with a reaffirmation of the *power* of owners over managers. One century ago, the managerial revolution initiated a sharp growth of managerial and clerical personnel, and endowed them with a relative autonomy. This evolution was reinforced by increasing managerial trends within the economy and society in general. The two World Wars and the depression strongly contributed to this evolution. Analysts of these transformations celebrated the birth of a new era, that of managerialism. In the 1960s, the managerial component in the US economy was so pronounced, that some writers, whose Kenneth Galbraith is the emblematic figure, hailed the end of capitalism. Profit was no longer at issue, but growth and the general welfare of the population! Although this statement was obviously exaggerated, it is true that the power of managers was large. The new trends in the last decades did not reverse the reliance on management but merely altered the distribution of power. The role of managerial and clerical personnel is still increasing, and even finance itself is managed by salaried employees. Yet, the control of finance over production firms was strengthened. Managers are voted out when they fail to act on the behalf of owners, and finance is playing a more active role. This is the basic meaning of the present transformation, the reassertion of what is called *corporate governance*.

Within the framework of basically unchanged relations of production the same two aspects as in the corporate and managerial revolutions are presently at issue:

1. Finance is active in seeking profitable opportunities, on a domestic as well as international basis. A new merger wave is under way since the early 1980s (echoing those of the turn of the 19th century and the 1920s).

2. If the most recent data in the US can be taken seriously, a wave of progress in organization technology is under way. It is supported by information technology. In some sense, it can be interpreted as a new stage of the managerial revolution. After the metamorphosis of production technology, scientific management is now

transforming itself. *Information technology is the specific technology of management.*

This is a first component of the present situation in which the comparison with the early 20th century is very helpful.

2.2.2 Big and Small Business

Another important lesson can be gleaned from the recovery following the structural crisis of the late 20th century. The restoration of technology affected unequally the various segments of the economy, resulting in a strong heterogeneity among firms. The traditional institutional framework of the firm of the 19th century survived within smaller firms, alongside corporations well engaged into the new organization and technology. Although competition policies could not stop the new tide, they probably slowed down its extension. The issue of competition, *i.e.*, that of the size of firms and of the financial structure of the production sector, were the object of a compromise in the early 20th century in the US. The rise of the large corporations was not stemmed by the antitrust laws and agencies. During the depression of the 1890s, a legislation actually favorable to mergers was passed and initiated the merger movement, precisely at the turn of the century.

The coexistence of these two segments of the economy was, in our opinion, a crucial factor in the Great Depression. When a recession and the collapse of the stock market occurred at the end of the 1920s, a large fraction of the productive system was potentially devalued. A lagging technology, as in the traditional sector, was no longer compatible with the new levels of wages. Only a very determinate and efficient macro policy might have stopped the collapse. Instead, the central bank acted along the lines of traditional orthodoxy (the policy of finance), *viz* attempted to stop the fall of the stock market and the collapse of the financial system, and let output drop.

Again the comparison with recent developments is telling :

1. The tension between smaller, domestic, firms and large multinational corporations reproduce, in a new context, the separation between the two sectors of the economy in the 1920s. This strong heterogeneity adds to the difficulties of measurement of recent trends since national accounting frameworks or OECD data bases do not provide series broken down by size categories.

2. When the crisis developed in the US in the 1970s, the first policy trend was toward *more* rigorous antitrust legislation. But the sudden turn to conservatism, the restoration of the power of finance, led to a complete policy about-face in the early 1980s. The earlier anti-merger attitude was transformed into a pro-merger stance. Despite the significant differences in the precise chain of events during the two structural crises, they finally both contributed to the promotion of the new framework of modern capitalism.

2.2.3 Revolutions in Money and Credit

History suggests a third reference concerning monetary mechanisms and the control of the macroeconomy.

The new structure of capitalist relationships at the beginning of the 20th century was accompanied by the "explosion" of monetary and credit relationships. Between the 1880s and World War I, the ratio of money (currency plus deposits) to production more than doubled (since then it remained approximately stable) ; the ratio of deposits to currency was multiplied by four, from 2 to 8 ; between 1921 and 1929 alone, it rose from 8 to 11. Thus, the early 20th century witnessed a complete metamorphosis of monetary and credit relationships, a movement that aroused much concern at the time. It is difficult to imagine from the view point of the late 20th century the significance of this movement. During those years, most analysts were reluctant to consider bank deposits as actual "money" ! The parallel with new monetary and worldwide financial relationships is easy to recognize. *Monetary and financial globalization represents a similar revolution.*

The stock market was at the center of credit and financial mechanisms at the beginning of the century. A second merger wave occurred during the 1920s, as profit outlooks were quite favorable for new corporations. As is well known, the stock market soared. Two typical features of the 1920s must be recalled here. First, a huge pyramid of financial institutions was rapidly built. Second, the large inflow of loans was directed toward investors on the stock market, not directly to production firms. Again, the similarity with the 1980s is very strong. *The new grasp of finance over the economy and society manifested itself in a similar boom of the stock market and mushrooming financial institutions.*

A last area of comparison is macro policy. By macro policy, we mean the actual fiscal and monetary policies targeted to control the stability and level of general economic activity. The emergence of such a policy framework was a long and difficult process. Large banks began to organize during the crises of the second half of the 19th century to stem financial panics, simultaneously attempting to preserve a degree of economic activity. The Treasury began to intervene at the beginning of the century, and the 1907 panic was crucial in the creation of the Federal Reserve in 1913. Federal Reserve policy remained very conservative during the 1920s and the depression. *Laisser-faire* and price stability were the two basic guidelines. The same orthodoxy prevailed concerning international transactions. The eagerness of major economies to return to the discipline of the *Gold Standard* during the 1920s was fatal.

These trends were radically upset by the New Deal of 1933. The new "Keynesian" policy framework emerged after World War II, with a strong commitment of the government to macroeconomic stability. This is when finance lost its grasp on macro policy and, in particular, on the control of the issuance of money. This was a constant object of fight, both institutional and political ; the victory of the Keynesian framework was never complete during the 1950s.

The very favorable trends of technology and distribution created new favorable conditions in the 1960s, the heyday of Keynesianism in the US, but the reassertion of a pattern *à la Marx* in the 1970s paved the way for the restoration of the power of finance. This had been prepared by a slow evolution since the end of the war, in particular the development of euromarkets (the construction of an international monetary system largely autonomous from national legislations).

Despite the existence of new institutions and mechanisms, *the policies of the 1980s had much in common with the old one : freedom to act for finance (deregulation, easy mergers, suppression of barriers to international capital mobility) and price stability at any cost (for other groups).*

2.3 Lessons from the Depression

As we recalled, significant *threats* were embodied in the recovery from the crisis of the late 19th century : technical heterogeneity, monetary and financial fragility, and a deficient dedication to macro stabilizing policies. These weaknesses were dramatically manifested in the Great Depression. If a recovery process from the crisis of the 1970s is presently under way, reminiscent of that of the early 20th century, the question must be posed of the risks associated with the present recovery. As Heyman Minsky put it : "Can it happen again ?[20]".

Consider first the explosion of monetary and credit mechanisms at the beginning of the century, that we compared with the new monetary mechanisms of today (new credit and currency markets, euromarkets, swaps, etc.). There is no doubt that contemporary multinational corporations could not have developed independently of such mechanisms. This does not mean, however, that they are adequately regulated. The problem is the comparative rhythms of extension of mechanisms that could account from increased monetary instability, on the one hand, and those of (legal and policy) stabilizing devices, on the other hand. *Policy may have difficulty catching up with financial innovations.*

Concerning the superstructure of financial institutions that bloomed during the 1920s, its weakness was clearly demonstrated by the depression. Although it was not the fundamental cause of the crisis, it played an important role in the difficulties met in the attempts to stop the catastrophe. The New Deal and the ensuing legislation severely regulated the practices of finance, creating the new institutions of the first decades following World War II, both on a domestic and on an international basis. Domestically, commercial and investment banking activities were separated ; interest rates were subjected to strict regulation. Internationally, the new institutions of Bretton-Woods were established (the Keynes-White plan) depriving the large New-York banks of their control over international transactions. Recent developments on financial markets in the world may also contribute to the possible fragility of the present situation. *What is at issue is the creation of a*

20. MINSKY H. 1982.

manageable world financial system within an adequate set of institutions and rules. It has not been achieved.

The problem of the control of the macroeconomy is central within contemporary capitalism. The progress of monetary policy after World War II has been spectacular, and the new orthodoxy of conservatism did not destroy these new institutions of capitalism. Quite the contrary, finance seized the control of central banks and international monetary institutions only to impose its own course. *Since 1983, the fluctuations of the general level of activity and prices are under control* (comparatively with earlier decades). Price stability has been achieved, and the new conservative orthodoxy is progressively implemented by the IMF throughout the world, from the North to the South, and the West to the East !

Two extreme stances must, therefore, be avoided :

1. The first one draws from the similarities with the earlier recovery. The restoration of technology and distribution that seems under way combines several features already evident at the beginning of the 20th century : strong heterogeneity of firms, explosion of monetary mechanisms, booming stock markets, conservative macro policy. An adjustment such as the Great Depression will necessarily occur !

2. The second interpretation lends too much credence to the new conservative course : there will be no adjustment at all. Nothing can stop "the triumph of the New Economy[21]".

History suggests that the Great Depression resulted from the failure of policy to confront the paradoxical effects of the restoration from the structural crisis of the late 19th century. But the depression endowed governments with a new ability to intervene. Still no actual central bank exists on a world basis, despite the interventions of the IMF and Federal Reserve. Indeed, the outcome is difficult to forecast, since it will depend considerably on political circumstances. We can, however, surmise that *the "difficulties" associated with the recovery will, at least, temper conservative enthusiasms.*

Overall, the comparison with the early 20th century suggests a rather simple diagnosis. A first issue is that of the heterogeneity of firms between large multinational corporations and a large population of smaller firms. There is an obvious "tension" between the preservation of the latter group and the stimulus to the vigorous increase in the influence of the former. The adequate forms of the transition are difficult to outline. The social cost of a "purge" *à la Thatcher* are dramatic, while too much protection may perpetuate retardation. The problem is to combine the conditions for technical change, while simultaneously stimulating investment to avoid massive unemployment. Finance managed this tension in its own way, *viz* with little concern for unemployed. A second issue is that of monetary and financial markets. The financial construct of modern capitalism is obviously risky,

21. This was the headline of the introduction to the December 30, 1996 issue of *Business Week*.

but monetary institutions — and the central banks that they control — are committed to the preservation of the world they have created. Again, finance imposed its norms internationally, with similar ponderations for capital and labor as in the first half of the 20th century.

2.4 The Political Issue

It is now time to address the political aspects of these developments. What can we learn from history in this respect ?

2.4.1 Labor and the Recovery from the Crisis of the Late 19th Century

The period following the Civil War[22] was one of social unrest. Several large and violent strikes occurred during the first decades after the war. The turn of the century witnessed the creation of the Socialist Party and the development of unions. Workers fought adamantly for wages, labor time, and working conditions. When the american economy emerged from the crisis of the late 19th century, the labor movement in the US and, as on a world basis, was on the rise.

The political and economic pressure exerted by workers was an important component of the transformations during those years :

1. A first issue was that of the new organization of labor and working conditions in relation to wages. Workers resisted the rise of Taylorism.[23] It is often claimed that the new labor organization was only implemented at the cost of a substantial increase in the purchasing power of wage-earners, the famous Fordist deal : the acceptance of the assembly line in exchange for high wages. Nothing was given to workers, however, which was not *demanded* under social and political pressure. The larger growth rate of real wages during the first half of the 20th century was made possible by the new favorable trends of technology, but such conditions would never have autonomously resulted in larger wage rates. Conversely, it seems clear that the pressure for larger wages acted as a powerful stimulus causing the spread of the new organization and technology.

2. Ruling class ideology always attempts to pin the responsibility of crises and unemployment on workers' "greediness", the rigidity of wages and that of the labor market in general. The truth is the contrary, the experience of the early 20th century shows that : (1) rising wages were compatible with increasing profit rates in the average ; (2) the severity of the depression must be blamed on the resistance of smaller capitalists attempting, by conservative legislation, to resist the new pressure of competition and rising labor costs, while finance was clinging to an obsolete *laissez-faire* policy attitude vis-à-vis the macroeconomy (in sharp contrast with its active intervention after the collapse of the stock market).

22. 1861-1865.
23. LINHART R. 1976.

3. The outcome of social struggle during those years must also be understood in relation to the tensions within the ruling class. The major split was between the owners and managers of large corporations, on the one hand, and the owners of smaller firms, on the other.[24] Each of these groups attempted to use the worker opposition to its own advantage. Small capitalists played on workers' resentment against trusts (judged responsible for high prices) ; during the first decade of the 20th century (the Progressive Era), a fraction of finance and its managers developed a more conciliatory attitude toward unions and labor. This attitude prevailed while the most radical elements of the labor movement were severely repressed (in particular during World War I).

2.4.2 The Keynesian Compromise and the Victory of Conservatism

Two basic features of the period between the turn of the century and the crisis of the 1970s must be stressed. First, the course of technical change was very favorable. This progress allowed for a substantial rise in wages. Second, the depression significantly damaged the power of finance. After World War II, a quite particular compromise was struck, in which the control of the macroeconomy shifted from finance to the state, finance was regulated and "confined" to the control of capital mobility (itself restricted[25]), and the power of managers was strengthened. In addition, large fractions of the new profits were transferred to the state through taxation. This compromise was named after Keynes, but "Keynesianism", in this sense, is given a very broad content.

Keynesianism was a political compromise among various social classes. Both the relations between workers and ruling classes, and those among the various fractions of the ruling class (smaller capitalists and finance, owners and managers) were involved. It resulted from economic and political conditions. After World War II, besides workers' political pressure, the existence of the Soviet block and the Cold War also played a crucial role. When these conditions disappeared, the compromise disintegrated. The first shock was the crisis of the 1970s. It resulted in the rise to power of finance under the banner of conservatism. The collapse of the Soviet block in the 1980s came just in time to transform a victory into a triumph.

2.4.3 Interpreting Recent Trends

These different political situations are crucial in the analysis and comparison of the periods following respectively the crisis of the late 19th and 20th centuries. Three major points must be addressed here, the defeat of the Keynesian compromise, the program of finance, and the impact of social struggle :

1. The inability of Keynesian policy to confront the crisis of the 1970s can, first, be approached on purely theoretical grounds. The Keynesian framework of analysis

24. WEINSTEIN J. 1968.
25. Due to the rise of the power of firms managers, competition legislation, and restriction to international flows of funds.

focuses on the determinants of the general level of activity. It deals with the degree of utilization of productive capacity, taking productive capacity itself as given. There is no antagonism between the incomes of capital and labor, which both benefit from an active economy. Technical change is not an issue. State intervention is essential to ensure the adequate level of activity. Welfare and antitrust policies are also part of this approach. This framework was not appropriate to deal with the structural crisis of the 1970s.[26] The main problem was, however, political, not theoretical. The Keynesian compromise was difficult to maintain in a period in which the trade-off between wages and profits was acute. In place of a tighter political alliance between workers and managers, it is finance which took the lead, broke the compromise, and strengthened its relationship with the upper fraction of managerial personnel.

2. The action of finance must be analyzed in relation to the crisis of the late 19th century and the depression. The basic implicit guideline can be summarized simply : *to seize the opportunity of the crisis to resume the initial line of development and offset the set-back that followed the depression*. This was a crucial political issue. At stake was the erosion of the purely capitalist aspect of the new relations of production following the managerial revolution, the private ownership of the means of production :

- *To resume the earlier evolution*. The reversal of the transformations of the early 20th century was never on the agenda of finance. The separation of ownership and management, and the management of both production and financial corporations by managerial and clerical personnel is given once for all, and is still on the rise. The agenda is to restore the control of owners over management. Considerable "progress" has been accomplished in this respect.
- *To correct for the set-back of finance that resulted from the depression*. Many aspects are at issue : (1) to recover the control of the issuance of money (by the control of central banks) ; (2) to impose price stability at any social cost (the protection of the lender) ; (3) to curb wages and the welfare state ; (4) to substitute to these institutions those of finance : pensions funds and private health insurances ; (5) to destroy the limitations to international capital mobility; (6) to deregulate ; Etc. What is rejected has basically to do with state intervention, as in the Keynesian compromise. It does not mean, however, that collective and centralized institutions in which the global interests of ruling classes are vested disappear. They are actually developed, as pseudo-states, outside the traditional state apparatus.

3. An important difference between the crisis of the late 19th century and that of the 1970s is that the labor movement is no longer strong. If the recovery endures, new conditions will be created to demand and obtain significant progress in distribution and working conditions, provided that the pressure is strong enough. At a

26. "True" Keynesians still contend that there is no "structural" basis to the problem of employment in Europe : Keynesian demand policy is still relevant.

more fundamental level, the new ruling block, the coalition of owners and of the upper fraction of management, will have to confront the consequences of the break of the earlier compromise on the rest of managerial personnel and clerical workers. The cohesion between these groups, and between these groups and production workers, will be strengthened. New political unrest might well arise out of this new social configuration.

CONCLUSION: ADJUSTING AT THE EXPENSE OF LABOR

The wave of unemployment that developed during the crisis of the 1970s was due to the reassertion of an unfavorable pattern of evolution of technology, which mirrors the difficulty of capitalism to achieve actual "pure" and balanced technical progress. By this we mean the simultaneous rise of labor productivity and capital productivity. This bias had already been identified by classical economists and, in particular, in Volume III of Marx's *Capital*, in the middle of the 19th century.

The decline of the profit rate caused a slowdown of accumulation in major developed countries, resulting in large unemployment rates. The significance of the difference between Europe and the US must be considered carefully. The distinct evolution of unemployment in the US since the early 1980s does not follow from any specific virtues of the american economy and society, but from the completion of the catching up of European countries vis-à-vis the US under the conditions of a structural crisis, of which a slow rate of accumulation was a major component.

Capitalism recovered from the crisis of the late 19th century, during the first half of the 20th century, by a revolution of relations of production, signaling a new stage of capitalism. The cost was huge : the crisis of the late 19th century and the Great Depression. (We leave political developments aside.)

It is possible that capitalism will again emerge from the crisis of the late 20th century. The cost should not be a new Great Depression. But that of the crisis of the 1970s was already dramatic. Once again capitalism adjusted at the expense of labor. The consequences of the crisis were extended over time by the new policy of finance, which managed the crisis in its own way, and took the opportunity to restore its power on the economy and grasp on society in general.

APPENDICES

APPENDICES

I - Unemployment

The figures used in this study are official OECD series. They must be interpreted with care. As is well known, the measure of unemployment varies considerably depending on the definition used. In its Home Page on Internet, the AFL-CIO refers to U-6, one the available definitions :

> Using a methodology formally called "U-6," the new data will provide a broader, more representative picture of those facing the uncertainties of an imperfect economy. In February, for example, the alternative rate of all those affected was 10.7 percent, nearly double of the 5.5 percent conventional rate[27].

The choice of the series is not neutral in the comparison among countries. For example, France U-6 rate of unemployment for the same period was 14%, *i.e.*, larger than the 12.4%, but not the double. However, these various series tend to move in concert within a same country.

The following description of the American employment picture is quite telling :

> In the fall of 1995, America's official unemployment rate was hovering around 5.7 percent. But like an iceberg that is mostly invisible below the waterline, officially unemployed workers are just a small part of the total number of workers looking for more work.
> If we combine the 7.5 to 8 million officially unemployed workers, the 5 to 6 million people who are not working but who do not meet any of the tests for being active in the work force and are therefore not considered unemployed, and the 4.5 million part-time workers who would like full-time work, there are 17 to 18.5 million Americans looking for more work. This brings the real unemployment rate to almost 14 percent.
> Slow growth has also generated an enormous contingent workforce of underemployed people. There are 8.1 million American workers in temporary jobs, 2 million who work "on call," and 8.3 million self-employed "independent contractors" (many of whom are downsized professionals who have very few clients but call themselves self-employed consultants because they are too proud to admit that they are unemployed). Most of these more than 18 million people are also looking for more work and better jobs. Together these contingent workers account for another 14 percent of the workforce. In the words of Fortune magazine, "Upward pressure on wages is nil because so many of the employed are these 'contingent' workers who have no bargaining power with employers, and payroll workers realize they must swim in the same Darwinian ocean." Like the unemployed, these contingent workers generate downward wage pressures.
> In addition there are 5.8 million missing males (another 4 percent of the workforce) 25 to 60 years of age. They exist in our census statistics but

27. AFL-CIO News, March 22, 1996., p. 18.

> not in our labor statistics. They have no obvious means of economic support. They are the right age to be in the workforce, were once in the workforce, are not in school, and are not old enough to have retired. They show up in neither employment nor unemployment statistics. They have either been dropped from, or have dropped out of, the normal working economy. Some we know as the homeless ; others have disappeared into the underground illegal economy.
> Put these three groups together and in the aggregate about one-third of the American workforce is potentially looking for more work than they now have. Add in another 11 million immigrants (legal and illegal) who entered the United States from 1980 to1993 to search for more work and higher wages, and one has a sea of unemployed workers, underemployed workers, and newcomers looking for work.
> These millions of job-hunters lead to a more human-scale result that everyone can understand. At 5 p.m. a midsized metal-ceramic firm posts job openings for 10 entry-level jobs on its bulletin board. By 5 a.m. 2,000 people are waiting in line to apply for those 10 jobs.[28].

We already commented, in section 1.1, on figure 1, which displays unemployment rates in Europe (all European OECD countries) and in the US. Figure 6 presents the profile of evolution for major European countries.

Two components can be distinguished in the profile of unemployment, a *structural* component and a business-cycle *component*. When the economy is active employment is increased, while employment declines in a recession ; this accounts for the business-cycle component. Even if the level of activity is normal in a country, one fraction of unemployment may, however, be maintained ; this is the structural component. The business-cycle component relates to the fluctuations of activity measured, for the total economy, by the *output-gap* (figure 41).[29] Business-cycle unemployment can be cured by actions on demand levels ; structural unemployment relates to the mechanisms described in section 1. The trend line ($\circ$) represents the structural component of unemployment. The business-cycle component is measured by the distance between the trend line and the actual series.

With this distinction, basic discrepancies between Europe and the US emerge : (1) the difference between the two structural unemployments is striking — this component rises steadily in Europe culminating at 10.4% in 1996, while it successively increases and declines in the US, with a maximum of 7.3% in 1981 and a final value of 5.8 in 1996 ; (2) concerning the business-cycle component, the unemployment rate in the US appears very sensitive to business-cycle fluctuations.

The evolutions of employment are also quite distinct in Europe and in the US, as shown in figure 7. The growth rates in percentage points are displayed in Table 4. The growth of employment was very slow in Europe, in sharp contrast with the

28. THUROW L. 1996, p. 54.
29. For the Manufacturing sector, this variable is known as the capacity utilization rate. The fluctuations of the output gap and of the capacity utilization rate are strongly correlated.

Figure 6 Unemployment Rates in Four European Countries (%)

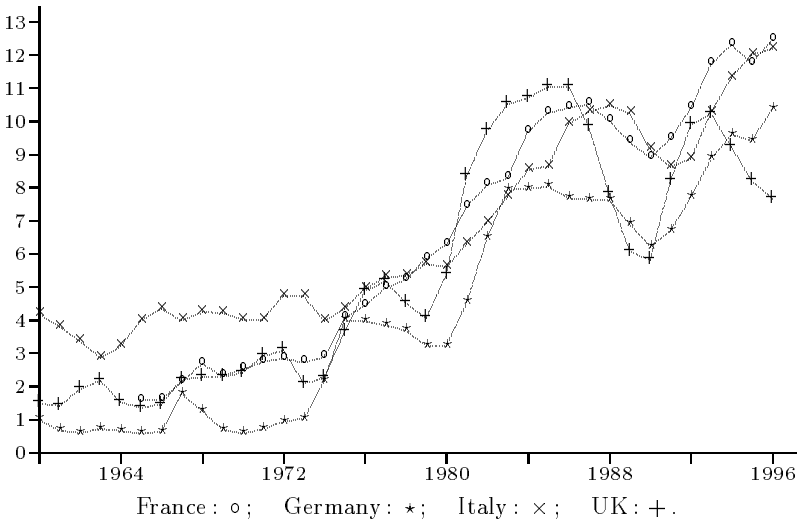


Figure 7 Employment in Europe and in the US

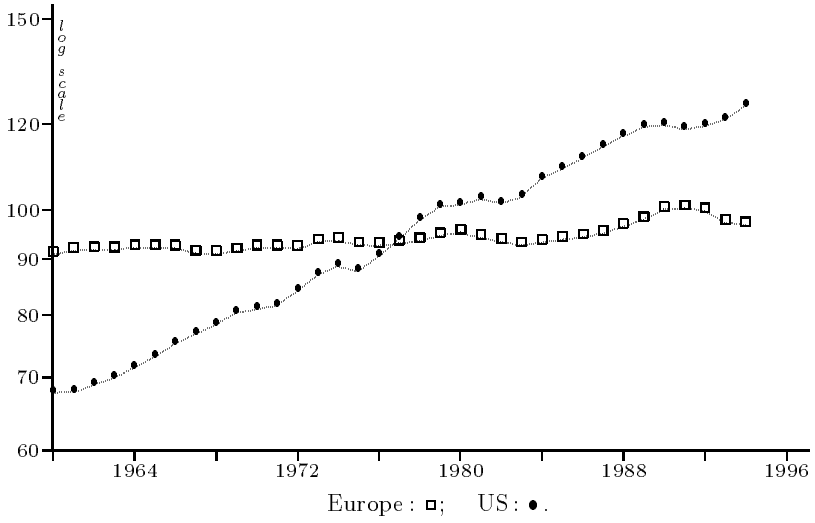


Figure 8 The Number of Hours Worked in a Year per Worker, in Europe and in the US

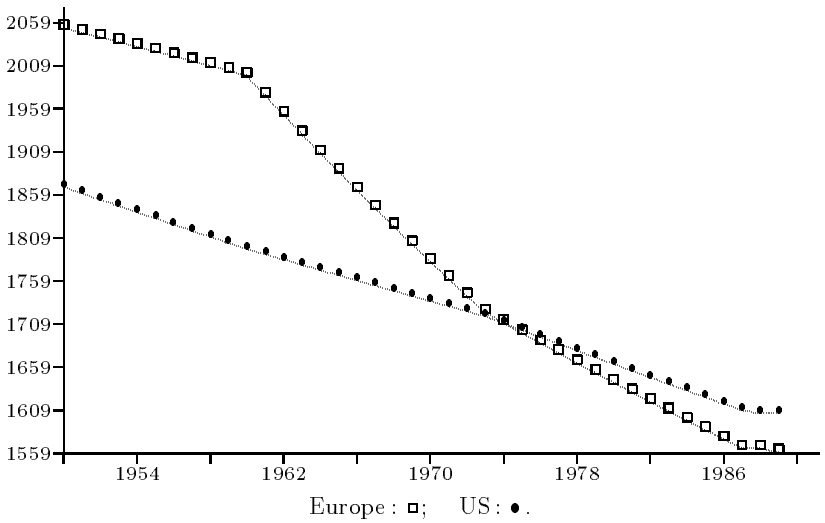


Table 4 - Average Growth Rates of Total Employment (% Per Year)						
	France	Germany	Italy	UK	Europe	US
1960-1973	0.7	0.1	−0.6	0.1	0.1	2.0
1973-1994	0.2	1.4	0.3	0.2	0.3	1.8

US. The growth rate of employment is slightly larger since 1973, in spite of the crisis. But the labor force grew more.

Both in the US and Europe, the number of hours worked in a year declined. This is shown in figure 8.

II - Employment, Growth, and Technology

The structural crisis of the 1970s unsettled the fragile equilibrium of employment. Both accumulation and technical change were affected. The cause of the wave of structural unemployment was clearly the slow growth of productive capacity.

The analysis unfolds in three steps :

		Technology (capital-labor ratio) ↓		Annual hours worked per person ↓		Labor force ↓
Capital accumulation	→	Number of hours worked	→	Employment	→	Unemployment

The relationship between the total number of hours worked (H) by all workers, the capital stock (K), the capital-labor ratio (K/H), and the number of hours worked per worker in a year (h), can be written as :

$$L = K \frac{1}{(K/H)} \frac{1}{h}$$

The growth rates of the variables are therefore linked by :

$$\rho(H) = \rho(K) - \rho(K/H) - \rho h$$

Table 5 compares the values of these growth rates prior to and after the break of the 1970s, in Germany and the US.

Table 5 - Average Growth Rates of K, K/H, h, and L (% Per Year)

	1960-1973				1973-1993			
	$\rho(K)$	$\rho\left(\frac{K}{H}\right)$	$\rho(h)$	$\rho(L)$	$\rho(K)$	$\rho\left(\frac{K}{H}\right)$	$\rho(h)$	$\rho(L)$
Germany	5.58	6.94	−1.10	−0.26	2.86	3.26	−0.63	0.24
US	3.89	2.55	−0.34	1.68	3.21	2.00	−0.38	1.59

Several interesting observations emerge :

1. Accumulation slowed both in Germany and in the US. This was *detrimental* to the growth rate of hours worked, employment, and unemployment.

2. The rate of growth of the capital-labor ratio was also reduced in the two countries. This reduction had a *favorable* impact on employment. To this effect, one can add the reduction of labor duration.

3. In both countries, these effects were of the same order of magnitude and, more or less, offset one another.

4. However, technical change, as measured by the capital-labor ratio, was slower in the US than in Germany. *This is why the US were less hurt than Germany* in terms of employment. The same was true in the three other European countries.

This analysis is illustrated in figures 9 and 10. Figure 9 displays the growth rates of the capital stock (corrected for short-term fluctuations). The decline was remarkable. The growth rates of the capital-labor ratio (also corrected) in figure 10 is also striking.

Looking at particular countries, one can note that the case of Italy is singular. Both the slowdown of accumulation and of the capital-labor ratio were of a lesser amplitude in this country. France combined a sharp reduction of accumulation and a declining rate of technical change, but still comparatively rapid — the worst combination concerning unemployment. In the US, the rate of technical change was continuously sluggish during the period.

The growth rate of labor productivity is often presented as the fundamental cause of unemployment. The underlying framework of analysis is :

$$\begin{array}{ccccccc} & & \text{Technology} & & \text{Annual hours} & & \text{Labor} \\ & & \text{(labor productivity)} & & \text{worked per person} & & \text{force} \\ & & \downarrow & & \downarrow & & \downarrow \\ \text{Output} & \rightarrow & \text{Number of} & \rightarrow & \text{Employment} & \rightarrow & \text{Unemployment} \\ & & \text{hours worked} & & & & \end{array}$$

This line of argument emphasizes *demand* instead of productive capacity, and is not really appropriate in long-term analysis. Nonetheless, the same demonstration can be made. Employment (L), output (Y), labor productivity (Y/H), and the duration of labor (h) are linked, as well as their growth rates :

$$L = Y\frac{1}{(Y/H)} \quad \textit{and} \quad \rho(H) = \rho(Y) - \rho(Y/H)$$

The growth rates varied as shown in Table 6.

Table 6 - Average Growth Rates of K, K/H, h, and L (% Per Year)

	1960-1973				1973-1993			
	$\rho(Y)$	$\rho\left(\frac{Y}{H}\right)$	$\rho(h)$	$\rho(L)$	$\rho(Y)$	$\rho\left(\frac{Y}{H}\right)$	$\rho(h)$	$\rho(L)$
Germany	4.38	5.74	−1.10	−0.26	2.30	2.70	−0.63	0.24
US	3.56	2.23	−0.34	1.68	2.45	1.24	−0.38	1.59

Figure 11 presents the growth rates of output. In spite of the revival of growth in the late 1980s, the reduction of growth rates was spectacular. Figure 12 illustrates the dramatic decline of the growth rate of labor productivity : *unemployment is not the effect of the acceleration of the growth of labor productivity*. Again the poor performance of the US acted in favor of employment.

Figure 9 Growth Rates of the Gross Capital Stock

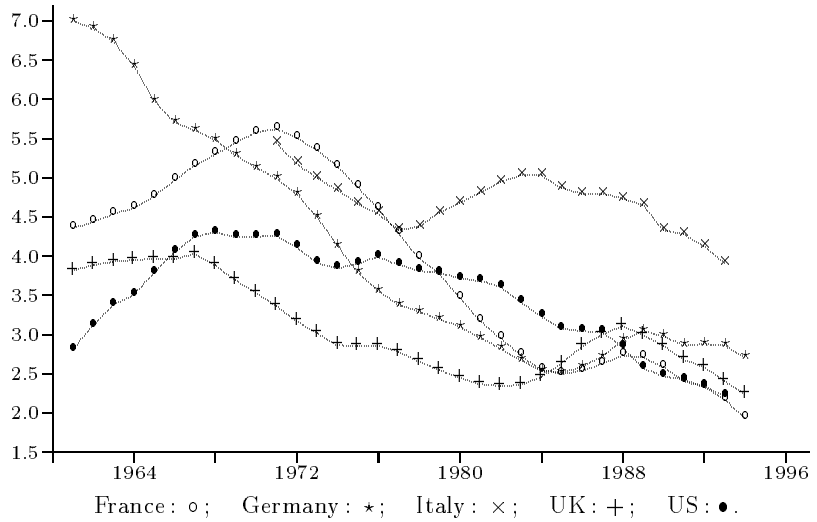


Figure 10 Growth Rates of the Capital-Labor Ratio

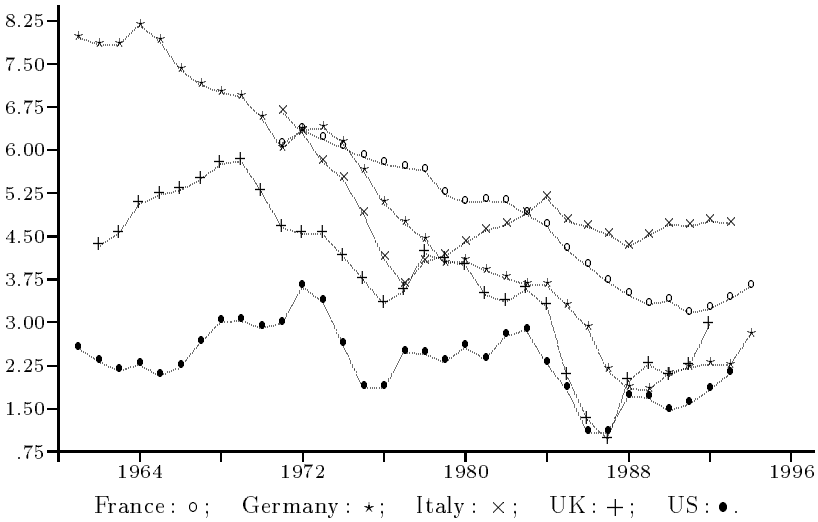


Figure 11 Growth Rates of Output

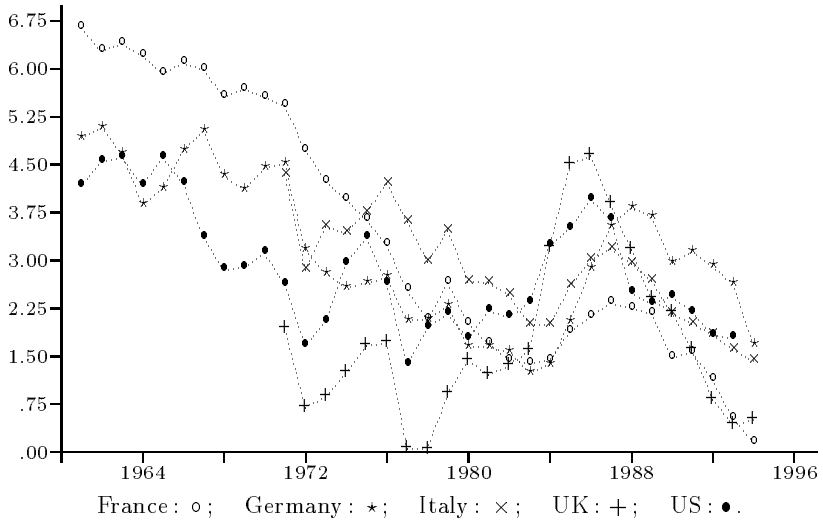
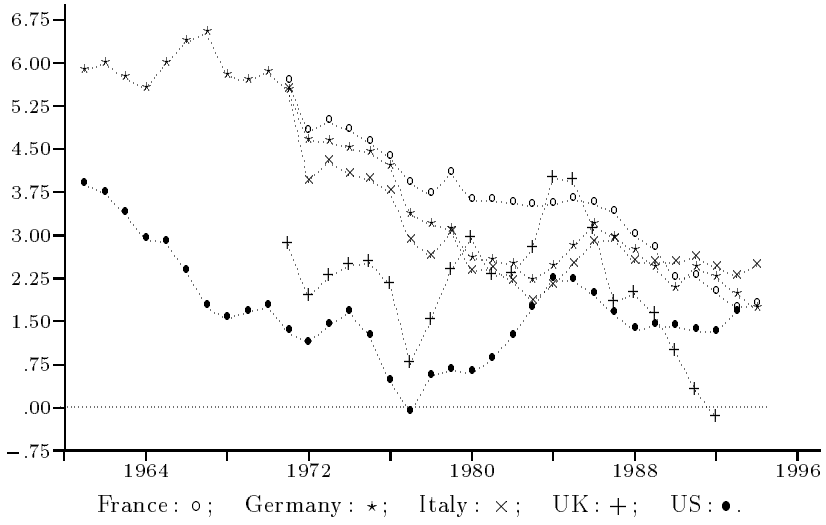


Figure 12 Growth Rates of Labor Productivity



III - Technical Change

The previous appendix already provides considerable information concerning technical change : the growth rates of the capital-labor ratio and that of labor productivity. The present appendix adds the *productivity of capital* to the picture, and allows for a comparison of the values of these variables among countries, not only growth rates. With this approach, the issue of *catching up* and *convergence* can be addressed. Moreover, these series also illustrate several aspects of the new pattern *à la Marx* and the structural crisis of the 1970s, which will be discussed in the next appendix.

Three basic series are presented : the productivity of labor (figure 13), the capital-labor ratio (figure 14), and the productivity of capital (figure 15). A ratio between two variables expressed in *value* (current currency units), such as the capital-labor ratio, is directly comparable among countries. The two other variables, in which a variable in *volume* is divided by a number of hours, must be expressed in a common unit for comparison. We use 1990 purchasing power parity indexes.

Labor productivity, the ratio of output to the number of hours worked, is a well-known variable. It measures the efficiency of labor in production. Fixed capital, equipment and structures, is also involved in production. According to the traditional formulation, labor and capital are "combined". The capital-labor ratio is a straightforward indicator of "mechanization". It is also useful to relate the capital stock to output in the *productivity of capital* (the ratio of output to the stock of fixed capital).

The capital-labor ratio is also a crucial variable of Marx's analysis of technical change, named there the *technical composition of capital*. Some aspects of Marx's thesis that more and more capital is required in production — a bias in technical change — are, however, better described by the productivity of capital than by the capital-labor ratio.

Consider first labor productivity. Excepting UK, to which we will return, *the catching up and convergence is striking*. France, Italy, and Germany start from a comparatively lower level and rise faster than the US. As they came closer to the US, their growth rates of labor productivity began to sag. Convergence is, therefore, a twofold phenomenon : It affects simultaneously *levels* and *growth rates*. This convergence of growth rates was already evident in figure 12. A similar process is apparent in figure 14 for the capital-labor ratio. Considering the specific profile of labor productivity in UK, it is surprising that the capital-labor ratio for this country remained close to that of other European countries. This observation suggests that the capital stock might be overvalued in this country.

The productivity of capital in figure 15 reveals a very early convergence between the various countries.[30]

30. Again, the weight of fixed capital seemed surprisingly large in this country.

Figure 13 The Productivity of Labor

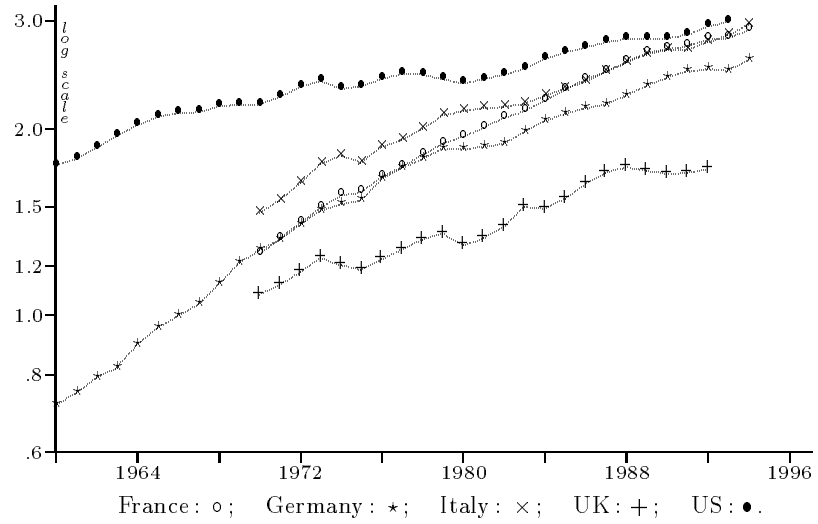


Figure 14 The Capital-Labor Ratio

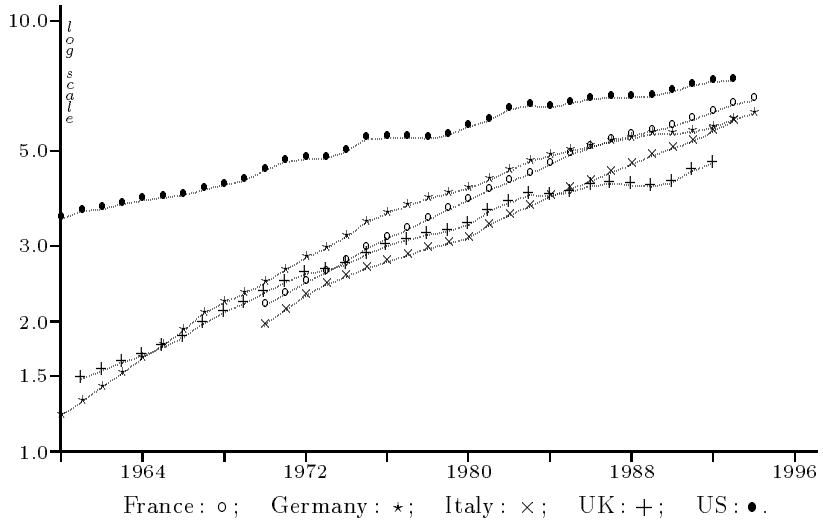
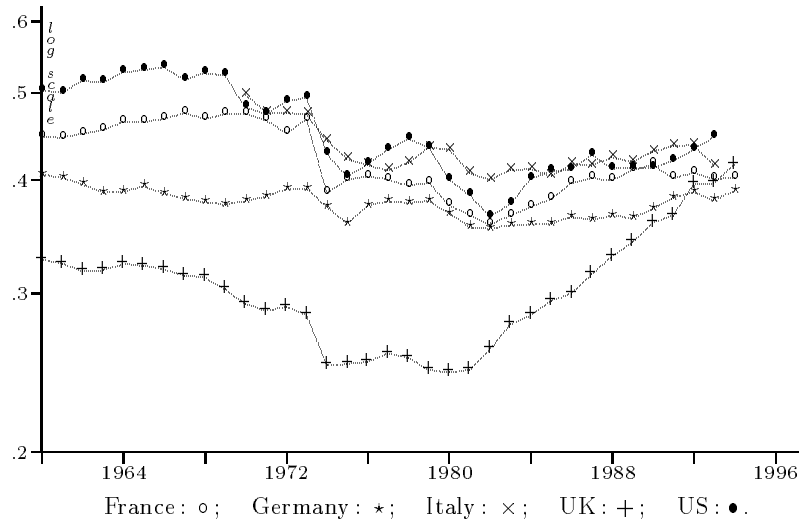


Figure 15 The Productivity of Capital



A last illustration is provided in figure 2, which uses Angus Maddison series. Both the unit analysis (total economy instead of industries) and the period covered, 1945-1989, differ. This figure also depicts the ratio for the Japanese economy, which has not been included in the figures in this paper. This figure provides a spectacular view of the same process. We already commented on this figure in section 1.2.3.

The cacthing up has now been basically completed. This is well documented in PILAT D. 1996 for the Manufacturing sector of the economy. Concerning total factor productivity, the US are still leading over 9 of the most advanced countries in 13 industries out of 35. The Netherlands leads 6 times, and France and Japan 5 times. Concerning the capital-output ratio, France leads in 12 industries, the Netherlands 9, and the US in 5 industries.

IV - Distribution

We will successively consider wages and profits. The income of wage-earners is measured by their *real wage-rate*, which is also a cost for firms. The relative value of profits can be assessed in relation to total income and in relation to the capital stock invested in a business. The first ratio is the *share of profits*, and the second the *profit rate*. These variables are not independent of those describing technology.[31]

The real-wage, expressed in purchasing power parity[32], is plotted in figure 16. It depicts the *total compensation of labor*, thus including the indirect wage. The picture is similar to that obtained for labor productivity in the previous appendix. France, Germany and Italy are catching up with the US. As they came closer to this country, the growth rate of their real-wage declined, and the series paralleled that for the US during the last decade. A break occurred in the US around 1970, while the growth rate of real-wages was maintained in the three catching-up countries. The slowdown was gradual, up to the early 1980s.

As in the case of technology, the series for UK is singular. In this measure, the real-wage in this country is about half its value in the US, and 70% of Germany and Italy! There is some coherence in this picture, however, in terms of comparative levels and growth rates. The UK is a country of low wages and low labor productivity.

The share of profits (in a large definition : Net Domestic Product minus labor compensation) in the Net Domestic Product is described in figure 17. Significant rises are observable in some countries since the early 1980s, but they often compensate for earlier declines as in the case of France. A rise of the share of profit is apparent in France and Italy, *i.e.*, in the two countries where the rise of labor productivity is stronger (figure 13), when the real wage and labor productivity diverge.

The movements of the profit rate play a crucial role in the analysis in this paper. A profit rate is a ratio of *profits* to the *capital stock*. However, several definitions can be given of these two variables. A broad definition of profits can be used, such as the Net National (or Domestic) Product minus the total compensation of labor. But taxes (direct and indirect), or interests, can be subtracted. The capital stock may include fixed capital (equipment and structures) and inventories. Monetary and financial components could be added ; several difficulties are met, however, because of debts and of the holding of shares (for example, of subsidiaries).

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31. There is a basic relationship between the movements of capital productivity ($\frac{Y}{K}$), the share of profits ($\frac{\Pi}{Y}$), and the profit rate ($\frac{\Pi}{K}$) : $r = \frac{\Pi}{K} = \frac{\Pi}{Y}\frac{Y}{K}$.

32. This index refers total output, not to the goods specifically purchased by workers. Thus, the wage considered here is more of the nature of a labor cost, than an index of purchasing power.

Figure 16 Real-Wages in 1990 Purchasing Power Parity

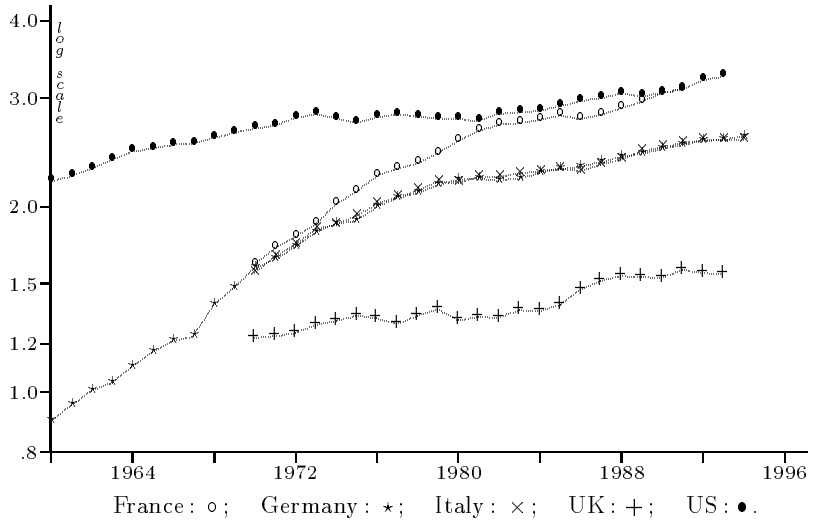


Figure 17 The Share of Profits in the Net Domestic Product

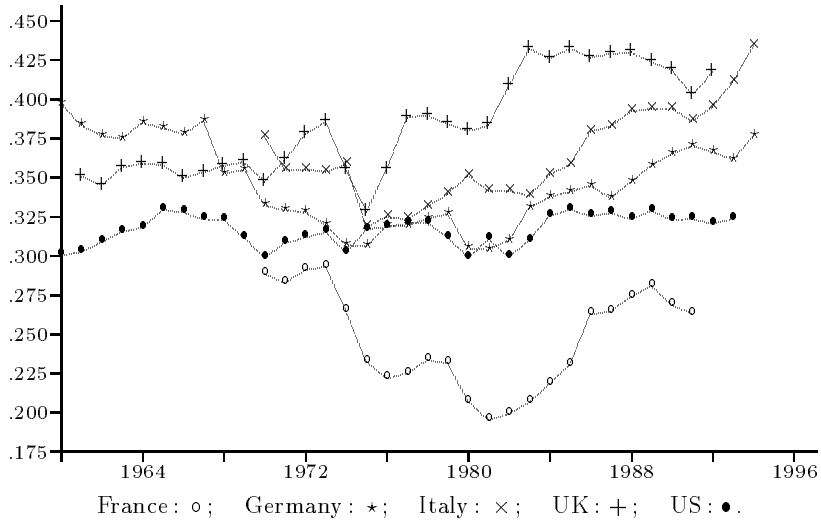


Figure 18 The Profit Rate in Manufacturing Industries

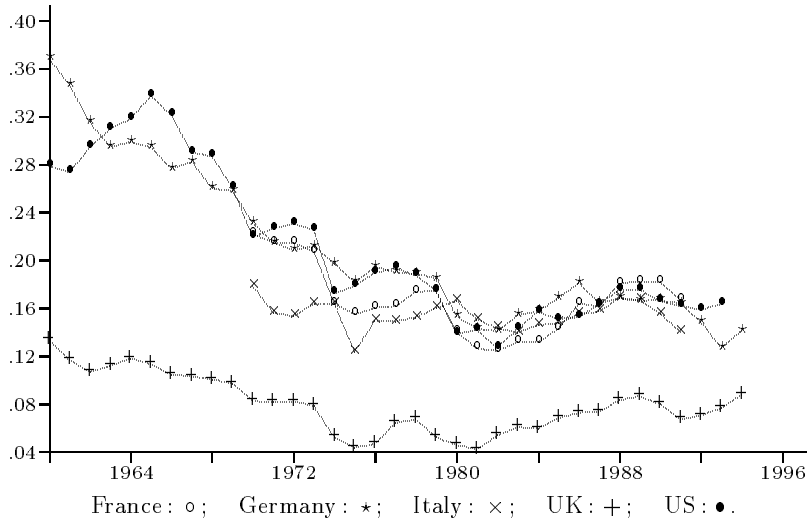
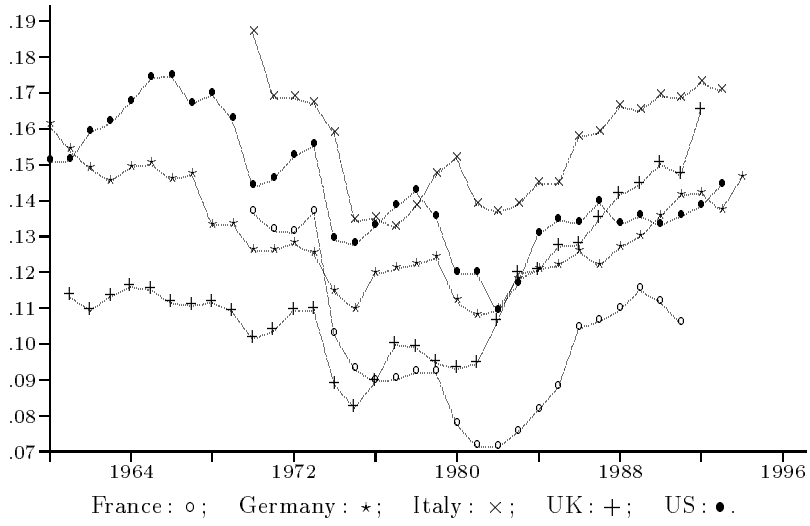


Figure 19 The Profit Rate in all Industries



The capital stock may also refer to enterprises own funds (shareholders equity). In the analysis of distribution in relation to technology, as in this appendix, we use the ratio :

$$r = \frac{\text{Net Domestic Product} - \text{Total Labor Compensation}}{\text{Fixed Capital}}$$

The profit rate for Manufacturing is displayed in figure 18 (data are not available for Italy). With the exception of UK, the convergence between these rates is striking over the entire period. One interpretation could be that international competition primarily affects the manufacturing sector. (The low level obtained for UK confirms the insight that the capital stock might be overvalued in this country.) The decline of the profit rate since the late 1960s is quite strong in this sector. The profit rate is stagnating in the latter decades.

The profit rates for all industries are plotted in figure 19. The convergence is less striking. Symmetrically, this might be the effect of a lesser degree of international competition.[33] This dispersion affects the clarity of the plot. Figure 20 rescales these rates as indexes, with 1 for the average of 1970-1974. With this measure the decline from 1970 onward is more clearly apparent. The same rescaling is used in figure 21, but with 1 for the average of 1980-1983. This figure allows for a discussion of recent trends.

33. One should also keep in mind that measurement is certainly more accurate in the manufacturing sector.

Figure 20 The Profit Rate for All Industries, Normalized to 1 for 1970-1974

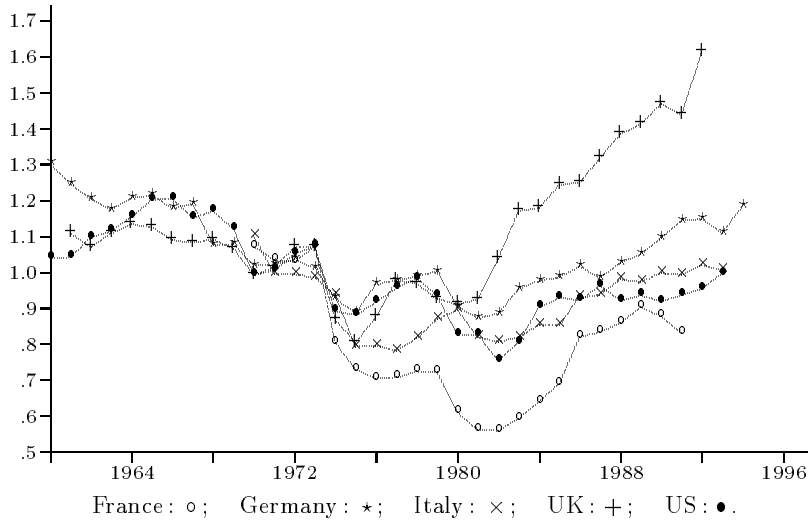
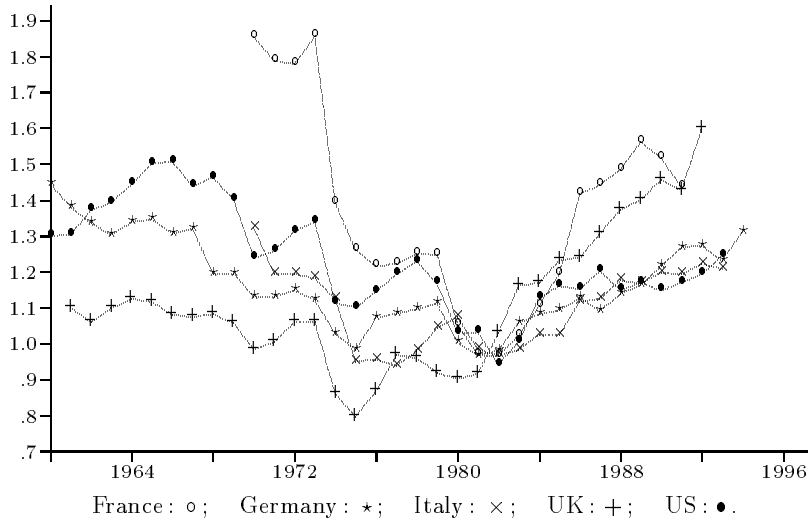


Figure 21 The Profit Rate for All Industries, Normalized to 1 for 1980-1983



V - The Breaks of the Early 1970s and 1980s

Table 7 - Three Subperiods : France						
	Average Growth Rates (% Per Year)			Ratios of the Average Values per Periods		
	60-73	73-82	82-94	(2)/(1)	(3)/(1)	(3)/(2)
Y/H	-	3.79	3.19	-	-	1.37
Y/K	0.31	−1.94	1.58	0.86	0.85	0.99
K/H	-	5.35	3.63	-	-	1.50
w	-	3.94	1.47	-	-	1.23
r	-	−5.60	5.30	-	-	1.06
W/Y	-	1.13	−1.16	-	-	0.98

Table 8 - Three Subperiods : Germany						
	Average Growth Rates (% Per Year)			Ratios of the Average Values per Periods		
	60-73	73-82	82-94	(2)/(1)	(3)/(1)	(3)/(2)
Y/H	5.74	3.08	2.52	1.63	2.15	1.32
Y/K	−0.33	−0.68	0.80	0.95	0.95	0.99
K/H	6.94	4.30	2.23	1.86	2.62	1.41
w	5.52	2.38	1.44	1.58	1.85	1.17
r	−1.92	−0.85	2.10	0.83	0.91	1.11
W/Y	0.88	0.08	−0.69	1.08	1.02	0.95

Table 9 - Three Subperiods : Italy						
	Average Growth Rates (% Per Year)			Ratios of the Average Values per Periods		
	60-73	73-82	82-93	(2)/(1)	(3)/(1)	(3)/(2)
Y/H	-	2.73	2.54	-	-	1.27
Y/K	-	-1.10	0.61	-	-	0.98
K/H	-	3.89	4.44	-	-	1.57
w	-	2.36	1.40	-	-	1.16
r	-	-1.10	2.25	-	-	1.10
W/Y	-	0.01	-0.97	-	-	0.94

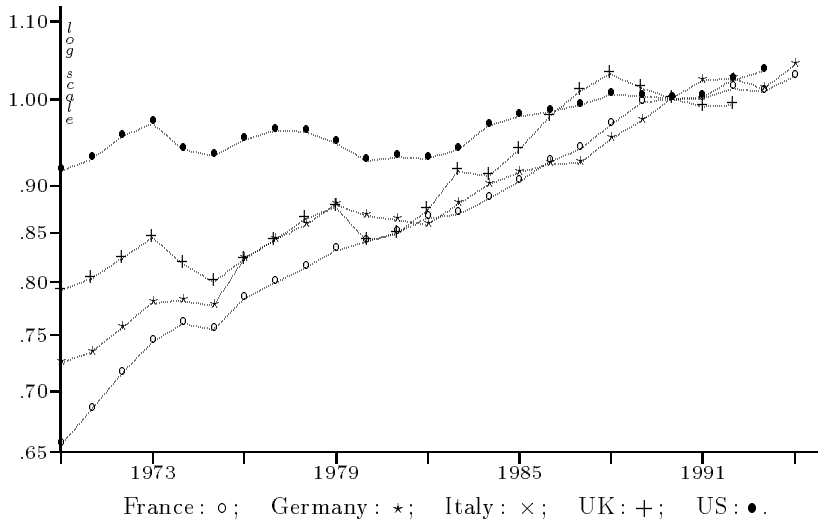
Table 10 - Three Subperiods : UK						
	Average Growth Rates (% Per Year)			Ratios of the Average Values per Periods		
	61-73	73-82	82-92	(2)/(1)	(3)/(1)	(3)/(2)
Y/H	-	1.54	2.03	-	-	1.26
Y/K	-1.15	-0.65	3.93	0.83	1.04	1.26
K/H	5.16	3.82	1.68	1.56	2.06	1.32
w	-	0.24	1.88	-	-	1.11
r	-0.60	0.58	3.69	0.87	1.22	1.41
W/Y	-0.32	-0.72	0.17	0.97	0.90	0.93

Table 11 - Three Subperiods : US						
	Average Growth Rates (% Per Year)			Ratios of the Average Values per Periods		
	60-73	73-82	82-93	(2)/(1)	(3)/(1)	(3)/(2)
Y/H	2.23	0.30	1.61	1.15	1.31	1.14
Y/K	-0.39	-2.03	1.33	0.83	0.81	0.98
K/H	2.55	2.33	1.41	1.32	1.63	1.23
w	1.85	0.00	1.21	1.11	1.19	1.08
r	-0.31	-2.40	1.69	0.82	0.83	1.01
W/Y	-0.04	0.17	-0.16	1.00	0.99	0.99

VI - Is a Recovery Under way ? Do the US Lead ?

The previous appendix distinguishes between three subperiods, with two breaks, in the early 1970s and early 1980s. The first period corresponded to the last stage of the favorable postwar episode, the so-called "thirty glorious years". The 1970s were the typical years of crisis. The remainder of this appendix is devoted to the discussion of the first symptoms of a recovery, during the third period, for the variables in which it is apparent.

Figure 22 Total Factor Productivity Indexes



Several interesting observations can be made :

1. A conventional indicator of technical progress is *total factor productivity*, an average of the productivity of labor and of that of capital.[34] These indexes are plotted in figure 22. They clearly document : (1) the slowdown in the rhythms of technical progress in this measure ; (2) the larger performances of Europe.

2. The profit rates as in figure 21 signal a new trend upward in all countries. The rise is not larger in the US. Figure 20 allows for a comparison of present levels with those of the early 1970s.[35]

34. Weighted by the share of labor and profits in total income.
35. The case of UK is really dramatic and would require a specific treatment.

One problem in this investigation is that the various OECD data bases end in 1993. Using the latest data made available by the Bureau of Economic Analysis, it is, however, possible to prolong the series for the US up to 1996. We will concentrate here on the corporate sector of the economy, where data are more reliable and no correction for self-employed workers is needed. The figures displayed concern the non-financial corporate sector.[36]

Consider, first, capital productivity and the profit rate in figures 23 and 4. Three series are presented for capital productivity : the ratios to the fixed capital stock (equipment and structures) of either the gross domestic product, the net domestic product, or domestic income. The same image always obtains. Capital productivity is back to its levels of the mid-1960s! And this is not the effect of a boom of output, since no such boom is under way. In the two measures in this figure, the evidence of a recovery becomes more and more cogent as time passes. The profit rate is now back to its levels of about 1969.

In the interpretation of this recovery, it is interesting to distinguish between the two components of the fixed capital stock, equipment and structures. Figure 24 presents the productivities of equipment and structures (total outputs divided by either component). The two profiles are quite different. The trend of the productivity of structures is upward. This movement of economizing on structures in comparison to output is still observable after 1982. Thus, the downward trend of capital productivity can be attributed to equipment. This is the price paid for mechanization. The reversal of trends after 1982 is, therefore, related to the stabilization of this ratio. It signals a break in historical trends.

A major factor in the stabilization of the productivity of equipment seems related to the information boom described in section 1.4. Figure 25 depicts the proportions of information, industrial, transportation, and miscellaneous equipment in the total investment in equipment, all measures being expressed in constant dollars. The rise of information technology was dramatic. In nominal value, the same ratio for 1993 is lower, because of the declining relative price of this category of equipment, but still reaches approximately one third of total investment in equipment. This *price effect* is described in figure 26, which presents the four price indexes for the same components of investment. The difference between information and the other components is clear. This price effect is important, since the productivity of capital for all industries, as in figure 23, does not increase after 1982 in the US, when both output and fixed capital are measured in constant dollars.

Concerning Europe, the limitation of data to 1993 does not allow us to conclude to any form of retardation in this process, and — taking account of the faster growth of labor productivity — no argument can be made of the slower growth of capital productivity, since the catching up is not fully completed.

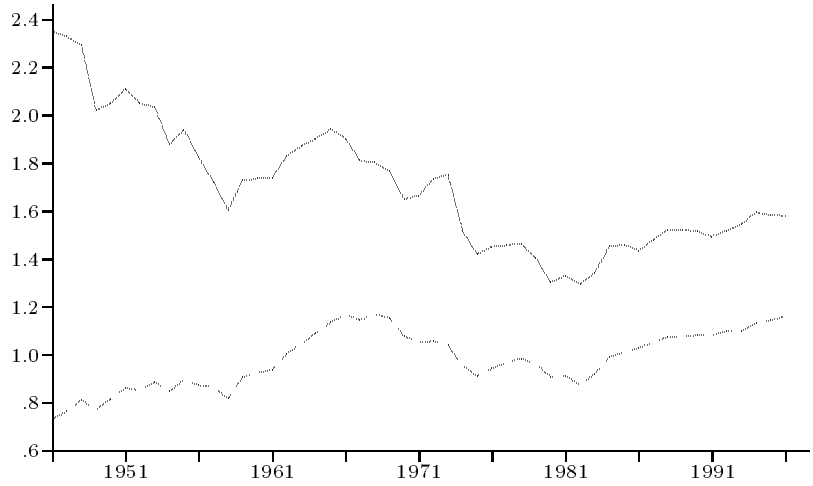
Since real wages are practically constant, the rise of capital productivity cannot be imputed to the increasing cost of labor (a wage-induced substitution effect). It is a form of "pure" technical progress.

36. Including finance or not, does not change the results significantly.

Figure 23 Capital Productivity in the US Non-Financial Corporate Sector

Gross Net Domestic Productuct (——), Net Domestic Product (— —), or Domestic Income (-----).

Figure 24 The Productivity of Equipment and Structures in the US Non-Financial Corporate Sector

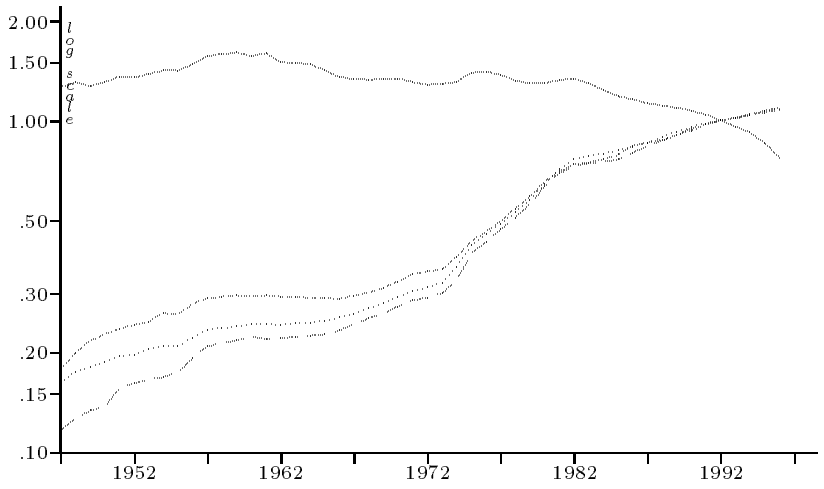


Equipment : (——) ; Structures : (— —).

Figure 25 The Share of the Various Components of Investment in Equipment (in Constant Dollars)

Information : (——) ; Industrial : (— —) ; Transportation : (-----) ; Other : (·····) .

Figure 26 Prices of the Various Components of Investment in Equipment



Information : (——) ; Industrial : (— —) ; Transportation : (-----) ; Other : (·····) .

VII - Investment

The slowdown of accumulation is already evident in figure 9 in Appendix II, where the growth rates of the capital stock are displayed. It is now, in this appendix, the *explanation* of this phenomenon that is at issue.

The net capital stock is determined as follows:

$$K_{t+1} = K_t + I_t - D_t \quad or \quad \rho(K_t) = \frac{I_t - D_t}{K_t}$$

with K denoting the net capital stock, I gross investment, and D depreciation. Net investment is $I_t - D_t$. Depreciation is measured by depreciation schedules, as a function of the service life of capital. Thus, total depreciation depends on the average service life of capital. Since the service life of equipment is considerably shorter than that of structures, the average service life of capital depends on the proportions of equipment and structures in the capital stock. This proportions increased historically causing a decline of the average service life of capital. Note that the development of information technology adds to this shortening.

Figure 27 depicts the evolution of gross investments. The series are indexes which have been normalized to 1 for 1970-1974. Up to 1975, all profiles are similar. Then, investment soars in the US and remains larger. This observation contradicts that derived from figure 9, that the capital stock did not grow faster in the US than in European countries. This is due to the shorter service life of capital (the larger proportion of equipment). It is important to keep in mind the large transfer of ownership from the private public to the private sector in Europe (privatization programs). This might explain why the recovery of investment after 1985, which occurred in all European countries, was so strong in the UK.[37]

Investment levels can also be assessed in relation to Gross Domestic Product. These ratios are plotted in figure 28. For clarity, the ratios have been rescaled at 1 for the period 1970-1974. The decline of this ratio in France, Germany, and Italy is clearly apparent, despite the bulge around 1990. The specificity of the UK and US is also evident.

The determination of investment is a controversial issue. Abstracting from *ex ante* equilibrium analysis (Say's Law, Walrasian Equilibrium), where all savings are automatically invested, three basic explanations are given to investment:

1. *Demand.* Investment is determined by the levels of demand or their variations. This is the theory of the investment accelerator. The degree in the utilization of productive capacity (measured by the capacity utilization rate or the output gap) may also be considered.

37. When private and public investments are aggregated, the profile for the UK is similar to that of other European countries.

Figure 27 Gross Investment by the Business Sector (Constant Dollars, Index 1970 -1974=1)

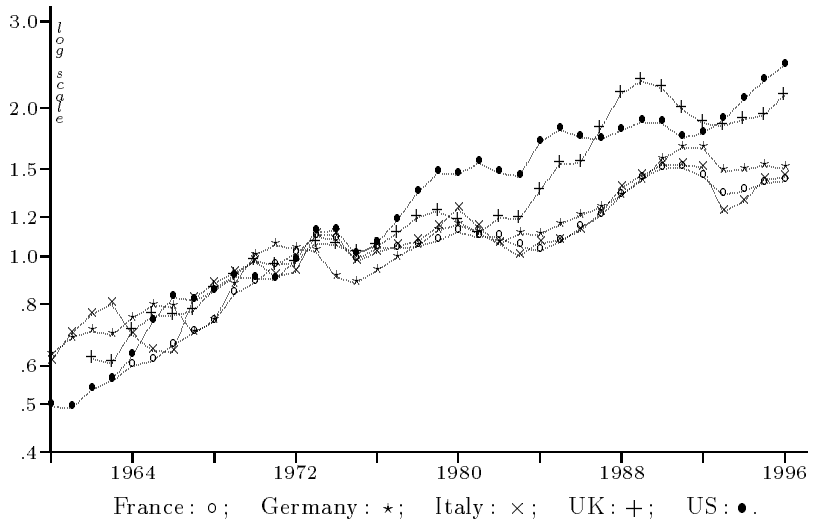
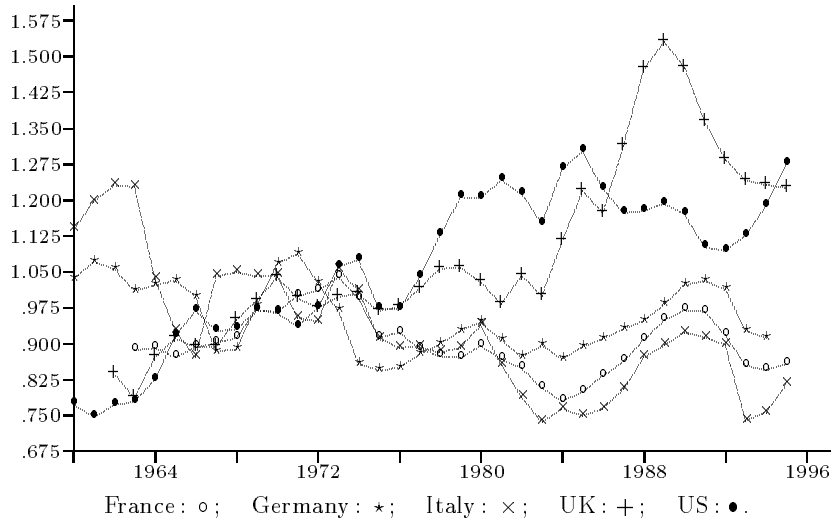


Figure 28 The Share of Investment in the Gross Domestic Product (Index 1970 -1974)=1



2. *Profitability.* Investment is a function of the profit rate. If the profit rate is too low, investment is weak, and conversely for large profit rates. One reference in this analysis could be the *sign* of profits. As long as profits are positive, investment goes on ; if they become negative, investment is stopped. One can also refer to an implicit benchmark, a kind of minimum profit rate ; investment can be determined as an increasing function of the difference between the prevailing profit rate and 0 or this benchmark. Finally, investment can be compared to the interest rate, as discussed below.

3. *Interest rates, finance, and indebtedness.* Investment is also influenced by financial determinants. Large (nominal or real) interest rates discourage investment (or the difference between the profit rate and the interest rate). It is often suggested that the comparison between the profit rate and the interest rate may stimulate financial investments instead of real investment if interest rates are comparatively large. Investment is also sensitive to indebtedness. Firms may choose to use their cash to diminish their debts, instead of investing.

To this, one must add the arbitration between domestic investment and investment abroad (the flows of Foreign Direct Investment in and out a country). The case of France shows that the excess of Foreign Direct Investment in foreign countries over Foreign Direct Investment from foreign countries, as a percentage of the Gross Domestic Product, amounted to 1.83% in 1996 (BÉNECH-CALVET S. 1997). This phenomenon is far from being negligible.

Of course, these explanations are not exclusive. For example, in a context of low profitability and large indebtedness, firms may want to restore their financial structure. To some extent, these explanations all played a role in the slowdown of investment that was manifested in the structural crisis of the 1970s, and in the present difficulty of the recovery. The boom of investment around 1990 was short-lived, but it attests the ability of investment to rebound if underlying conditions are improved.

VIII - Interest Rates, Debts and Finance

Consider first interest rates. Figures 29 and 30 plot long-term and short-term interest rates, corrected for inflation, *i.e.*, real interest rates. A preliminary observation is that the two pictures are very similar. There is no lasting significant difference in levels. Three periods can be clearly distinguished:

1. Between 1961 and 1970, these rates fluctuated around 2.2% for long-term rates and 1.4%, for short-term rates.

2. With the wave of inflation in the 1970s, many of these rates became negative.

3. Then, came the monetary shock of 1979. Two plateaus have now been reached at 5.2%, for long-term rates, and 4.5%, for short-term rates. It is interesting to notice that, abstracting for short fluctuations and specific countries, no trend is clearly apparent, even in recent years, excepting the US (1.5% for 1990-1994).[38]

The following conclusion emerges: *the 1979* coup ushered in a new phase in the evolution of capitalism with large interest rates.

Real interest rates account for the inducement to borrow at a given point in time, assuming that present inflation rates will be maintained.[39] There is, however, another facet to the debt problem. The cost of holding a debt depends on the conditions prevailing when the loan was made and of the exact deal (flexible or fixed interest rate). An interesting variable, in this respect, is the *apparent interest rate*, *i.e.*, the ratio of interest paid to the outstanding debt stock. Because of the deficiencies of data, we limit this investigation to France and the US. We already briefly commented on this variable (in figure 3). (These rates have also been corrected for inflation.) A similar computation can be made for the *net debt*. The ratio is the net flow of interest paid and received to the stock of debts diminished by the value of financial assets (excluding the shares of other corporations held within financial assets).

The same picture obtains in figure 31 than for real interest rates. Indebtedness is still historically costly.[40] This figures shows that the global outcome of this twofold process of borrowing and lending is far from being neutral, but remained costly for enterprises in the average. Of course, a strong heterogeneity among firms exists. Firms borrow and lend to quite different degrees.

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38. In particular, if one takes account of the relationship of interest rates to business-cycle fluctuations as in figure 41.

39. Or that they will be maintained for a number of years.

40. This net apparent interest rate, i_n, depends on the interest rate on debt, i_p, on that received on financial assets, i_r, and of the ratio of financial assets to debts, φ:

$$i_n = \frac{\text{Interests paid} - \text{Interests received}}{\text{Liabilities} - \text{Financial Assets}} = \frac{i_p - \varphi i_r}{1 - \varphi}$$

Assuming $\varphi < 1$ and $i_p > i_r$, $i_n \nearrow$ if either $i_p \nearrow$, $i_r \searrow$, or $\varphi \nearrow$. This latter effect explains why i_r reached such high levels in 1972 and 1990.

Figure 29 Real Long-Term Interest Rates

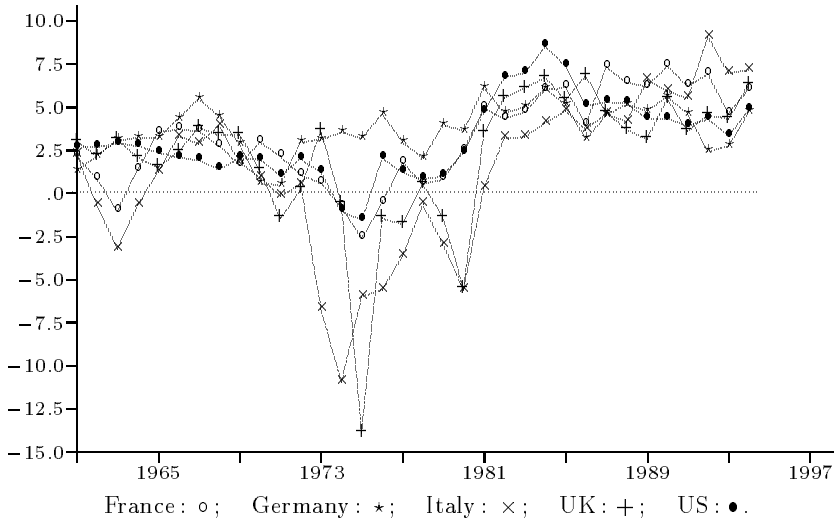


Figure 30 Real Short-Term Interest Rates

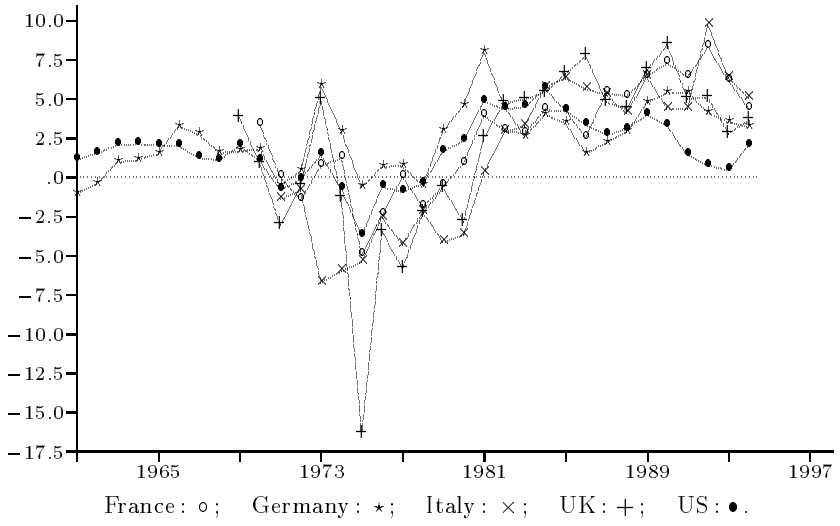


Figure 31 Real Apparent Interest Rate on the Net Debt Stock

A second manner of looking at the degree to which firms are affected by indebtedness is to consider the flow of interests paid. Since they simultaneously support (as borrowers) and benefit (as lenders) from large interest rates, we choose the net flow of interest. This flow can be related to profits before interest payments. This is done in figure 32 that depicts the ratio of net interests to the Net Operating Surplus. The share of interests in profits had already risen during the 1970s in relation to the decline of the profit rate. When interest rates soared after 1979, net interest rose, in the early eighties, to more than 80% of profits before interest payments in France and Italy. (The series is not available for the UK.) In France, profits after interests were nearly reduced to zero in 1982, although the recession was less severe in this country. After 1982, the profit rate before interest payments began to rise, but the mass of interests remained very large. This burden appears less important in Germany and the US. But the ratio rose to nearly 40% in 1982. After 1990, a sharp divergence was observed between Germany, where a new rise occurred, while this rate diminished in the US.

Another striking image of this increasing burden of interests is described in figure 33, which presents the ratio of the flow of net interest payments to the value of tangible assets, for France and the US. This series directly measures the loss of profit rates, in percentage points, due to net indebtedness. In both countries, this rate significantly increased, at least until the 1990s. The significance of the recent decline is still unclear. Is it the first symptom of a new trend, or a short-term fluctuation ?

We will finally discuss indebtedness *per se*. What were the masses of debts ? How did they evolved ? Because of the limitations of data bases, we will again limit

Figure 32 Net Interest Payments as a Share of Profits (Net Operating Surplus)

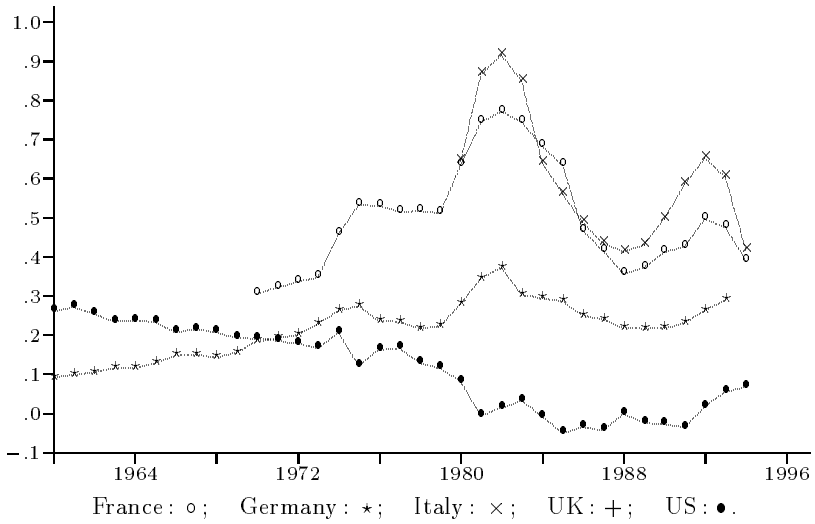
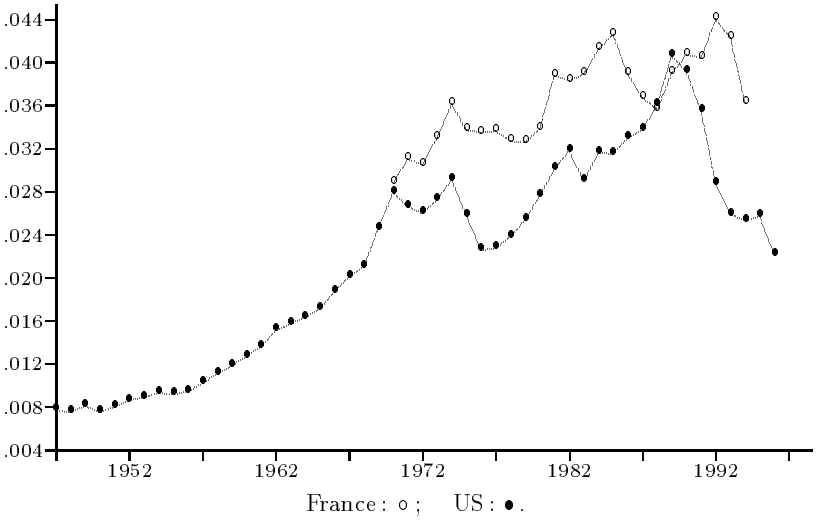


Figure 33 The Ratio of Net Interest Payments to the Stock of Fixed Capital



the investigation to France and the US. Figure 34 compares total liabilities to total tangible assets. While this ratio was originally declining in France, it began to increase after 1982, in the wake of the rise of interest rates. The profile of the same ratio appears very different in the US. Its trend was constantly upward since World War II, with a sharp acceleration since 1980. A slowdown is apparent in the 1990s. This figure documents a specific feature of US non-financial firms. They developed a strong financial activity with growing stocks of debts as well *as financial assets*.[41]

We will first abstract from the holding of shares. Figure 35 plots the ratio of these financial assets to tangible assets. The difference with France is dramatic.

Liabilities and financial assets, excluding shares, are of the same order of magnitude, but debts are larger. Thus, debts finance a fraction of tangible assets.[42] As shown in figure 36, this proportion was rather stable in France and declining in the US, with the exception of a very recent and sudden rise.

Further complexity results from the fact that firms also purchase large stocks of shares, which are part of their financial assets. Financial national accounting in the US (Flows of Funds) subtract these amounts from financial assets and from enterprises own funds. This phenomenon is, therefore, not apparent. This is not true for France. Figure 37 depicts the ratio of the stock of shares (at market value) to tangible assets in France. It rose from about 20% in the 1970s to more than 100% in 1993 ! This new behavior of firms is a basic feature of the new financial structure of capitalism.

In spite of the difficulties associated with this financial activity of non-financial firms, all indicators converge to show the *increasing burden of indebtedness*. It developed during the 1970s, culminated during the 1980s, and is still observable with some qualification for the 1990s. Indebtedness had, and is still having, important consequences concerning investment, therefore, indirectly concerning unemployment.

Investigations by banks, including direct inquiries, point to such a strategy of going out of debts.[43] This is described as the main cause of low investment. In addition, these studies also show the strong heterogeneity among larger and smaller firms. Beginning in 1980, French large corporations were successful in diminishing their debts, thus reacting to the new large levels of interest rates, while small firms did not.[44]

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41. In 1996, these financial assets amounted to 5,386 Billions of dollars. The larger component is "Miscellaneous", amounting to 3,292, then trade receivable, with 1,267, and checkable deposits and currency, with 286. These figures exclude shares.

42. As we have shown, both the ratio of liabilities to tangible assets and that of financial assets to tangible assets rose in the US. This financial pattern can also be approached using the ratio of net worth to tangible assets, since :

$$\frac{\text{Net Worth}}{\text{Tangible Assets}} = 1 + \frac{\text{Financial Assets}}{\text{Tangible Assets}} - \frac{\text{Liabilities}}{\text{Tangible Assets}}$$

43. PARANQUE B. 1995.

44. CONSEIL NATIONAL DU CRÉDIT 1995.

Figure 34 Liabilities as a Proportion of Tangible Assets

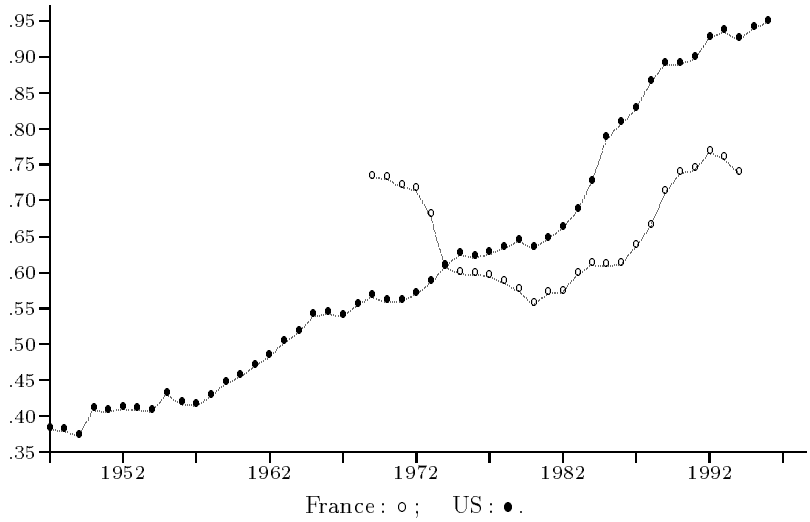


Figure 35 Financial Assets (Excluding Shares) as a Proportion of Tangible Assets

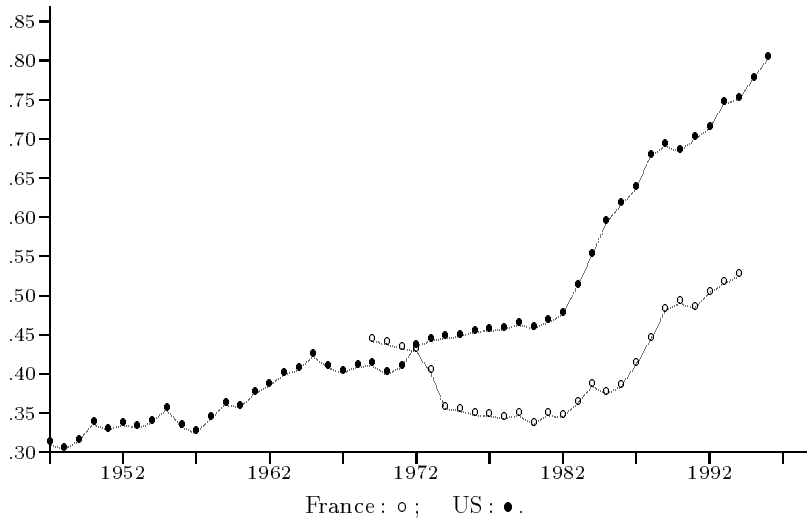


Figure 36 The Ratio of Net Worth to Tangible Assets

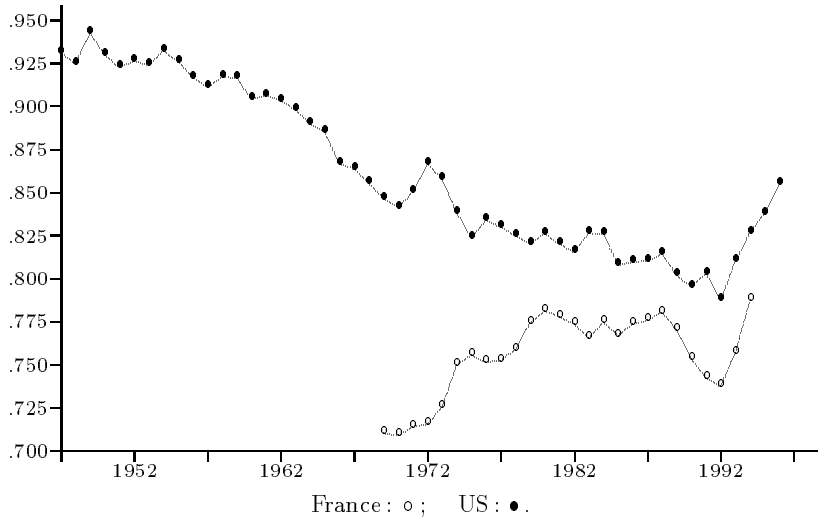


Figure 37 The Ratio of Financial Assets and of the Stock of Shares (at Market Value) to Tangible Assets in France

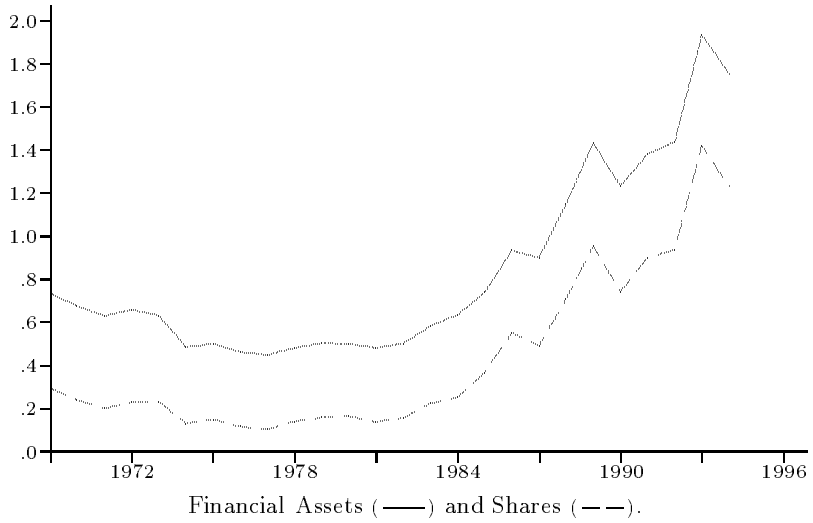
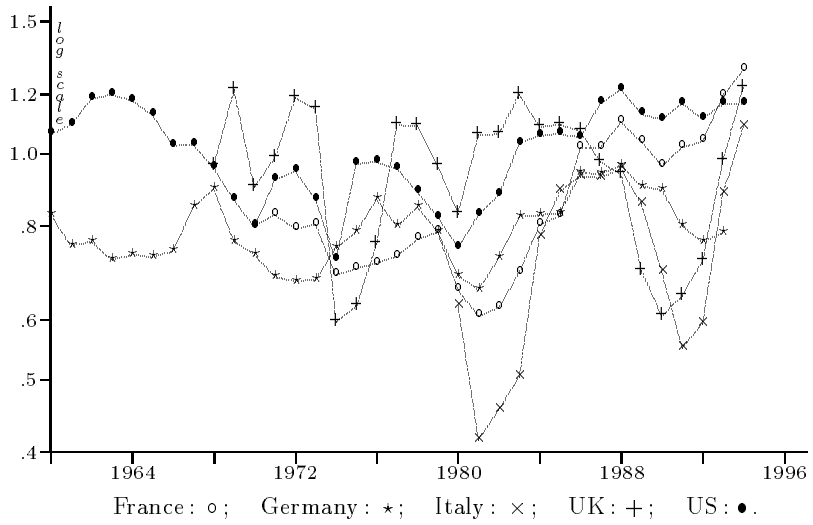


Figure 38 Rates of Self-Financing



The present large values of the rate at which investments are financed by enterprises own resources (self-financing) could account for the latter stages of this strategy. Rates of self-financing are plotted in figure 38. These rates are, however, difficult to interpret. First, the various countries are structurally distinct in this respect, as is well known. In some countries, firms traditionally rely more heavily on credit than in others. Second, large rates of self-financing can *either mirror large profits or large investments*. For example, if investment increases only moderately in a boom, the rate of self-financing rises strongly. But a large self-financing may also indicate that firms are reluctant to invest even under poor macroeconomic conditions. Figure 38 shows that large rates were usually associated with an active macroeconomy, and conversely for recessions. For example, the rate of self-financing reached more than 1.1 during the boom of the mid-1960s in the US. Rates declined strongly during the 1982 recession in all countries with the exception of UK. But this pattern tends now to be *inverted* since the late 1980s. The bulge in the activity (figure 41) in the mid-1990s, was particularly strong in Europe. It coincided with low rates of self-financing in Germany, Italy, and the UK, signaling that firms were ready to borrow, as is evident in the variables displayed above (for example in figure 32). But no such thing happened in France and the US. In the recession of the early 1990s, all countries, excepting Germany, reached self-financing rates above 1 ! With some delay, it seems now that all countries are actively engaged in going out of debts. This is probably an important factor in the explanation the stagnation of investment despite the rise of the profit rate. Our guess is that all countries will finally adapt to large interest rates, but the cost in terms of unemployment is quite large in Europe.

Figure 39 The Price of Shares Corrected for Inflation (Index, 1990=1)

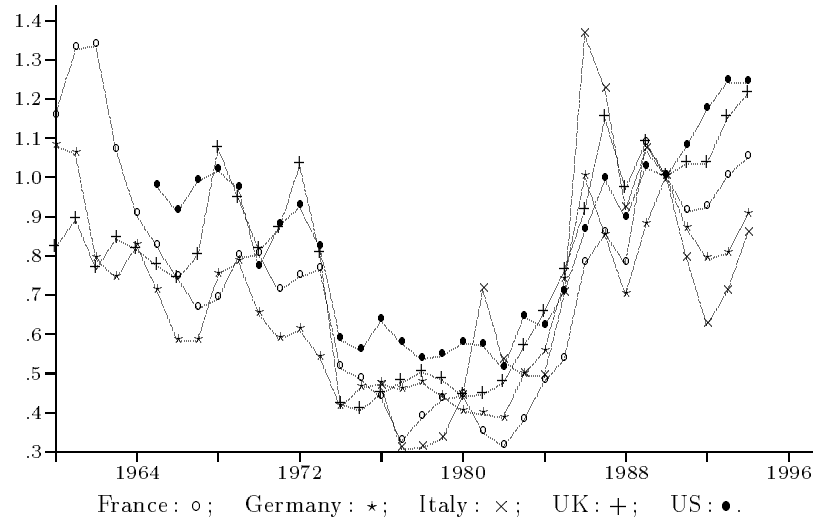
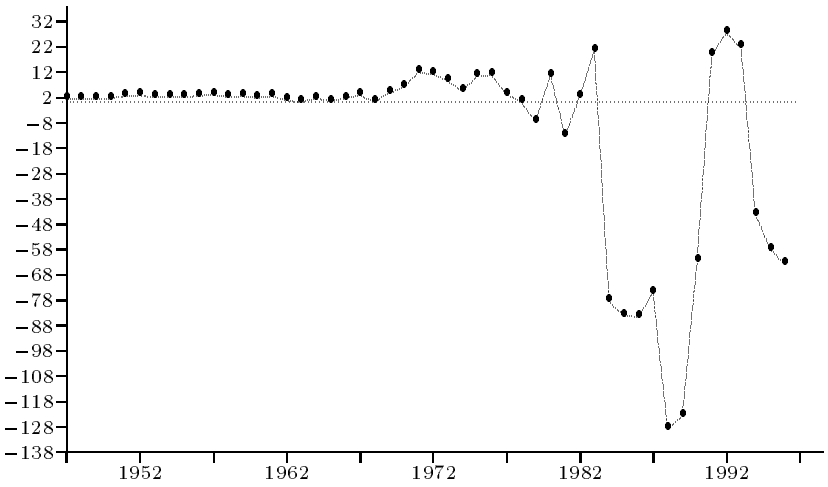


Figure 40 Net Flow of Corporate Equity Issues in the US



A further element in this analysis is provided by the movements of the stock market. Figure 39 displays the market values of shares, corrected for inflation. The profiles are quite similar for the different countries. All indexes declined in the 1970s; and a sudden rise occurred after the recovery from the 1982 recession. New fluctuations were subsequently observed at levels similar to those of the 1960s. Then, a divergence is apparent after 1990, with the US and UK soaring to new heights, France stagnating, and Germany and Italy declining.

It is difficult to interpret the rise in the mid-1980s. This movement coincided with the sharp increase of the amount of shares held by enterprises. This is evident for France in figure 37. This series is not available for the US, but this hypothesis is strengthened by the dramatic fluctuations of the ratio of equity issues by corporations to tangible assets in the US (figure 40). This series was traditionally positive, meaning that firms were issuing more shares than they were purchasing. Negative figures were later observable, indicating a reversed situation: large purchases of previously issued shares. The series became *negative* in the mid-1980s. This was precisely the timing of the rise of the stock market. The recent hike could be explained by the new purchases from 1994 onward.

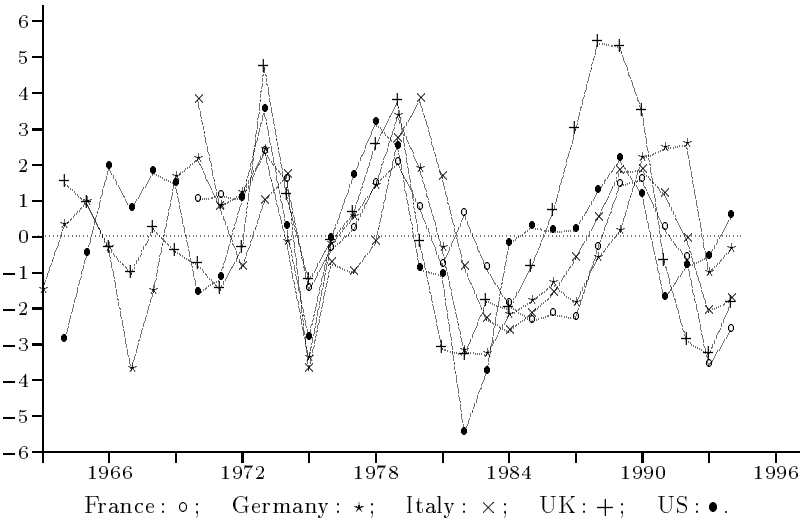
These observations all converge to the thesis of the establishment of a new financial structure of capitalism, with a tighter network of relationships among firms and a combination of real and financial activities.

IX - Macroeconomics

The overall argument in this analysis links the wave of unemployment of the 1970s to the deficient growth of the capital stock (of productive capacity), therefore to the weakness of investment. Investment is a function of the profit rate, the interest rate, and the level of activity in the economy. This is where the macroeconomy steps on the stage.

The "level" of activity in the economy compares actual output to productive capacity. For a given technology, the existing stock of capital is adapted to a kind of "normal" output, but the degree of its utilization may vary. The utilization of productive, for the total economy, fluctuates a few percentage points above or below its "normal" value. This is measured by the *output gap*.

Figure 41 The Output Gap



The output gap is displayed in figure 41. It depicts business-cycle fluctuations. One can incidentally note that these fluctuations, for the various countries, are correlated, with several significant differences.[45] We will concentrate here on the period following the 1982 recession. The recovery during the second half of the 1980s is clearly depicted, as well as the fall around 1993. A significant difference between the US and Europe is that during periods of stabilization, such as 1984

45. The 1975 recession is clearly apparent, as that of 1982.

-1987 and 1993-1996, the US returns to normal, while Europe stagnates at lower levels (in particular in France), for about 2 or 3 percentage points.

This deficiency has significant consequences concerning unemployment:

1. A normal utilization of productive capacity would have allowed immediately for an output larger of 2 or 3%. Unemployment would have been reduced, actually the business-cycle component of unemployment.[46] This would not have solved the unemployment problem (approximately 12%).

2. The main point concerns the effects of low utilization rates on investment. When firms are convinced that their productive capacity is in excess of demand, they obviously are not induced to invest. This situation contributes, year after year, to a slower accumulation.

The lower levels of the output gap in Europe are linked to policies, basically monetary and exchange rate policies. (Fiscal policy is discussed in the next appendix.)

Monetary policy in all countries relates to price stability. As is well known, a wave of inflation developed during the 1970s (figure 42). A dramatic change in monetary policy occurred in 1979, with real interest rates soaring to levels unprecedented since World War II. The purpose was to curb inflation at any cost. Monetary policy always combines, in different proportions, the levels of interest rates and direct credit rationing. It affects to different degrees, the various agents in the economy, firms (larger and smaller), households and the state. The discussion of these mechanisms oversteps the limits of this study.

As shown in figure 42, the expected outcome was reached. A spectacular decline of the rate of inflation was observed after the recession of 1982. Since then, inflation rates are low. One can, however, notice that the 1990 "boom" coincided with a small resurgence of inflation. It did not survive to the new slide downward. Monetary policy is at issue here (this is where the US and Europe are different).

The levels of exchange rates are described in figure 43. The variable displayed is the ratio of purchasing power parity exchange rates to actual exchange rates, for each currency toward the dollar. A purchasing power parity index is a fictitious rate of exchange between the various currencies. If these rates prevailed, a traveller holding a given sum in dollars would enjoy the same purchasing power in any country.[47]

It is not possible to assess exchange rates using a single indicator, but these series suggest several observations. The sudden transformation corresponding to the breakdown of the Bretton-Woods agreement around 1973 is evident in this figure. The dollar was overvalued vis-à-vis all currencies; then Europe was split

46. One percentage point of output does not create an additional employment of 1%. The elasticity of employment to output is about .7 in the US, and quite lower in a country like France.

47. If he or she bought goods in the same proportions as they coexist in total output.

Figure 42 Inflation Rates (% Per Year, Moving Average)

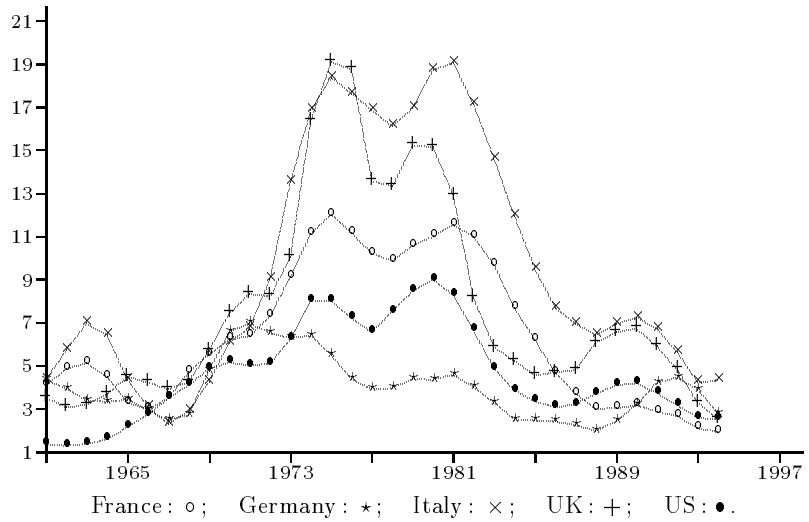


Figure 43 Ratios of Purchasing Power Parity Exchange Rates to Actual Exchange Rates

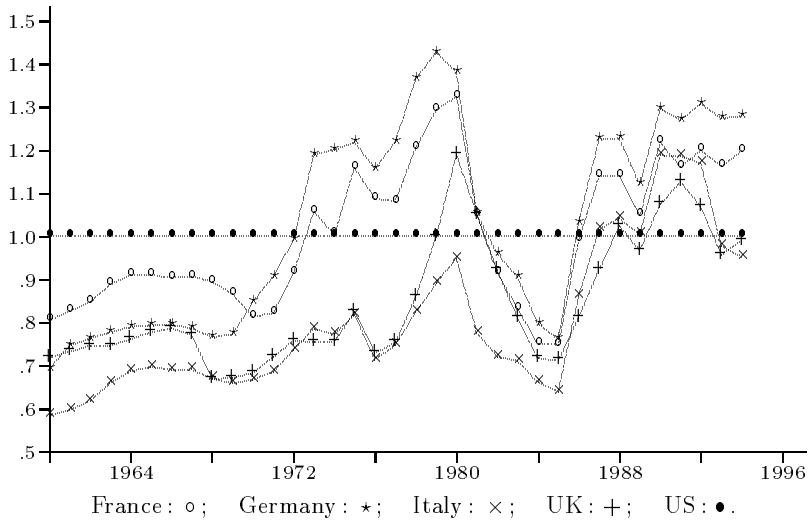
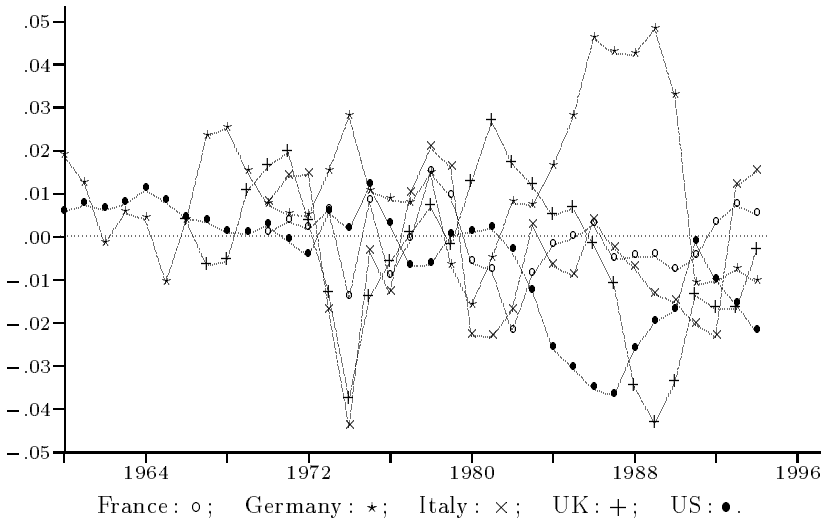


Figure 44 Ratios of the Current Balance of Trade to GDP



into two groups, France and Germany with high currencies, and Italy and UK, with lower rates. This situation was maintained until the dramatic rise of the dollar in the early 1980s. Then, the pattern of the 1970s was reestablished for France and Germany, but UK and Italy moved closer to these latter countries. But the crisis in Europe led in 1992 to the devaluation of these latter currencies.

Two specific traits of the US must be noted. First, the new rules established after the crisis of the dollar seem quite favorable to this country. Second, the spectacular rise of the dollar in the 1980s illustrates the large capability of this country to act without being constrained by the rest of the world. This is further documented in figure 44, which describes the current balance of foreign exchanges as a proportion of GDP. The large deficits for the US, in the 1980s, can easily be observed. Clearly, the benefits in Europe were for Germany.

The cases of UK and France, for recent years illustrate the impact of business-cycle fluctuations. A major fluctuation of activity occurred in UK with a low output gap (figure 41) in the early 1980s and records levels at the end of the decade and at the beginning of the 1990s. This fluctuation resulted in a surplus in the current balance during the recession, and a deficit during the boom (a well-known association). The same is true in France were the recent low output gap is associated with a surplus of trade.

X - Government Revenues and Expenses

All government revenues and expenses are considered globally in this appendix, including health insurance and retirement. The ratios of the balance of government accounts to GDP are plotted in figure 45. In the 1960s, these balances fluctuated around zero. Deficits deepened in the 1970s and 1980s, as is well known. Larger deficits are apparent in relation to the new slide downward in 1993 in France and the UK. The amplitude of these deficits is dramatic in Italy.

A large fraction of these deficits can be attributed to the payment of interests. Figure 46 plots the same balance excluding interest payments. Excepting Italy, the alternate surplus and deficits that prevailed prior to the crisis were basically prolonged to the entire period. These balances do not include the capital gain due to inflation. *The exclusion of interest payments offset structural deficits.*

As can be guessed, the apparent real rate of interest, *i.e.*, the ratio of net interests to the outstanding debt, corrected for inflation, mirrors the movements of real interest rates as in figures 29 and 30. They diminished to negative values in the 1970s, and rose sharply into the 1980s.

The policy of high interest rates is basically responsible for the new rise of government debt during the 1980s, as shown in figure 48.

Figure 45 Ratios of Government Surplus or Deficits to GDP

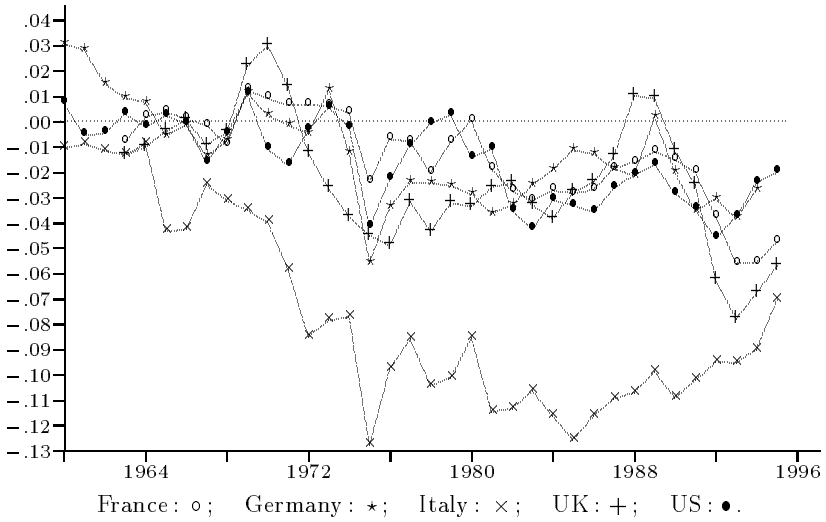


Figure 46 Ratios of Government Surplus or Deficits, Excluding Net Interests, to GDP

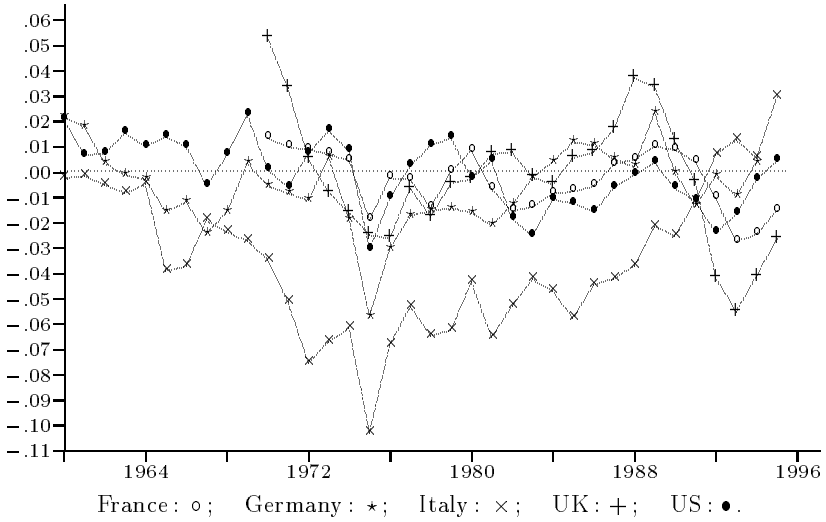


Figure 47 Apparent Real Interest Rates on Net Government Debt

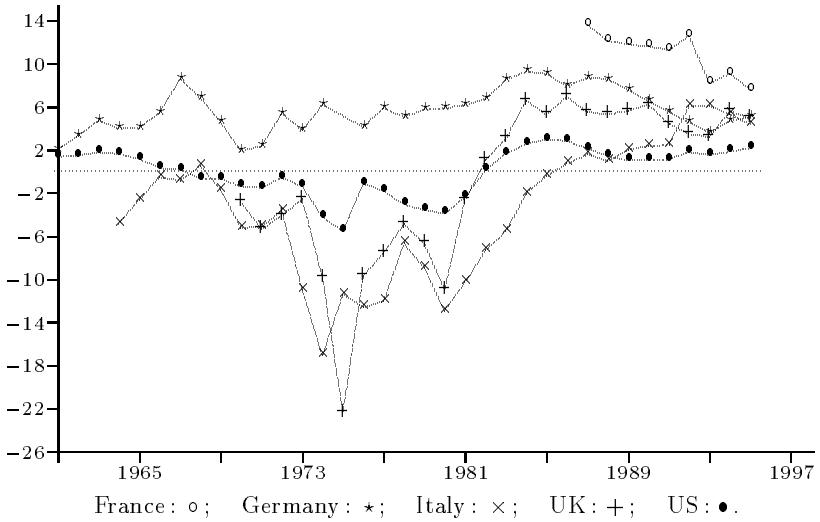
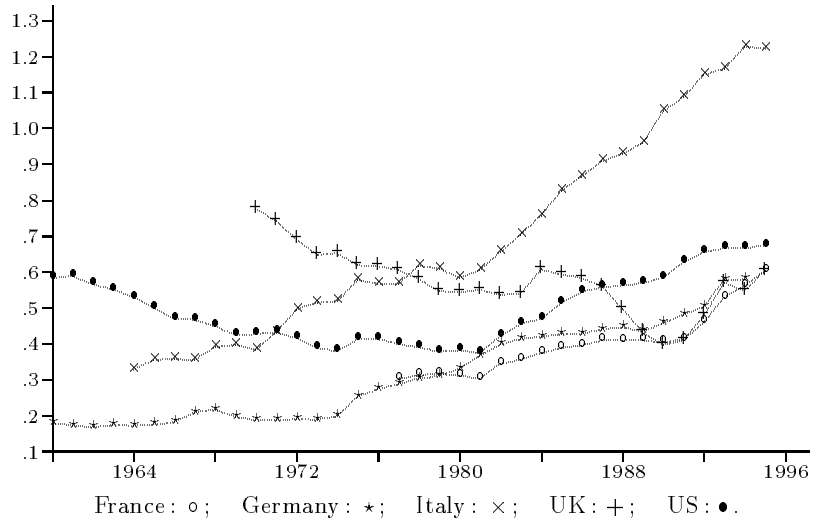


Figure 48 Ratios of Net Government Debt to GDP



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