PROFIT RATES : GRAVITATION AND TRENDS

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RÉSUMÉ

TAUX DE PROFIT : GRAVITATION ET TENDANCES

Cette étude est consacrée au *calcul* des taux de profit aux États-Unis depuis la seconde Guerre Mondiale pour divers grands secteurs et neuf branches. La recherche porte sur la gravitation des taux de profit des diverses branches autour d'une même valeur et la tendance du taux de profit moyen, faisant écho aux travaux des économistes classiques et de Marx, ainsi qu'aux recherches récentes dans ce domaine. Elle prend en compte les révisions récentes des stocks de capitaux par le BEA. Les principaux résultats sont les suivants : (1) Les taux de profit des branches tendent effectivement à graviter autour d'une valeur commune ; (2) Au début des années 1980, le taux de profit avait décru d'environ la moitié de sa valeur moyenne sur la décennie 1956-1965 — approximativement la moitié de cette chute a été corrigée depuis le milieu des années 1980 ; (3) Une partie importante de la chute du taux de profit fut compensée, pendant les années 1970, par la dévalorisation de la dette par l'inflation (la faiblesse des taux d'intérêt réels). Un résultat important est que ni la gravitation des taux de profit ni sa baisse ne sont observables dans un sous-ensemble de branches, comme les chemins de fer ou l'électricité, le gaz et l'eau, qui détiennent d'énormes quantités de capital par rapport à leur production et leur emploi.

ABSTRACT

PROFIT RATES : GRAVITATION AND TRENDS

This study is devoted to the *computation* of profit rates in the US economy since World War II for various broad sectors and nine industries. The investigation focuses on the gravitation of profit rates among industries around a common value and the trend of the average profit rate, in line with classical economists, Marx, and contemporary research in this field. It takes accounts of the recent revision of capital stocks by the BEA. The main results can be summarized as follows : (1) Industrial profit rates do tend to gravitate around a common value ; (2) In the early 1980s, the profit rate had declined to about half of its average value over the decade 1956-1965 — since the mid-1980s, about half of the decline had been recovered ; (3) The effects of the decline of the profit rate were significantly offset during the 1970s by the devaluation of debt resulting from inflation and the low levels of real interest rates. An important finding is that *neither* the gravitation of profit rates *nor* the decline of the profit rate are observable within a subset of industries, such as *Railroad transportation* or *public utilities*, which utilize very large amounts of fixed capital in comparison to employment or output.

MOTS CLEFS : Taux de profit, technique, gravitation, chute du taux de profit, intérêts.

KEYWORDS : Profit rate, technology, gravitation, falling profit rate, interest.

J.E.L. Nomenclature : B14,L70.

Introduction

The profit rate is a central variable within classical-Marxist analysis. Are profit rates equalized among industries? Did the profit rate decline? Did it recover in the latter decades? If so, to what extent? A large number of studies have been devoted to these issues, including our own work on this issue during the last two decades.

Is it necessary to return, once again, to such basic issue? One reason to revisit these problems is that the *Bureau of Economic Analysis* has recently revised, to significant degrees, its estimates of capital stocks for the US economy. But independently of these revisions, those who have worked on these issues are familiar with the broad variety of problems posed by the computation of profit rates. A lot depends on definitions and sources, and it is difficult to answer in a straightforward manner to the above interrogations. Much has been said, but it is the ambition of this study to provide new results.

The purpose of the investigation below is to *compute* profit rates for the "aggregate" economy and its various components (sectors and industries), and *to establish as firmly as possible simple stylized facts*. This implies that we will not attempt to explain, neither theoretically nor empirically, the tendency of industrial profit rates to gravitate around a common value, the decline of the profit rate after World War II, or to determine the origin of the recent recovery of profitability levels in the US.

The major conclusions can be summarized very briefly:

1. Industrial profit rates do tend to gravitate around a common value.

2. In the early 1980s, the profit rate had declined to about half of its average value over the decade 1956-1965. Since the mid-1980s, about half of the decline has been recovered.

3. The effects of the decline of the profit rate were significantly offset during the 1970s by the devaluation of debt resulting from inflation and the low levels of real interest rates.

These results must, however, be qualified in two respects. The first, rather obvious, qualification is that a fraction of the economy must be *a priori* excluded from the investigation (such as *Government*, but also other segments of the economy). The second, which we consider an important finding, is that *neither* the gravitation of the profit rate *nor* the decline of the profit rate are observable within a subset of industries (that we denote as *Highly capital intensive industries*), such as *Railroad transportation* or *public utilities*, which hold very large amounts of fixed capital in comparison to employment or output. It is not clear, however, whether this exception relates to the excessively large BEA's estimates of fixed capital for these industries (which have been considerably increased in the recent revision, in relation to larger service lives), to a fundamental economic mechanism, or to both factors in combination.

This study divides into six parts. Part 1 briefly summarizes the main findings concerning gravitation and the trend of the profit rate. Part 2 defines the general framework of analysis, the place of the profit rate within classical-Marxian economics, its definitions, and the discussion of the segment of the economy in which the gravitation of profit rates around a common value should, and can actually be, investigated. Part 3 is entirely devoted to the practical delimitation of this expected field of capital mobility. Part 4 presents the results obtained concerning gravitation: the industries in which it is observed, and the

Highly capital intensive industries, where it is not. Part 5 investigates the trend of the profit rate for *Business*. Part 6 provides the same information for the sector, and returns to the issue of gravitation for the financial sector.

This document presents the main results. Additional information is contained in appendices available on the internet.[1] The last appendix (A.15) supplements the above investigation by an analysis of the respective impacts of technology and labor cost on the profit rate, including the relative price of output to fixed capital.

1 - Summary of the main findings

We begin with the gravitation of profit rates around a common value :

1. It is a *priori* obvious, for theoretical reasons related to the mechanisms accounting for profit rate gravitation (the classical *mobility of capital* guided by profitability differentials), that sectors like *Government* or *Real estate* will not be part of this process. The income of *Government* is mainly composed of the wages of civil servants, and capital is not invested by the state for the purpose of maximizing the profit rate. To a very large extent, *Real estate* is composed of structures (housings, or residential capital, and nonresidential capital) owned by households. Other industries, that we denote as *Individual business*, like *Agriculture* where production is mostly performed by self-employed persons, with very specific features, or the activity of medical doctors which is only secondarily capitalist, should also not be expected to be part of this process of gravitation.

2. In the analysis of gravitation, the definition of the profit rate is crucial. Profits must be understood as close as possible to what is actually obtained by firms, *i.e.*, defined after tax and interest. The capital stock should incorporate all components of capital, *i.e.*: (1) include fixed capital and inventories, (2) include some measure of financial assets, and (3) take account of debt. The most appropriate measures are not available, and one must be content with tangible assets (fixed capital plus inventories). This measure cannot be used for *Finance*, since tangible assets only represent a limited fraction of the total capital held in this industry. For this reason, the investigation of gravitation for *Finance* is relegated to the final part of this study.

3. Gravitation is observed for five industries denoted as the *Nonfinancial core capitalist sector* (*NF-Core*) : manufacturing *Durable goods* and manufacturing *Nondurable goods*, *Wholesale trade*, *Retail trade*, and a subset of services that we call *Capitalist services*. Technology is very heterogeneous within these industries, some being largely capital intensive and others not ; some industries hold large amounts of inventories, others do not ; some pay large indirect business taxes, others do not. It is clear that prices correct for these structural differences. It is also remarkable that any improvement in the definition of the profit rate increases the tightness of gravitation, and we can only regret that better measures are not available. We finally show that the profit rate of *Finance* and that of nonfinancial corporations tend also to gravitate around a common value, in spite of the impact of policy changes.

1. http://www.cepremap.cnrs.fr/~levy/dle1999e.htm

DEFINITIONS

Business: The total private nonresidential economy.
NF-Core (Nonfinancial core): *Business* minus (1) the **Highly capital intensive industries** which hold large amounts of fixed capital and are not part of profit rate gravitation, and (2) *Finance*.
Corporate: All private corporations.
Restricted Corporate: the *NF-Corporate* minus (1) an even more capital intensive fraction of the *Highly capital intensive industries* (the **Extremely capital intensive industries**), and (2) *Finance*.

r_b = (Net product − Labor compensation)/Fixed capital.
r_n = (Net product − Labor compensation − Indirect bus. taxes − Net interest)/ (Fixed capital + Inventories).

Consider now the trend of the profit rate. The results obviously depend on: (1) the sector, (2) the definition of the profit rate, and (3) the period. Table 1 provides a few basic figures for two definitions of the profit rate and four sectors. The first profit rate, r_b, is the ratio of a "broad" measure of profits (the net product minus total labor compensation) to fixed capital. The use of this measure is appropriate in an analysis *à la Marx* of the trend of the profit rate, focusing on technology and distribution. The second profit rate, r_n, is the ratio of a "narrow" measure of profits (profits after indirect business tax and interest) to the sum of fixed capital plus inventories. (It is the definition which is used in the analysis of gravitation.) The largest sector, *Business*, is the private nonresidential economy. It is broken down into three components: (1) *Finance*, (2) *Individual business*, and (3) the *NF-Capitalist business* (which accounted, in the average since 1948, for 71.8% of the net product of total *business*). The *NF-Capitalist business* is, itself, composed of the *NF-Core*, where gravitation is observed, and *Highly capital intensive industries*, where it is not. The *NF-Core* accounted for 82.2% of the net product of the *NF-Capitalist business*. The *Corporate sector* is also decomposed into three components: (1) the *Financial corporate sector*, (2) the *Extremely capital intensive industries* (a subset of *Highly capital intensive industries*, accounting for 8.2% of the net product and 40.9% of the capital stock of the *Corporate sector*), and (3) the *"Restricted" corporate sector*, *i.e.*, a fraction of the *NF-Corporate sector* from which *Extremely capital intensive industries* have been excluded.

Table 1 documents in a more detailed manner the stylized facts sketched in the introduction. Column (1) is devoted to the decline of the profit rate, column (2) to the rise since 1982, and columns (3), (4), and (5) compare the rise since 1982 to the previous fall.

Consider first the fall of the profit rate. Column (1) displays the ratios of the profit rate in 1982 to its average value for the decade 1956-1965.[2] The following results are apparent:

1. Overall, the profit rate was divided by a factor 2.

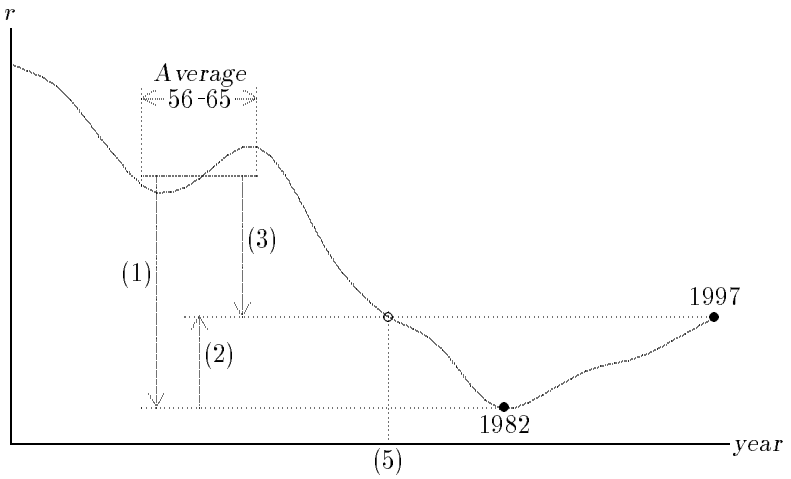
2. The value of the profit rate just after World War II, such as in 1948, does not appear well established. We choose the decade 1956-1965, which combines the recession of 1958 and the boom of 1965, as a benchmark.

Table 1 - The trends of the profit rate in four sectors (columns (1) to (4) are in percentage points)

Sector	r	(1)	(2)	(3)	(4)	(5)
Business	r_b	57.5	148.2	85.2	65.2	1970
Business	r_n	33.2	213.0	70.7	56.1	1975
NF-Core	r_b	46.4	153.6	71.3	46.4	1974
NF-Core	r_n	39.3	167.8	66.0	44.0	1970
Corporate sector	r_b	65.3	156.4	102.1	106.1	1969
Corporate sector	r_n	38.7	214.2	82.8	72.0	1970
Restricted corporate	r_b	47.1	156.4	73.6	50.2	1974
Restricted corporate	r_n	34.7	178.4	62.0	41.8	1970

(1) Ratio of the profit rate in 1982 to its average value for the decade 1956-1965.
(2) Ratio of the profit rate in 1997 to that of 1982.
(3) Ratio of the profit rate in 1997 to the average for 1956-1965.
(4) Ratio of the rise between 1982 and 1997 to the fall as between 1956-1965 and 1982.
(5) Earliest year after 1965 whose profit rate has been recovered in 1997.

Figure 1 Assesment of the trends of the profit rate



2. The *corporate sector* declined less than total *Business*, signaling that the *Noncorporate sector* fell more.

3. The decline was larger for the *NF-Core* and the *Restricted corporate sector*. This is due to the fact that both of these sectors exclude a subset of industries, the *Highly capital intensive industries*, whose profit rate did not decline (remaining very low). (Obviously, the decline of the profit rate in the *NF-Core* is also observed for each of the five industries listed above, which compose this sector, and whose profit rates tend to gravitate around a common value.)

4. The profit rate in its second definition, r_n, showed a steeper downward trend, due to the burden of interest paid.

Consider now the new upward trend since 1982. When the lowest value of the profit

rate, in 1982, is taken as a benchmark, as in column (2) — independently of the amplitude of the earlier fall — it appears that the profit rate in 1997 had been increased by approximately 50% or 100% of its lowest value. It rose more for r_n, due to the recent alleviation of the burden of interest. Two measures of the recovery — in comparison to the amplitude of the fall — are displayed in columns (3) and (4) :

1. They show that the largest recovery is observed in the *Corporate sector* for r_b, where the profit rate is back to its early levels. When indirect business taxes and interest are subtracted, as in r_n, the fraction of the fall recovered appears more limited.

2. Again, the capital intensive industries play a crucial role. When they are excluded, as in the *NF-Core* or in the *Restricted corporate sector*, the value of the profit rate in 1997 remains between 60 and 75% of its average value for the decade 1956-1965, and only half, or even less, of the fall is corrected by the recent rise.

Last, column (5) indicates that the profit rate recovered its value of the first half of the 1970s.

Further investigation can be made concerning the *Nonfinancial corporate sector*, for which more information is available concerning debt, financial assets, corporate taxes, and dividends received by corporations. For this sector, it is possible to compute net worth (or shareholders' equity), and to provide an estimate of the devaluation of debt resulting from inflation[3] :

1. In order to assess the effects of indebtedness, it is interesting to compare two alternative definitions of the profit rate abstracting or accounting for indebtedness : (1) profits before interest over tangible assets, and (2) profits after net interest, and after correction for the devaluation of debt by inflation, over net worth. It appears that indebtedness had overall positive effects on the profitability of corporations, though quite limited in general, *except during the 1970s* when real interest rates were very low. In this measure, the profit rate reached, during the 1970s, values similar to those of the 1960s. Thus, this measure of the profit rate did not decline until the early 1980s, when real interest rates rose. We consider this "inflation reprieve", offsetting the underlying fall of the profit rate over a decade, as an important phenomenon.

2. In this sector, it is possible to study the impact of taxation, including profit taxes. It appears that the share of profit taxes in total profits diminished since World War II and more than compensated for the rise of the burden of indirect business taxes. Overall, taxation acted as a significant countertendency to the declining profit rate.

3. Corporations hold important amounts of shares (issued by foreign corporations, since *Flow of Funds* set aside shares simultaneously issued by, and held within, the sector). Although dividends received represent a significant fraction of profits, their inclusion in a computation of the profit rate does not significantly modify its levels when profit rates are computed over the corresponding larger net worth of firms (as a result of the inclusion of shares in financial assets). The trend is also not clearly affected. (This is still the case in the latest years.)

A few simple stylized facts emerge from the investigation in appendix A.15 of the relative impacts of technical and distributional changes on the trend of the profit rate. The

3. What is at issue in this devaluation is the *net debt* of corporations, *i.e.*, total debt minus financial assets, excluding shares.

downward trend of the profit rate from the mid-1960s to the mid-1980s was the combined product of a decline of: (1) the productivity of capital (current dollar output / current dollar fixed capital), and (2) the share of profits. There was a significant price component in the decline of the productivity of capital (the rise of the relative price of fixed capital). While both the growth rates of the hourly labor cost and the productivity of capital diminished since the 1970s, the decline of the share of profits mirrored the larger slowdown of the growth of labor productivity. However, when the share of profits is measured after interest, this burden of interest paid appears comparatively very large. The recovery since the mid-1980s simultaneously results from the increase of the productivity of capital in constant dollars and the rising share of profits.

2 - General framework of analysis

This section defines the general framework of analysis, both theoretically and empirically. Section 2.1 is devoted to the notion of profitability itself, both the definition of the profit rate and its central role within classical and Marxist economics: (1) the gravitation of industrial profit rates around a common value as a result of the mobility of capital among industries, and (2) the historical trend of the profit rate since World War II. Section 2.2 discusses more technically the computation of the profit rate (profits and capital) and the choice between alternative measures depending on the issue considered. Section 2.3 delineates the contours of the field of capital mobility: Which industries provide a *priori* comparable alternative opportunities for investment to capitalists, allowing for the gravitation of profit rates? Section 2.4 defines what can be actually done on account of data limitation.

2.1 Profit rates within classical-Marxist economics

In a capitalist economy, production is typically undertaken by salaried workers within firms where a certain amount of capital has been invested by capitalists. The goal of this investment is the profits that capitalists obtain. These profits can be described as the "remuneration" of the capital advanced by capitalists.

Two basic variables are at issue: the total amount of capital and profits. Capital is a *stock*, which takes three forms: fixed capital (equipment and structures), inventories, and financial assets. Profits are a *flow*, the difference between the price of output and costs (including the depreciation of fixed capital). The profit rate is the ratio of this flow to this stock: *profits/capital*. Since the purpose of investment is profits, the profit rate measures, in a sense, the "success" of the operation, and this explains why this variable is so important within capitalism.

The profit rate must be distinguished from several related variables:

1. *The share of profits.* The share of profits in the net product (basically the sum of profits and labor compensation) is a ratio between two flows. It provides an interesting measure

of distribution but it does not allow for the evaluation of the success of an investment. Obviously, the profit rate and the share of profits are related :

$$\text{Profit rate} = \frac{\text{Profits}}{\text{Capital stock}} = \frac{\text{Profits}}{\text{Net product}} \times \frac{\text{Net product}}{\text{Capital stock}}$$
$$= \text{Profit share} \times \text{Productivity of capital}$$

However, the consideration of the share of profits in lieu of the profit rate ignores the impact of the capital stock.

2. *The profit margin*. This variable is the ratio of two flows, profits and all costs (wages, inputs, and depreciation). The same remarks can be made as for the share of profits. Note that, within macroeconomics, the profit margin corresponds to the share of profits. In this context, the margin is implicitly computed only over *labor* costs.[4]

3. *The interest rate*. This is the ratio of a flow, interest paid during one period, to the stock of debt outstanding. There is a conventional aspect in the interest rate in comparison to the profit rate. The yield and the repayments are decided in advance.

The importance of the profit rate is manifest in several respects :

1. A large profit rate provides firms with the necessary funds for the self-financing of their investment.

2. The expected profit rate influences the decision to invest. There are two aspects to this issue. First, a large expected profit rate is an inducement to invest, and the converse for a low profit rate. This is a crucial mechanism in the analysis of total investment within growth theory and macroeconomics, where the profit rate is often compared to the interest rate. Second, the profit rate is also a crucial variable in the comparison between several investments among distinct firms or industries. There, it is the *relative* profit rate that is at issue. Investment will tend to be larger where profit rates are expected to be larger, because capitalists are attracted by opportunities to make profits.

3. The profit rate is not only an inducement to invest, but also a sanction to previously invested capital. A low profit rate endangers the survival of a firm. A problem is posed by possible indebtedness, since the firm may not produce an adequate cash-flow to pay interest and principals on loans and, for the reasons indicated above, with a low profit rate, it is difficult to attract additional capital. As a result of the pressure low profitability places on liquidity, less profitable firms will have difficulty when confronted with unfavorable economic shocks (individual or collective, as during recessions).

Because of this broad variety of effects, the profit rate appears to be an important variable in the analysis of capitalism. It plays a prominent role in the occurrence of structural crises such as the crisis of the late 19th century, the Great Depression, and the crisis of the recent decades. It is a key variable in the periodization of capitalism. In particular, the assessment of the recent trends of the profit rate is at issue in the discussion of the perspectives now opened for capitalism.

All the above mechanisms are central within classical-Marxian economics. Smith, Ricardo, and Marx made two important statements concerning profit rates. It is the purpose of this study to show that these statements did not loose their relevance in contemporary capitalism. They are the followings :

4. $\text{Profit margin} = \frac{\text{Profit share}}{1 - \text{Profit share}}$

1. *Profit rates tend to be equalized among industries.* There is no reason that the production of a given commodity be more profitable than the production of any. If this were the case, investments would flow toward activities where the profit rate is larger, offsetting this difference. Following classical economists and Marx, this reaction on the part of capitalists produces a tendency for profit rates to be equalized among industries. A specific set of prices, called *prices of production*, prevail when this equalization is achieved. Because of constant perturbations (such as demand shocks, technical change, etc.), actual prices only tend to "gravitate" around these prices.[5]

This analysis raises several problems. First, from a purely theoretical viewpoint, it cannot be taken for granted that the mechanisms described yield the expected result. We contend that they do, under reasonable assumptions.[6] Technology is, however, heterogeneous among firms and industries. Our interpretation is that competitive mechanisms tend to equalize profit rates among industries *considered globally*, *i.e.*, for the "average" conditions of production, not among firms. Profit rate equalization compensates for structural interindustry technical and wage differences, but not for the relative efficiency of firms producing the same commodity within an industry. Firms performing poorly in the production of a given commodity get lower profit rates than those performing well. This heterogeneity exists within one country and among countries (with differences in technology and wages). Profit rate equalization should be studied internationally. (Obviously, the unequal development of international trade and of international capital flows poses specific problems.)

2. *The average profit rate manifests a tendency to decline.* The tendency for the profit rate to fall was a well-known component of Marx's work.[7] It was also part of Smith's and Ricardo's analyses, although the mechanisms were different. In Volume III of *Capital*, the tendency for the profit rate to fall is part of a system of tendencies also including the rising productivity of labor, the rising technical and organic compositions of capital, the constancy or rise of the rate of exploitation (or profit share), the "acceleration of accumulation". This analysis describes tendencies which are subject to many countertendencies, and will only be manifested during specific episodes. We call such long-term patterns *trajectories à la Marx*.

2.2 Measures

The measurement of profit rates is difficult in several respects. Should variables be measured in *values*, in the sense of Marx's labor theory of value, or in *prices*? Our answer to this question is straightforward: Price measures must be adopted. This does not mean that the labor theory of value has no explanatory power, but only that it does not explain everything.[8] What is at issue here is the behavior of economic agents, notably the decision

5. A. Smith, *An Inquiry on the Wealth of Nations* (1776), Oxford: Clarendon Press, 1976, ch. 7; D. Ricardo, *On the Principles of Political Economy and Taxation* (1817), Cambridge: Cambridge University Press, 1975, ch. 4; K. Marx, *Capital, Volume III* (1894), New York: First Vintage Book Edition, 1981, ch. 10.
6. G. Duménil, D. Lévy, *The Economics of the Profit Rate: Competition, Crises, and Historical Tendencies in Capitalism*, Aldershot: Edward Elgar, 1993, Parts II and III; "Micro Adjustment Toward Long-Term Equilibrium", *Journal of Economic Theory*, LIII (1991) p. 369-395.
7. K. Marx, *Capital, Volume III*, *op. cit.* note 5, Part Three.
8. G. Duménil, D. Lévy, *The Economics of the Profit Rate, op. cit.* note 6, appendix 3.A1.

to invest of capitalists, and the consequences of profitability levels. These mechanisms refer to variables measured in price terms, including the explanation of the falling profit rate itself. The basic notion is that firms and capitalists are not directly affected by variables expressed in values. Marx's distinction between productive and unproductive labor is labor expanded for production, and labor expanded in commercial activities and management in general (from the organization and discipline of the workshop to the control of inventories and liquidities). Giving this very broad sense to the term "management", and simplifying considerably, unproductive labor corresponds to the activity of managerial and clerical personnel. This distinction is useless in the measurement of profit rates, since, from the viewpoint of capital profitability, the wages of productive workers as well as those of unproductive workers are *costs*. It would be interesting to distinguish between these two categories of labor for analytical purposes, because of the specific roles they play in the formation of profit rates. Productive labor creates value and, therefore, within capitalism, surplus-value ; unproductive labor is used to maximize the profit rate. Marx's analysis of prices, as forms of value, stresses that value is created in each industry in proportion to productive labor, and realized in proportion to total capital invested (including industries such as *Trade* or *Finance*, where no value is created since only unproductive workers are involved).

The determination of a profit rate requires a measure of *profits* and a measure of *capital*. We will consider these two issues separately, and finally discuss the possible relationship between these definitions :

1. *The product*. The broadest available measure of the product is the *Gross product* (already abstracting from the cost of circulating inputs other than labor). This variable includes the depreciation of fixed capital, which must be subtracted. Thus, one obtains the *Net product*.

2. *The cost of labor*. Total labor compensation is composed of wages and related charges for retirement or health insurances, either private of public.

3. *Alternative measures of profits*. The broadest measure of profits subtracts labor compensation from the net product :

$$\Pi_1 = \text{Net product} - \begin{pmatrix}\text{Labor}\\ \text{compensation}\end{pmatrix}$$

One can subtract taxes, beginning logically with *indirect business taxes* :

$$\Pi_2 = \text{Net product} - \begin{pmatrix}\text{Labor}\\ \text{compensation}\end{pmatrix} - \begin{pmatrix}\text{Indirect}\\ \text{business taxes}\end{pmatrix}$$

One can also consider the effect of *interest*. Firms simultaneously pay and receive interest. For this reason, one considers *net interest* (*interest paid* − *interest received*) :

$$\Pi_3 = \text{Net product} - \begin{pmatrix}\text{Labor}\\ \text{compensation}\end{pmatrix} - \begin{pmatrix}\text{Indirect}\\ \text{business taxes}\end{pmatrix} - \begin{pmatrix}\text{Net}\\ \text{interest}\end{pmatrix}$$

One can deduct profit taxes :

$$\Pi_4 = \text{Net product} - \begin{pmatrix}\text{Labor}\\ \text{compensation}\end{pmatrix} - \begin{pmatrix}\text{Indirect business}\\ \text{taxes and profit taxes}\end{pmatrix} - \begin{pmatrix}\text{Net}\\ \text{interest}\end{pmatrix}$$

It is finally possible to include *dividends received*, but it would be questionable to subtract

dividends paid, since the payment of dividends is a way of disposing of profits :

$$\Pi_5 = \text{Net product} - \begin{pmatrix}\text{Labor}\\ \text{compensation}\end{pmatrix} - \begin{pmatrix}\text{Indirect}\\ \text{business}\\ \text{taxes and}\\ \text{profit taxes}\end{pmatrix} - \begin{pmatrix}\text{Net}\\ \text{interest}\end{pmatrix} + \begin{pmatrix}\text{Dividends}\\ \text{received}\end{pmatrix}$$

Consider now capital[9] :

1. *Fixed capital*. The stock of fixed capital provides a first narrow measure of capital. The variable used is the *net stock of fixed capital*.

2. *Inventories*. It is also possible to add the stocks of inventories (raw materials, goods in process, and finished goods) to fixed capital. The sum of these two first components is total *tangible assets*.

3. *Financial assets and liabilities*. The total capital in a firm includes financial assets (cash, securities such as bonds and shares, loans...), but the firm also owes money to other agents. Because of this twofold aspect of monetary relationships, the addition of financial assets to fixed capital and inventories, *i.e.*, the consideration of the total balance sheet, does not yield an appropriate measure of capital. What really matters concerning financing is the net debt, *i.e.*, the difference between liabilities and financial assets. Usually, the liabilities of firms are larger than their financial assets[10], *i.e.*, firms borrow more than they lend and hold in cash. Thus, another possible measure of capital is tangible assets minus net debt. It is known as *net worth* or *shareholders' equity*.

A broad set of profit rates could be defined on this basis, by choosing randomly one measure of profits and one measure of capital, but there are certain relationships between definitions of profits and definitions of capital. Π_1 would match a measure of capital as fixed capital or fixed capital plus inventories. Π_5 would appropriately match a measure of capital as net worth.

There is nothing like *"the" definition of the profit rate* independently of the problem under consideration. The two classical-Marxian analyses, profit rate gravitation and the falling profit rate, suggest the use of distinct definitions :

1. *Profit rate gravitation*. This analysis requires a narrow definition of profits. Firms pay taxes, and profits must be computed net of indirect business taxes. This is important when industrial profit rates are at issue, since, in the US, such taxes are not equal among industries. Corporate taxes can also be deducted, but this deduction has less impact. Whether net interest should be taken off is less obvious. Individual firms may go into debt for specific reasons, and this should not impact on the formation of prices of production and profits should be considered, from this viewpoint, prior to the payment of interest. However, when industries are studied instead of individual firms, there is also an important structural aspect in the pattern of indebtedness : Some industries go more into debt than others. This suggests that profits should rather be considered after interest payment. Concerning capital, it is certainly necessary to include inventories, *i.e.*, to consider tangible assets. An even more satisfactory measure of capital would be net worth.

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9. We abstract from land, cattle, and untangible assets.
10. The shares of US corporations held in the *Corporate sector* (therefore simultaneously issued and held in the sector) are not included within their financial assets and, thus, not considered in the computation of their net worth.

2. *The trend of the profit rate.* Two issues are equally relevant : (1) the consequences of the variations of the profit rate, and (2) the explanation of these movements. Therefore two types of measures must be computed :

- Concerning the influence on capitalists and firms of the variations of the profit rate, the same type of measures must be used as in the analysis of profit rate gravitation.
- Concerning the analysis of the variations over time of the profit rate several measures are relevant. One can initiate the investigation with a large measure of profits (*Net product − Labor compensation*) and fixed capital. This is the framework in which the effects of technical change and wages can be investigated (in particular the discussion of Marx's analysis of the falling profit rate). It is then possible to assess the effects of taxation or interest payments, moving progressively closer to the previous type of definitions.

2.3 The field of capital mobility : The issue

A difficult issue is the *field* within which the analysis of capital mobility must be conducted. The statement that capitalists choose to invest within particular industries must be made more specific. Is the entire spectrum of activities open to such investments ? Are all institutional frameworks equivalent ?

A preliminary statement is that we only consider *entrepreneurial activity*, meaning the activity of *firms* (aggregated into industries). But this entrepreneurial activity must also display sufficient *capitalist features*. These statements have straightforward implications, but they also remain ambiguous in some respects :

1. *Private corporations.* The corporate form is the dominant institutional form of large firms where capital is invested and where normal returns are expected.

2. *Government.* Most of the contribution of *Government* to the product is composed of the compensation of labor of civil servants (including Armed Forces). We exclude this component. We also set aside *Government enterprises*, because they are not private.

3. *Financial investment.* Funds may be obtained by firms through equity or debt, and these financial investments are part of the overall allocation of capital among firms. We do not include in our analysis of comparative profitability the relative assessment of the yields on shares or on any securities for personal holders, or the comparison of these yields to the profit rates of firms. However, financial investment is also part of the activity of all firms to some extent and the main purpose of financial firms. It is only in this respect that the profitability of financial investment will be considered : as a component of the profitability of firms and industries. Note that the notion of firm itself is fraught with ambiguity. For example, pension funds and mutual funds are not "firms" in the usual sense of the term.

4. *Real Estate.* The Real estate sector is very peculiar (appendix A.7). Income in this industry is mostly formed of the rental income of persons : 87% of the gross income of the sector corresponds to the rental income of persons and 55% to housings occupied by their owners (for which fictitious rents are estimated). The same principle applies here. Independently of the data availability, the profitability of real estate investment should only be considered as a component of the activity of firms, not of households.

5. *Self-employed persons* pose specific problems, referring to a broad spectrum of situations :

- Within some industries, there exists a number of self-employed persons who, in their own firms, perform a fraction of the "same" production as corporations, although they usually do not have access to the same technology and organization than larger firms. We believe that, as far as technology is concerned, the basis of profit rate equalization is actually the average technology in an industry, and technological and organizational heterogeneity *per se* is not an obstacle to equalization among industries. However, entire segments of some industries may remain isolated from standard profit rate comparison and survive for specific social reasons, side by side with other firms. This is, for example, the case in *Agriculture*.
- In other industries, such as *Medical services* or *crafts*, production is linked to the specific skills of the self-employed persons, and capital is still subsidiarily involved. Capital investmen is a condition to the main activity, not its central purpose.

The limits are very difficult to assess in these respects, and we will resort to straightforward empirical criteria to draw boundaries between "capitalist" and "noncapitalist" activities, keeping in mind that we only consider data on industries, not firms.

2.4 Gravitation and the trend of the profit rate : What can be done

The definition of the field of capital mobility is obviously limited by the availability of data. The two main limitations are the followings :

1. The *Bureau of Economic Analysis* provides data : (1) by industry in *National Income and Products Accounts* (NIPA), tables 6.1 to 6.22, and in *Gross Product Originating* data (GPO), or (2) by *legal forms of organization* (NIPA, table 1.15), with more detailed information for the *Corporate sector* (NIPA, table 1.16). Unfortunately, it is difficult to combine the two types of data. The same is true of the stock of capital from *Fixed Reproducible Tangible Wealth*, and this forbids any *comparison of profit rates among industries, considering only corporations*.

2. Financial national accounting (*Flow of Funds Accounts*) only provides a measure of net worth for the *Nonfinancial corporate sector*. *This represents an important limitation in the analysis of comparative profit rates*. The profit rate ($r = \Pi_3$/Tangible assets) that we will use in the analysis of comparative profit rates provides a generally acceptable substitute. This is, however, not the case for *Finance*, where the measure of capital cannot be limited to tangible assets.

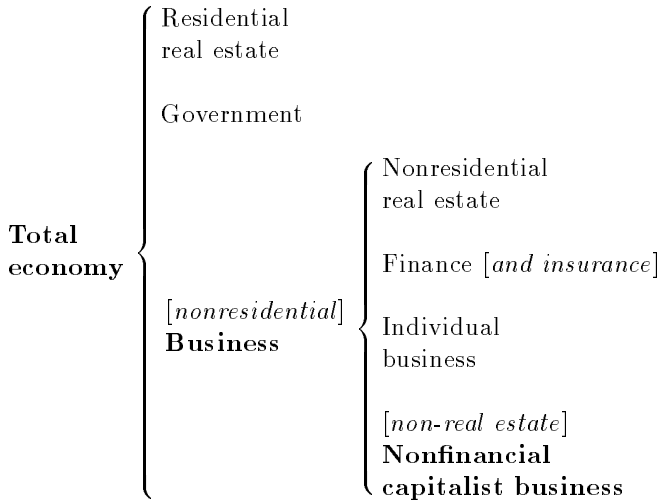
Overall, for theoretical or practical reasons, we will *a priori* exclude from the analysis of the equalization of profit rates : *Government* and *Real estate*. Other industries usually combine corporations and self-employed persons. We will sort out industries in this broad ensemble depending on three criteria accounting for the more or less capitalist features of these industries, distinguishing two sectors : *Capitalist business* and *Individual business* (section 3). Because of its specific features, *Finance* is first set aside, and the object of a particular section (6.4), at the end of this study.

Whenever self-employed persons are involved in the industries selected as capitalist industries using the above criteria, it is necessary to provide an estimation of their profits. The income of self-employed persons is known as *proprietors' income*. It combines, indistinctly, the remuneration of the labor of the proprietor and the profits on his/her capital.

The practical way to deal with this issue is to compute a *wage (labor compensation) equivalent* for the proprietor, to be aggregated with the labor compensation of wage-earners. Thus, profits for self-employed persons are equal to *proprietors' income* minus the *wage equivalent*. This correction for self-employed persons may certainly bias the measurement of the profit rate of the industry to a certain extent, but this is the best which can be done. Provided that the fraction of the industry at issue is not too large, this bias is limited. (Appendix A.3 is devoted to this problem.)

The field considered in the analysis of the historical tendency of the profit is broader than the above. We will still exclude *Government* and *Residential real estate*, but include *Finance* and *Nonresidential real estate* in the analysis. Even if it is difficult to compute an appropriate profit rate for *Finance* and *Nonresidential real estate*, the very large fixed capital stock held in these sectors is rented to other enterprises and must be considered in an investigation of the trend of the profit rate.[11]

Diagram I :



The analysis of the trend of the profit rate is limited to *Business* and that of profit rate equalization to the *Nonfinancial capitalist business*.

Diagram I describes the main sectors in which the economy is decomposed and makes explicit the terminology :

1. We begin with the *Total economy* from which we isolate *Residential real estate* and *Government*. We call the resulting sector *Business*, meaning the private nonresidential business. This is the broadest sector in which we will consider the trend of the profit rate.

2. *Business* is broken down into four components :

11. In 1997, the nonresidential fixed capital of *Finance* and *Real estate* amounted to 2074 billions of dollars (respectively 756 and 1318) out of the 8725 billions of dollars for the total nonresidential capital. For comparison the stock of fixed capital of *Manufacturing* was equal to 1533 billions of dollars.

- *Nonresidential real estate* is treated separately since, to a very large extent, it is not an entrepreneurial activity, although its capital is used by firms.
- *Finance* poses specific problems of measurements on which we have already commented.
- We isolate activities which we will not consider as part of the general capital mobility and for which the notion of profit rate is often not clearly relevant. Because of the importance of the specific traits of the individuals which perform these activities, we denote this sector as *Individual business*. (We do not expect profit rate equalization within these industries.)
- The last component corresponds to the *Nonfinancial capitalist business*, denoted *NF-Capitalist business* (obviously non-real estate capitalist business). *A priori*, we consider that the capitalist features of this sector are sufficiently strong to allow for the equalization of profit rate by capital mobility.

Note finally that we often aggregate the two first components of *Business* for simplicity.

3 - Individual and capitalist business

This part is devoted to the above distinction between *Individual business* and *Capitalist business*. (This separation is made on industries.) Section 3.1 defines three criteria which tend to assess the capitalist features of industries (the proportion of salaried workers, the capital-labor ratio, and the degree of incorporation). These criteria are convergent : Industries in which either a sufficient proportion of the labor force is formed of salaried workers or sufficient amounts of fixed capital are used, are also predominantly incorporated. They form the *Capitalist business*. Section 3.2 presents the results. Most of the industries are retained within *Capitalist business* : *Mining*, *Manufacturing*, *Transportation and public utilities*, *Trade*, and about half of *Services*. Section 3.3 discusses the relative sizes of the various components of the economy as summarized in diagrams I and II. *Nonresidential business* accounts for 86.5% of the net product of the total *Nonresidential economy*, and tne *NF-Capitalist business*, central to our investigation, for 62.1%.

3.1 Criteria

A classification of industries common to the three data sets built by the BEA, *i.e.*, NIPA, GPO, and *Fixed Reproducible Tangible Wealth*, is presented in table 2. In this investigation, we consider the highest level of disaggregation possible (a total of 51 industries). (The names of sectors eliminated *a priori* are slanted, that of aggregated industries are capitalized, and that of all industries submitted to the test are either in boldface or standard roman fonts.) For each industry and each year, we define three variables :

1. *Salaried workers*. A first variable compares the number of salaried workers in the industry to its total employment including self-employed persons :

$$\text{C1} = \frac{\text{Full-time equivalent employees}}{\text{Persons engaged in production}}$$

Table 2 : Classification of industries (BEA)

1 TOTAL ECONOMY
2 *Government*
3 TOTAL PRIVATE ECONOMY
4 AGRICULTURE, FORESTRY, AND FISHING
5 Farms
6 Agricultural services, Forestry, and Fishing
7 MINING
8 **Metal mining**
9 **Coal mining**
10 **Oil and gas extraction**
11 **Nonmetallic minerals, except fuels**
12 Construction
13 MANUFACTURING
14 DURABLE GOODS
15 **Lumber and wood products**
16 **Furniture and fixtures**
17 **Stone, clay, and glass products**
18 **Primary metal industries**
19 **Fabricated metal products**
20 **Machinery, except electrical**
21 **Electric and electronic equipment**
22 **Motor vehicles and equipment**
23 **Other transportation equipment**
24 **Instruments and related products**
25 **Miscellaneous manufacturing industries**
26 NONDURABLE GOODS
27 **Food and kindred products**
28 **Tobacco products**
29 **Textile mill products**
30 **Apparel and other textile products**
31 **Paper and allied products**
32 **Printing and publishing**
33 **Chemicals and allied products**
34 **Petroleum and coal products**
35 **Rubber and miscellaneous plastics products**
36 **Leather and leather products**
37 TRANSPORTATION AND PUBLIC UTILITIES
38 TRANSPORTATION
39 **Railroad transportation**
40 **Local and interurban passenger transit**
41 **Trucking and warehousing**
42 **Water transportation**
43 **Transportation by air**
44 **Pipelines, except natural gas**
45 **Transportation services**
46 COMMUNICATIONS
47 **Telephone and telegraph**
48 **Radio and television**
49 **Electric, gas, and sanitary services**
50 **Wholesale trade**
51 **Retail trade**
52 *Finance, insurance, and real estate*
53 *Banking*
54 *Credit agencies other than banks*
55 *Security and commodity brokers*
56 *Insurance carriers*
57 *Insurance agents, brokers, and service*
58 *Real estate*
59 *Nonfarm housing services*
60 *Other real estate*
61 *Holding and other investment offices*
62 SERVICES
63 **Hotels and other lodging places**
64 Personal services
65 **Business services**
66 Auto repair, services, and parking
67 Miscellaneous repair services
68 **Motion pictures**
69 **Amusement and recreation services**
70 Health services
71 Legal services
72 Educational services
73 Other

2. *Capital-labor ratio.* A second variable describes the more or less capital intensive technology in the industry :

$$\text{C2} = log\,\frac{\text{Fixed capital in constant dollars}}{\text{Persons engaged in production}}$$

3. *Corporations.* A third variable measures the importance of the corporate sector in comparison to the total. It is the ratio of corporate profits to total nonwage income:

$$\text{C3} = \frac{\text{Corporate profits before tax}}{\text{Corporate profits before tax} + \text{Proprietors' income}}$$

Profits before tax means profits after indirect business tax and after net interest, but before profit tax. *Proprietors' income* is the total income of self-employed persons.

The second variable describes a technical aspect of production, and the third one accounts for an institutional feature of the industry. The first variable occupies an intermediate position in this respect. Note that the first and third variables are not equivalent : Self-employed persons can hire salaried workers and, thus, an industry could possibly use a large proportion of salaried workers and not be largely incorporated.

Each in its own way, these three variables assess the capitalist features of the industry. If the number of salaried workers compared to the total number of persons employed (salaried and self-employed) is large, this signals a capitalist activity. In a similar manner, if much fixed capital is used in comparison to labor, this may also indicate a capitalist trait. Finally, the share of corporate profits in the industry is a direct indication that this industry is part of the capitalist world.

Considered in isolation, each of the above criteria is ambiguous, and this is why we use them jointly. If, for example, the two first variables are large, they reveal the capitalist nature of the industry, whereas an activity in which labor is mostly performed by self-employed, using little fixed capital, does not seem to provide an opportunity for investment to capital in general. Obviously, many intermediary situations are possible (either much capital and few salaried workers, or little fixed capital and many salaried workers). In the following section, we will combine the two first variables in a synthetic indicator (using a linear combination of the two variables).

Although this does not affect the selection in this section, it is interesting to consider the evolution of these criteria over time. This is done in appendix A.2 for *Business*.

3.2 Results

We consider the average values, $\overline{\text{C1}}$, $\overline{\text{C2}}$, and $\overline{\text{C3}}$, for the three variables, C1, C2, and C3, over the entire period 1948-1997, for the industries listed in table 2. Figure 2 plots the results for $\overline{\text{C1}}$ and $\overline{\text{C2}}$, where each dot represents an industry, and its coordinates reflect the values of $\overline{\text{C1}}$ and $\overline{\text{C2}}$. The numbers are those used in table 2. (Table 8 in appendix A.1 displays the values of $\overline{\text{C1}}$, $\overline{\text{C2}}$, and $\overline{\text{C3}}$ for each industry.)

Note that many industries are located on the right of the scatter. This means that most persons engaged in production are salaried workers (87% in *Business* in the average since World War II). An industry like *44, Pipelines, except natural gas*, to the extreme upper-right side of the plot, has never had any self-employed since 1948 ($\overline{\text{C1}}$=1) and employs an extremely large amount of fixed capital in comparison to employment ($\overline{\text{C2}}$=7.46,

i.e., approximately 1.7 millions of [1992] dollars per worker). The converse is true of *67, Miscellaneous repair services*, which is close to the origin (with only about 13 thousands of [1992] dollars per worker). In this industry, only 53% of total employment is composed of salaried workers, and capital per person engaged in production is 135 times smaller than for *Pipelines*. An industry like *72, Educational services*, on the lower-right side of the plot employs a comparatively large number of salaried workers, but uses little fixed capital.

How can one establish a frontier for this plot ? We can accomplish this by eliminating all industries which are neither employing a large proportion of salaried workers, nor has a sufficient amount of fixed capital per worker. The line on the plot marks the frontier. It corresponds to a linear combination of the two variables: $\overline{C4}= 8.7\overline{C1}+\overline{C2}$. If this combination is lower than 10, the industry is excluded. (This condition is deliberately chosen as not too restrictive.) Thus, 10 industries are eliminated.

Consider now the third variable $\overline{C3}$. Figure 3 plots the industries in the $(\overline{C3}, \overline{C4})$ plane. For all industries on the left of the plot, $\overline{C3}$, the proportion of corporate profits in total nonwage income is low. There is a strong discontinuity around 0.5. However, we only eliminate industries for which $\overline{C3}<0.20$. Using this limit, exactly the same selection is made as in the plane $(\overline{C1}, \overline{C2})$ for $\overline{C4}$ smaller than 10.[12] This is apparent in the figure in the fact no observations are located in both the upper-left and lower-right quadrants. Thus, these criteria provide a very consistent assessment of industries. *All industries which are neither employing a large proportion of salaried workers nor a sufficient amount of fixed capital per worker are not incorporated to a significant extent.*

All selected industries, which form the *NF-Capitalist business*, are marked in boldface in table 2. The ten industries which are set aside, and form what we call *Individual business*, are marked in lower-case roman. (Recall that upper-case fonts refer to aggregate industries which are not at issue, and that slanted fonts indicate that the industry has been excluded *ex ante*.) The following remarks can be made :

1. All components of *Mining*, *Manufacturing*, *Transportation and Public utilities*, and *Trade* are selected.

2. The two components of *Agriculture* do not pass the test. They are very close to the origin in the scatter of figure 3.

3. *Construction* is also rejected. Obviously, this industry is very heterogeneous. Large corporations are active in this field, but much of the work is performed by self-employed persons and the share of corporate profit is low. Unfortunately, it is impossible to distinguish between these different components, and this important industry must be globally set aside.

4. Four components of *Services* (63, 65, 68, and 69) are conserved from 11. This is the only industry, at this level of disaggregation, which must be split as a result of this selection. We will use the terminology *Individual-business services* and *Capitalist services*, to distinguish between these two components.[13]

12. The limits have been chosen to ensure this equivalence.

13. It has been necessary to adjust for the modification, in 1987, of the SIC 1972 classification : "The combination of 1987 SIC industries "business services"and "other services" is the equivalent of the SIC 1972 industries "business services" and "miscellaneous professional services"". Consequently, 73 "Other services", which did not pass the test, was included within "Capitalist services". Among *Individual-business services*, we also include *"Private household" services* representing 0.16% of the gross product of the total economy in 1997.

Figure 2 Scatter : $\overline{C1}$, proportion of employees in total employment, and $\overline{C2}$, logarithm of the capital-labor ratio

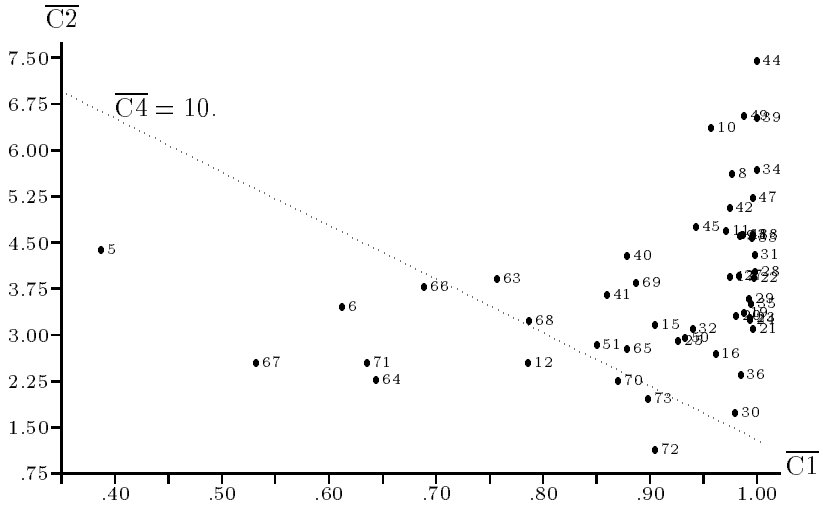
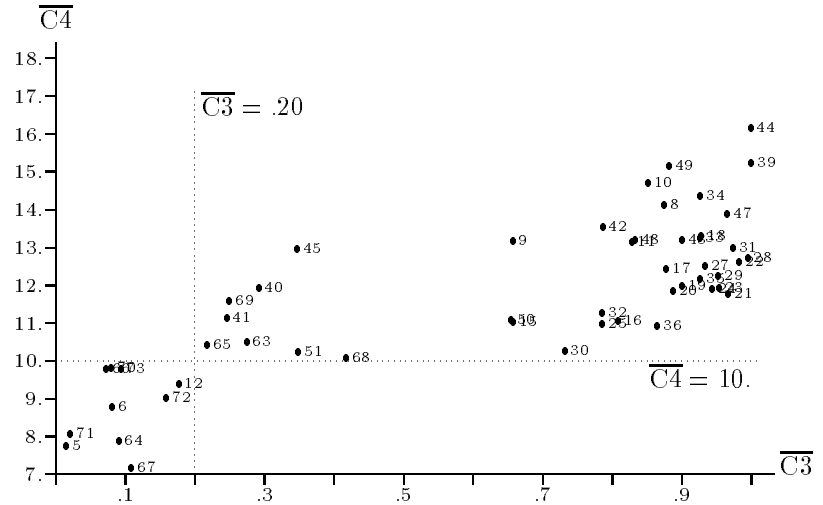
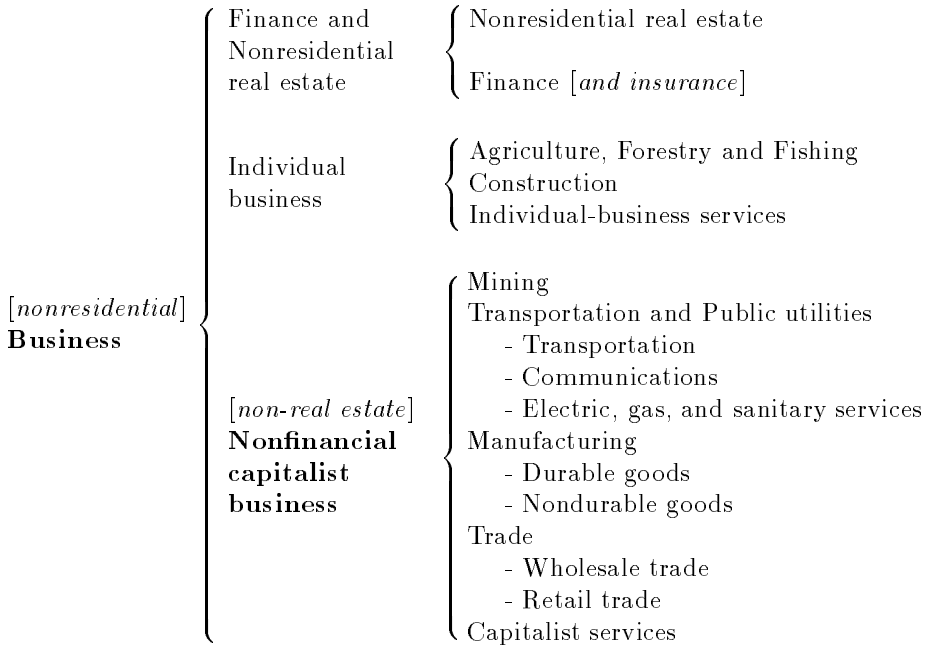


Figure 3 Scatter : $\overline{C3}$, share of corporate profits in total nonwage income, and $\overline{C4}$, linear combination of $\overline{C1}$ and $\overline{C2}$



The classification of industries is presented in table 2.

Diagram II :



Note that the 8 industries for which $\overline{C3}$ falls between 0.2 and 0.42 occupy an intermediate position, and could be problematic. The four selected components of *Services* belong to this group. If the criterion had been more restrictive, the entire service industry would have disappeared on account of its lack of basic capitalist features. A second subset (40, 41, and 45) of these "intermediate" industries is part of *Transportation*. Conserving these industries preserves the entire transportation industry. The last industry in this border group is *51, Retail trade*. This important industry is largely unincorporated, but the consideration of inventories would increase its capital intensive feature, increasing C2 by approximately 50%.

Diagram II makes explicit the components of *Business*, which have now been selected. (Recall that the industries included within *Capitalist business* are the most incorporated, but that they still require a correction for self-employed persons.)

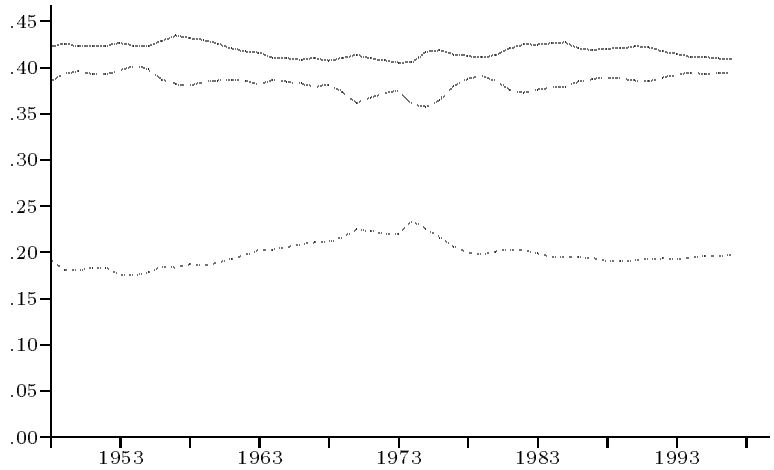
3.3 Relative sector size

This section is devoted to the comparative sizes of the various components of the economy summarized in diagrams I and II.

In the *Total economy*, we first distinguish *Residential real estate* and *Government* (diagram I) :

1. Consider first *Residential real estate*. The share of residential capital in total fixed capital, residential and nonresidential, is large (figure 4). Residential capital represented, in the average over the entire period, about 38.4% of total capital (and 47.9% of private

Figure 4 Fixed capital: The share of the various components of the *Total economy*



Business (——); *Residential real estate* (— —); *Nondefense government* (-----).

• Unless otherwise indicated the period covered in all figures is 1948-1997.

capital excluding *Government*). Thus, *Residential real estate* accounts for approximately one half of total fixed capital in the economy, comparable in size with total *Business* (with 41.8%). Conversely, the product of this sector was only 7.6% of the product of the *Total economy*.

2. The share of the nondefense *Government*'s fixed capital in the *Total economy* remained approximately constant, around 20% (figure 4), rising up to 1974, and then declining during approximately a decade. In the average, *Government* accounted for approximately 12.5% of the product of the *Total economy*.

We now focus our investigation on *Business*, aggregating its two first components *Nonresidential real estate* and *Finance* (diagram II). Thus, three sectors are at issue, (1) *Finance* and the *Nonresidential real estate*, (2) *Individual business*, and (3) *NF-Capitalist business*:

1. Figure 5 displays the variations over time of the proportions of the net product of these sectors. The share of the sum of *Finance* and the *Nonresidential real estate* increased from about 5.2% to 12.7%. The remaining two other components of *Business* represented, in the average over the entire period, about 91.3% of *Business*. The *NF-Capitalist business* accounted for 72.8% in 1948, and declined to 66.8% in 1997. *Individual business* weighed 19.5% in the average, with little variation over time.

2. A similar investigation can be made for fixed capital. The results are displayed in figure 6. The share of the *NF-Capitalist business* is slightly larger when fixed capital is considered instead of the net product. It declined from 79.3% to 66.5%. Correspondingly, the share of the *Nonresidential real estate* and of *Finance* rose dramatically, from 11.8% to 23.8%.

A more detailed analysis can be made, considering the shares of the various industries composing these sectors. The results of this breakdown are presented in table 3 for the net product and employment. The figures correspond to the average over the entire period.

Figure 5 Net product: The share of the various components of *Business*

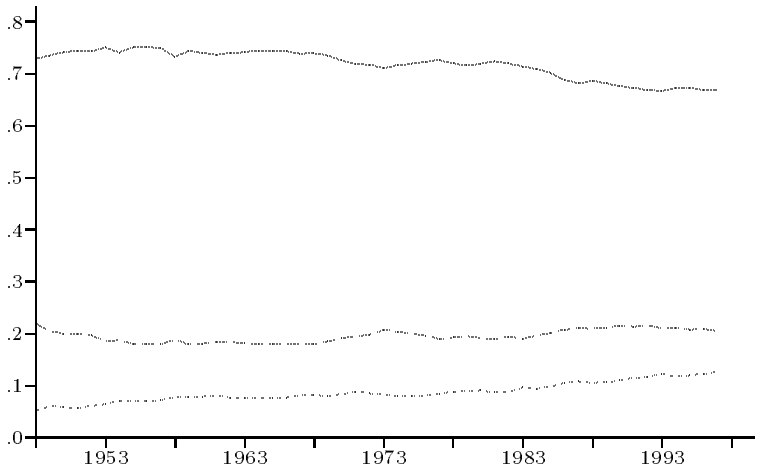


Figure 6 Fixed capital: The share of the various components of *Business*

NF-Capitalist business (——); *Individual business* (— —); *Finance and Nonresidential real estate* (-----).

Table 3 - Net product (NP) and employment (L) : Shares of the components of *Business* (average 1948-1997)

	NP	L
BUSINESS	100.0	100.0
NF-Capitalist business	71.8	68.3
Mining	2.5	1.1
Manufacturing	29.9	25.2
Durable goods	17.3	14.5
Nondurable goods	12.5	10.7
Transportation and public utilities	10.2	6.7
Transportation	4.8	4.3
Communications	2.6	1.4
Electric, gas, and sanitary services	2.8	1.0
Trade	21.5	24.7
Wholesale trade	9.1	6.1
Retail trade	12.5	18.7
Capitalist services	7.6	10.5
Individual business	19.5	26.2
Agriculture, forestry, and fishing	4.0	6.1
Construction	6.0	6.3
Individual-business services	9.5	13.9
Finance and Nonresidential real estate	8.7	5.5
Finance	5.9	4.4
Nonresidential real estate	2.8	1.1

The figures for the net product show that the main components of the *NF-Capitalist business* are : (1) *Manufacturing* with 29.9%, (2) *Transportation and Public utilities* with 10.2%, (3) *Trade* with 21.5%, and (4) *Capitalist services* with 7.6%. The 19.5% of *Individual business* can be broken down into 4.0% for *Agriculture, Forestry, and Fishing*, 6.0% for *Construction*, 9.5% for *Individual-business services*. *Finance* and *Nonresidential real estate* account for 8.7% of the net product of total *Business*.

The following remarks can be made concerning the evolution over time of these shares (table 9 in appendix A.1). The shares of *Transportation and Public utilities* and of total *Trade* in the total net product remained approximately constant over time. The major transformation combined the decline of *Manufacturing* (a loss of -13.3 percentage points of the net product of *Business*) and the rise of services (both *Capitalist services*, with a gain of $+8.6$ percentage points, and *Individual-business services*, with a gain of $+7.1$ percentage points).[14]

Employment provides a similar picture but, using this indicator, the size of *Individual business* appears larger, and that of *Finance* and *Nonresidential real estate* smaller. The share (68.3%) of *NF-Capitalist business* in the total employment of *Business* is about the same as for the net product. The share of *Transportation and Public utilities* is smaller for employment than for the net product. As could be expected, the shares in employment of *Trade* and of the two components of *Services* are larger than in the net product. Table 10 in appendix A.1 confirms, in terms of employment, the evolutions already detected for the net product.

14. The "commodity and energy economy", which corresponds to *Manufacturing*, *Trade*, *Agriculture*, *Construction*, *Mining*, and *Electric, gas, and sanitary services* still represented in 1997 53.2% of the net product of *Business* (instead of 76.8% in 1947). Note that the remaining fraction includes the transportation of goods and services to enterprises.

4 - The gravitation of profit rates

This section analyzes the gravitation of profit rates around a common value. Section 4.1 compares the profit rate in 9 industries whose capitalist features are sufficiently strong to *a priori* expect such a gravitation to occur. The hypothesis can be maintained for five industries, the components of *Manufacturing* and *Trade*, and *Capitalist services*, in spite of the large differences in technology between these industries. They account for 82.2% of the net product of the *NF-Capitalist business*. Section 4.2 is devoted to this first group. The profit rates of the two components of *Trade* remain very close to one another. The same is true of the two components of *Manufacturing* up to the late 1960s. Then some divergence is apparent. Gravitation is not observed for *Mining* and *Transportation and public utilities*, in which the capital-labor ratio is very large, and the profit rate very low. Section 4.3 discusses the capital intensive features of these industries : They account for 17.8% of the net product of the *NF-Capitalist business* using 57.1% of the capital stock of the sector. Finally section 4.4 presents a few results concerning industries for which such a gravitation was not expected to occur : *Individual business*, *Finance*, and *Nonresidential real estate*.[15]

4.1 The broad picture

We conduct our comparison of profit rates by industries within the *NF-Capitalist business*, for the 9 industries at the most disaggregated level of diagram II. This comparison is made using a measure of the profit rate as close as possible to the practice of firms, on account of data limitations.[16] The following profit rate is used (section 2) :

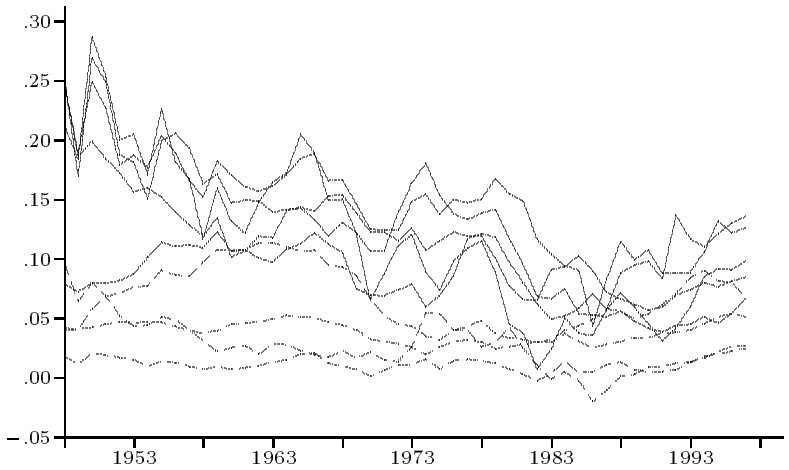
$$r = \frac{\text{Net product} - \left(\begin{array}{c}\text{Labor}\\ \text{compensation}\end{array}\right) - \left(\begin{array}{c}\text{Indirect}\\ \text{business taxes}\end{array}\right) - \text{Net interest}}{\text{Fixed capital} + \text{Inventories}}$$

The results are displayed in figure 7. Two categories of industries can be distinguished in this figure :

15. We already investigated gravitation in earlier works, though more superficially (G. Duménil, D. Lévy, *The Economics of the Profit Rate*, *op. cit.* note 8, ch. 3, and *La dynamique du capital. Un siècle d'économie américaine*, Paris : Presses Universitaires de France, 1996, ch. 2). See also E. Ochoa, Labor Values and Prices of Production : An Interindustry Study of the U.S. Economy, 1947-1972, Dissertation, New School for Social Research, New York, 1984 ; M. Glick, H. Ehrbar, "Long-Run Equilibrium in the Empirical Study of Monopoly and Competition", *Economic Inquiry*, XXVIII (1990) p. 151-162 ; H. Ehrbar, M. Glick, "Profit Rate Equalization in the U.S. and Europe : An Econometric Investigation", *European Journal of Political Economy, Europäische Zeitschrift für Politischeökonomie*, Special Issue, IV (1988) p. 179-201 ; J. Herrera, *La différentiation des taux de profit dans la concurrence, l'exemple des États-Unis*, Thèse de Doctorat, Université de Paris X-Nanterre, 1990.

16. Unfortunately, net worth is not available by industry, but only for the total *NF-Corporate sector*. In this sector, a comparison can be made between a profit rate on tangible assets and net worth (figures 61 and 62 in appendix A.12). It is clear that the levels and trends of profit rates are significantly affected by these different definitions. What we cannot determine is the potential effects on gravitation. The crucial issue is the various degrees of indebtedness among industries.

Figure 7 Profit rate : The components of *Capitalist business*



The five industries (——) for which gravitation is observed are : (1) *Durable goods*, (2) *Nondurable goods*, (3) *Wholesale trade*, (4) *Retail trade*, (5) *Capitalist services*. The four industries (-----) for which gravitation is not observed are : (1) *Mining*, (2) *Transportation*, (3) *Communications*, (4) *Electric, gas, and sanitary services*. Industries are identified individually in figures 8 and 13.
Profit rate = (Net product − Labor compensation − Indirect bus. taxes − Net interest)/ (Fixed capital + Inventories).

1. *Mining* and the three components of *Transportation and Public utilities* define a first group of four industries with comparatively low and significantly different profit rates. (They account for 17.8% of the net product of the NF-Capitalist business.)

2. A second group of five industries is formed of *Manufacturing* (durable and nondurable goods), *Trade* (wholesale and retail), and *Capitalist Services*. Their profit rates : (1) have similar values ; (2) tend to fluctuate in concert ; (3) decline together. *Globally, for these industries, one observes a significant tendency for profit rates to gravitate around a common value.* We denote these five industries considered globally, as the *Nonfinancial core capitalist business* or *NF-Core*. In the average since World War II, the net product of this sector represented 82.2% of the net product of the *NF-Capitalist business*, and 59.0% of *Business*.

Thus, an important result emerges from this investigation. Two groups of industries must be distinguished within *Capitalist business* (Diagram III) : (1) a group of industries whose profit rates tend to gravitate around a common value, and (2) a group of industries whose profit rates are lower, sometimes dramatically lower, and whose profit rate profiles and levels are significantly different from one another.

4.2 The Nonfinancial core capitalist business : Gravitation

This section provides a more in depth discussion of the five industries for which the gravitation around a common average is observed : *Durable goods*, *Nondurable goods*, *Wholesale trade*, *Retail trade*, and *Capitalist services*.

Diagram III :

The movement of the profit rates for these five industries which compose the *NF-Core* is described in figure 8 :

1. As already noted in section 3.2, technology and other features within these sectors differ considerably. For example, the diversity of capital productivities[17] (figure 9) and profit shares (*Profits before tax/Net product* as in figure 10) is large. Gravitation is only evident for profit rates, *i.e.*, for the product of the two above variables. There is an obvious compensation between capital productivity and the share of profit. For example, *Nondurable goods* (– –) display simultaneously a comparatively low productivity of capital compensated by a large share of profits.

2. The comparison between the five industries for which gravitation is observed is repeated in appendix A.5 for less appropriate definitions of the profit rate. The figures show that inventories and indirect business taxes must be taken into account. It is clear that prices also compensate for the differences among industries in these two respects. As could be expected, the effects of interest were small up to the early 1980s. Since then, gravitation is tighter when net interest is subtracted as in figure 8. The effects of profits taxes are difficult to assess since self-employed persons do not pay these taxes. In addition, the profit rate in this measure is approximately divided by 2, and the comparison of gravitation is difficult.[18]

3. Profit rates gravitate within a band whose width appears nearly constant over time. (This is even more apparent in figure 42 in appendix A.4, which plots the deviations of the five profit rates from the average.) If we interpret these deviations as the effects of exogenous "shocks", it is clear that shocks of similar absolute amplitudes will affect to similar extents all profit rates, and proportionally less, large profit rates than low profit rates.

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17. The productivity of capital is the ratio of output to capital (usually fixed capital alone, or fixed capital plus inventories, as in figure 9).

18. Appendix A.6 investigates the effects of inventory valuation adjustments and capital consumption adjustments on the assessment of the gravitation of profit rates. When these adjustments are made gravitation is less tight. This appendix also displays the results obtained using GPO data for corporate profits before tax. Gravitation appears similar using NIPA or GPO data.

Figure 8 Profit rate: The components of the *NF-Core*

Durable goods (——); *Nondurable goods* (— —); *Wholesale trade* (-----); *Retail trade* (·····); *Capitalist services* (-·-·-).
Profit rate = (Net product − Labor compensation − Indirect bus. taxes − Net interest)/ (Fixed capital + Inventories).

We already pointed to the specific problems posed by *Services*. Still the profit rate for this industry moves in concert with the four others, except for the first decade. It is also clear that the restoration of the profitability of this industry since the mid-1980s is sharper than for the four other industries considered.

The less problematic sectors are *Manufacturing* and *Trade*. It is interesting to focus more carefully on the movements of the profit rate within these industries:

1. Consider first *Trade*. Figure 11 depicts the profit rates of *Trade* and of its two components, *Wholesale trade* and *Retail trade*, for mutual comparison and comparison with the average profit rate of the *NF-Core* (which is also displayed in the figure). The gravitation of the two components of *Trade* around one another and around the average appears very circumscribed — surprisingly tight when one considers the limitations of the data. The four series decline in concert.

2. In a similar manner, figure 12 breaks down *Manufacturing* into its two components, *Durable goods* and *Nondurable goods*. The profit rate of the entire *Manufacturing* remains very close to the average of the *NF-Core*. Considering the two components of *Manufacturing* separately, the gravitation is again very tight, but only until the late 1960s. Then, the two profit rates move in tandem, but the profit rate of *Durable goods* tends to be significantly lower than that of *Nondurable goods*. Note that the two series get closer in the last few years. This divergence within *Manufacturing*, during the second half of the period, is puzzling. It is less pronounced when GPO profits are used instead of NIPA profits. However, we tend to believe that it is not a mere artifact reflecting the deficiency of the data (such as a bias in the breakdown of the industries into its two components), since these movements are in line with other evolutions: The share of *Durable goods* and

Figure 9 Capital productivity: The components of the *NF-Core*

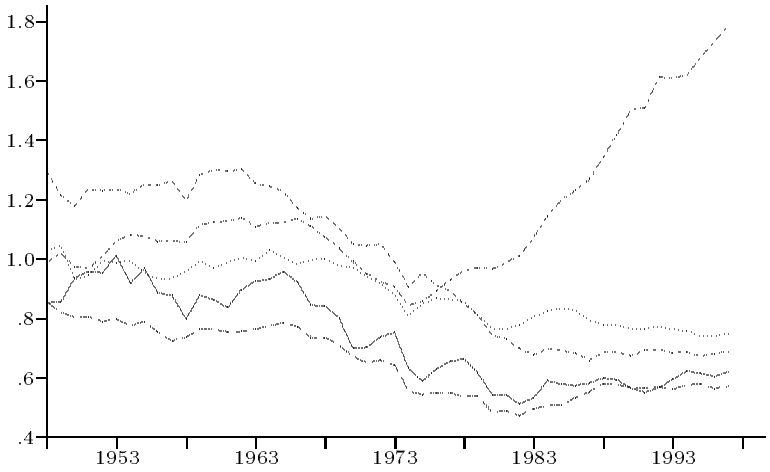


Figure 10 Profit share: The components of the *NF-Core*

Durable goods (——); *Nondurable goods* (— —); *Wholesale trade* (-----); *Retail trade* (·····); *Capitalist services* (-·-·-). The productivity of capital in figure 9 is:

$$P_K = \text{Net product}/(\text{Fixed capital} + \text{Inventories})$$

The share of profits in figure 10 is:

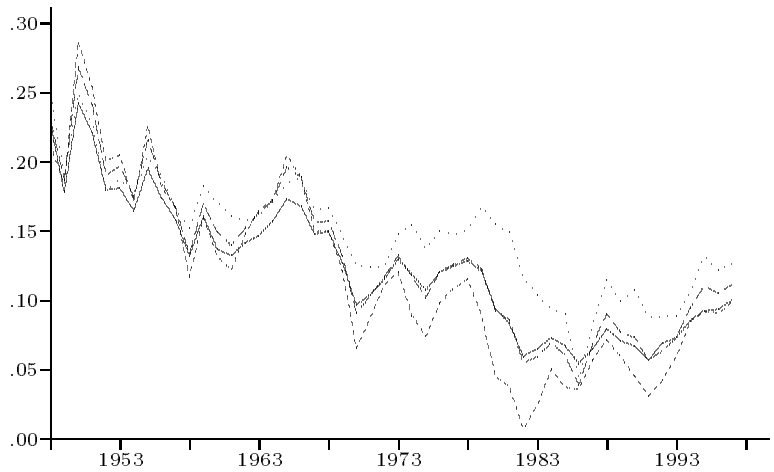
$$\pi = (\text{Net product} - \text{Labor compensation} - \text{Indirect bus. taxes} - \text{Net interest})/\text{Net product}$$

Thus, $P_K\pi$, the product of these two variables, is equal to the profit rate displayed in figure 8.

Figure 11 Profit rate : *NF-Core*, *Trade*, and its two components

NF-Core (——) ; *Trade* (— —) ; *Wholesale trade* (-----) ; *Retail trade* (·····).

Figure 12 Profit rate : *NF-Core*, *Manufacturing*, and its two components



NF-Core (——) ; *Manufacturing* (— —) ; *Durable goods* (-----) ; *Nondurable goods* (·····).
Profit rate = (Net product − Labor compensation − Indirect bus. taxes − Net interest)/
(Fixed capital + Inventories).

Nondurable goods in the net product of total business evolved differently with a significant break at the beginning of the 1970s signaling the relative decline of *Durable goods* (figure 44 in appendix A.4).[19]

Table 4 - Net product (NP), employment (L), and fixed capital (K) : Shares of the components of the *NF-Core* (average 1948-1997)

	NP	L	K
NF-Core	100.0	100.0	100.0
Manufacturing	50.4	41.8	62.1
Durable goods	29.2	24.1	32.2
Nondurable goods	21.2	17.8	29.9
Trade	36.5	40.8	25.9
Wholesale trade	15.4	10.0	8.7
Retail trade	21.2	30.8	17.2
Capitalist services	13.1	17.3	12.0

Table 4 depicts the proportions of each industry within the *NF-Core*, for the net product, employment, and fixed capital (the variations over time are displayed in table 11 in appendix A.4). In the average over the entire period, *Manufacturing* accounted for 50.4% of the net product of the sector, but this ratio declined consistently from 58.9% for the first decade, to 40.0% for the latest decade (a loss of 18.9 percentage points). This share of the product appears to have been captured by *Capitalist services*, which rose from 6.7% to 22.6%. The net product of this sector is now larger than the half of *Manufacturing*. Total *Trade* was, to some extent, smaller than *Manufacturing* (36.5% in the average for the period), but it rose, and is now nearly as large. This evolution was even more salient for employment. The share of manufacturing employment declined from 52.1% to 28.7%. Concerning fixed capital, *Manufacturing* still employs half of the capital stock of the sector, and the proportion of fixed capital within *Capitalist services* has only increased slightly.

4.3 Mining, Transportation, and Public utilities

The difference between the above industries pertaining to the *NF-Core* and the remaining industries which compose *Capitalist business* (*Mining* and the three components of *Transportation and Public utilities*) is striking. Figure 13 depicts the profit rate of the

19. Several hypotheses can be made : (1) It is obvious that *Durable goods* produces investment goods, whose demand was reduced during the crisis. Notice that this industry is more severely affected by cyclical recessions, in particular in 1982. It is, therefore, penalized by a depressed macroeconomic juncture. Demand could also be affected by new trends in the technology, such as the recovery of the productivity of equipment, which implies less and less capital goods for a same output. (2) *Manufacturing* goods are at the center of international trade and competition. The exchange rate can be used to adjust for relative competitiveness. (Since the 1970s, the exchange rate was consistently corrected to the advantage of the US in comparison to Japan to compensate for the slow adjustment of the US to competition from Japan, in particular concerning technology.) However, the exchange rate can only compensate for the deviation of one price, not two. If the competitiveness of the US with respect to Japan was particularly affected for *Durable goods* or, if this industry was more exposed to international competition in comparison to *Nondurable goods*, the relative profitability of the two industries was necessarily biased to the disadvantage of *Durable goods* (until technological adjustment was performed).

Figure 13 Profit rate: *NF-Core*, *Mining*, and the components of *Transportation and Public utilities*

NF-Core (——); *Mining* (— —); *Transportation* (-----); *Communications* (·····); *Electric, gas, and sanitary services* (-·-·-).
Profit rate = (Net product − Labor compensation − Indirect bus. taxes − Net interest)/ (Fixed capital + Inventories).

NF-Core and of the above industries, using the same definition as in the previous sections. Although the gap between the profitability of these two categories of industries tended to diminish progressively, in relation to the decline observed for the first group, the profit rates of *Mining*, and of the components of *Transportation and Public utilities* appear quite lower. This was particularly the case just after World War II. *This is the primary exception to profit rate gravitation.*

The major difference between the three components of *Transportation and Public utilities* is that the profit rate of *Communications* is significantly larger than the two others. Already during the 1960s, it had reached the band in which the components of the *NF-Core* usually fluctuate (figure 7). It converged to similar levels during the latest decade, and could be now included in the core. The worst case is that of *Transportation* whose profit rate remained constantly extremely low in this measure. This is particularly true of *Railroad transportation* whose profit rate is extremely low. These quite distinct evolutions of the profit rates of *Railroad transportation* and *Communications* are illustrated in figure 43 in the appendix. This figure plots the profit rates in these two industries and the average of the *NF-Core*. While the profit rate of *Communications* rose from 20% of that of the *NF-Core* to 100%, the profit rate of *Railroads* stagnated below one tenth of it !

Table 5 presents the shares of *Transportation and Public utilities* and *Mining* in the *NF-Capitalist business*, for the net product, employment, and fixed capital (the variations over time are given in tables 11 in appendix A.4).[20] The following observations can be

20. As shown in tables 9 and 10 in appendix A.1, the net product of *Transportation and Public utilities* represented, in the average since World War II, only about 10% of that of *Business*, and *Mining*, only 2.5%. The figures for employment are even lower: 6.7% and 1.1%.

Table 5 - Net product (NP), employment (L), and fixed capital (K) : Shares of *Mining, and Transportation and Public utilities* and their components in the *NF-Capitalist business* (average 1948-1997)

	NP	L	K
NF-Capitalist business	100.0	100.0	100.0
NF-Core	82.2	88.6	42.9
Mining, and Transportation and Public utilities	17.8	11.4	57.1
Mining	3.5	1.6	9.3
Transportation and public utilities	14.3	9.8	47.9
Transportation	6.7	6.2	22.2
Communications	3.7	2.1	8.0
Electric, gas, and sanitary services	3.9	1.4	17.7

made :

1. The *NF-Core* accounted for 82.2% of the net product of the *NF-Capitalist business* (average for 1948-1997), and the other industries for 17.8%. There was no significant trend over time. *Mining*, with 3.5% is quite smaller than *Transportation and public utilities* with 14.3%.

2. The overall picture for employment is similar (88.6% and 11.4%). *Mining* uses 1.6% of the employment of the total, and *Transportation and Public utilities* the remaining 9.8%.

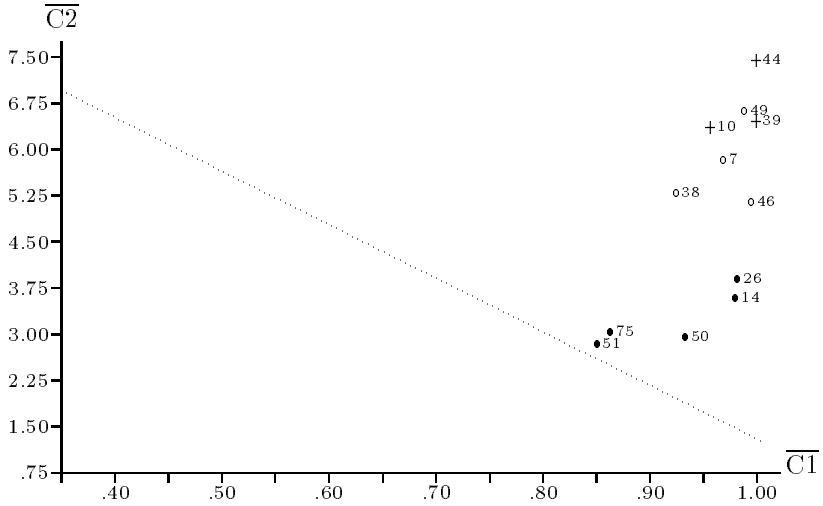
3. The important point concerns fixed capital. For 1948-1997, the *NF-Core* held only 42.9% of the capital stock of the *NF-capitalist business*, and *Mining, Transportation, and Public utilities* 57.1%. Thus, these latter industries provided 17.8% of the net product, using 57.1% of the total fixed capital stock. This is even more true for *Public utilities*, *i.e.*, *Electric, gas, and sanitary services*, which performed 3.9% of the net product of the *NF-Capitalist business*, using 17.7% of the fixed capital !

These industries are labeled *Highly capital intensive industries* in diagram III. In part 5, we also distinguish a subset of *Extremely capital intensive industries* within the group. All of these industries are located in the upper-right corner of the scatter in figure 2. This is shown in figure 14 which is constructed like scatter 2, and in which the industries of the *NF-Core* and the capital intensive industries are located. The five components (industries 14, 26, 50, 51, and *Capitalist services*, 75) of the *NF-Core* are represented by blacks dots. The *Highly capital intensive industries* are denoted by hollow dots. In the examination of this figure it is useful to remember that $\overline{C2}$ is the *logarithm* of the capital-labor ratio. (Each graduation, 0.75, in the vertical scale corresponds to a multiplication by 2.1.)

It is very striking that competitive mechanisms do not ensure "normal" profit rates to *Highly capital intensive industries*. Whether this observation can be imputed to a bias in the data or to an actual feature of the economy is questionable. It is not even sure that the difference between these two types of explanation can be clearly established. The paroxystic example of this is *Railroad transportation* whose net product represents 1.4% of the net product of the *NF-Capitalist business* and utilizes 11.3% of the stock of fixed capital. Clearly, the economic system does not recognize this fixed capital for what it is within BEA data.[21] Note that the revision of the capital stock series by the BEA

21. It is probably the very long service life of fixed capital within declining industries, which is at issue.

Figure 14 Comparison of *Highly capital intensive industries* and of the *NF-Core* Scatter: $\overline{C1}$, proportion of salaried workers in total employment, and $\overline{C2}$, capital-labor ratio (average 1948-1997)



Components of the *NF-Core* (•) and *Highly capital intensive industries* (◦). (The capital intensive feature is extreme for 49, and for some components of the other *Highly capital intensive industries* (+): 10, 39, and 44. We denote this subset as *Extremely capital intensive industries*.)

considerably *aggravated this problem*. The ratio of the fixed capital stock in the new BEA series to the old measures is slightly above one for *Manufacturing* (figure 45 in appendix A.4). Within *Transportation*, it was equal to approximately 1.85 up to the 1980s, and reached 2.21 in 1997. Thus, for these industries the new estimates doubled the capital stock.

4.4 Other industries

Recall that *Individual business*, *i.e.*, 19.5% of the net product of total *Business*, have been excluded from the above investigation because of their specific features (section 3). Although we judge these results as nonsignificative, it is still possible to compute profit rates for these industries. This investigation reveals significant differences among industries.

The profit rate of *Individual-business services* is very large and declined sharply (from nearly 80% to about 20%). This industry originally held little fixed capital. This computation confirms that it cannot be considered as part of the *Capitalist business*.

Figure 15 plots the profit rate of *Agriculture, Forestry and Fishing*, and *Construction*, together with the average profit rate of the *NF-Core*:

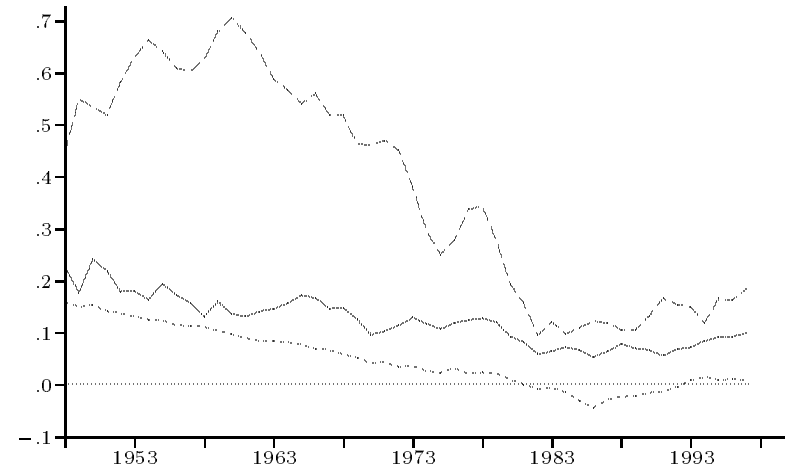
1. *Agriculture* was excluded for the reasons explained in section 3. More or less coincidentally, its profit rate gravitates around the average. Land and cattle are not included in the capital stock. Therefore, this profit rate is overestimated.

2. The major singularity of *Construction* is its very large fluctuation. But, in the average, its level is not so different from that of the *NF-core*.

Figure 15 Profit rate: *NF-Core* and *Individual businesses* other than *services*

NF-Core (——); *Agriculture, Forestry and Fishing* (— —); *Construction* (-----).

Figure 16 Profit rate: *NF-Core*, *Finance*, and *Nonresidential real estate*



NF-Core (——); *Finance* (— —); *Nonresidential real estate* (-----).
Profit rate = (Net product − Labor compensation − Indirect bus. taxes − Net interest)/ (Fixed capital + Inventories).

Figure 16 provides the same comparison for the two remaining components of *Business* : *Finance* and *Nonresidential real estate*. These measures confirm the *a priori* elimination of these industries. As stated in section 2.4, fixed capital does not provide a significant measure of the capital stock of *Finance* (see section 6.4). *Nonresidential real estate* (mostly owned by households) is not an entrepreneurial activity. Its profit rate is lower than that of the *NF-Core*. (Appendix A.7 presents a comparison of this component of *Real estate* to the residential component.)

5 - The falling profit rate : The Nonresidential business

This section is devoted to the time series trend of the profit rate since World War II. Two measures of the profit rate are considered : (1) profitability as determined by technology and distribution (section 5.1), and (2) profitability as received by firms, *i.e.*, after indirect business tax and net interest (section 5.2). These computations confirm the large decline of the profit rate from World War II to the early 1980s, interrupted by the bulge of the 1960s. What actually matters in the assessment of this fall is the consideration or exclusion of *Highly capital intensive industries*, whose profit rate remained low and was slightly trended upward. The profit rates of all sectors were affected by the rise of interest rates in the early 1980s, which contributed to the decline. This burden of interest was particularly large for *Highly capital intensive industries*, and was felt earlier (from the late 1960s). The recovery since the mid-1980s is evident in every sector, but still quite limited, especially when *Highly capital intensive industries* are set aside.

5.1 Profitability as determined by technology and distribution

We begin with a definition of the profit rate appropriate for the analysis of the effects of technology and wages :

$$r = \frac{\text{Net product} - \text{Labor compensation}}{\text{Fixed capital}}$$

and compare the profit rates within six sectors considered in the previous sections (diagram I)[22] :

1. The broader sector is *Business*, which excludes *Residential real estate* and *Government*.

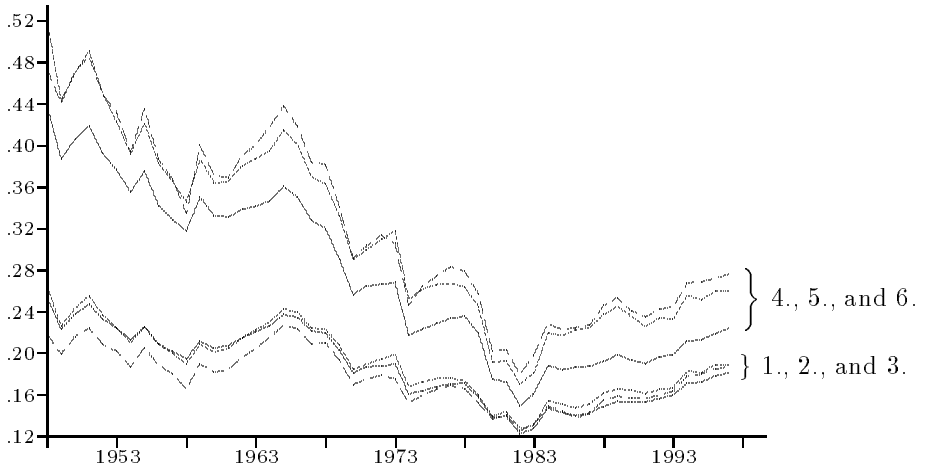
2. We set aside *Finance* and *Nonresidential real estate*.

3. We further eliminate *Individual business*, *i.e.*, consider the *NF-Capitalist business*.

4., 5., and 6. We repeat the same computation, excluding the *Highly capital intensive industries*. Consequently, the last unit of analysis (6.) is the *NF-Core*.

22. The profit rates for two broader sectors are displayed in appendix A.9: (1) *Business* plus *Government* and (2) *Business* plus *Residential real estate* (figures 55 and 56).

Figure 17 Profit rate : *Business* and five of its components



First group :
1. *Business* (——) ;
2. *Business* minus *Finance* and *Nonresidential real estate* (— —) ;
3. *Business* minus *Finance*, *Nonresidential real estate*, and *Individual business* (-----).
Second group (4.,5., and 6.) : as above after exclusion of *Highly capital intensive industries*.
Sector 6. (-----) is the *NF-Core*.
Profit rate = (Net product − Labor compensation)/Fixed capital.

These measures are presented in figure 17. The profit rates of these sectors differ significantly, due to the specific features of the various units of analysis. One can notice a significant difference in the levels of the profit rates in the three first measures, which are smaller, and the three last ones, which are larger. This finding shows that the important distinction for the levels of the profit rate is the inclusion of the *Highly capital intensive industries*. The impact of the consideration of *Nonresidential real estate*, *Finance*, or *Individual business* is considerably smaller.

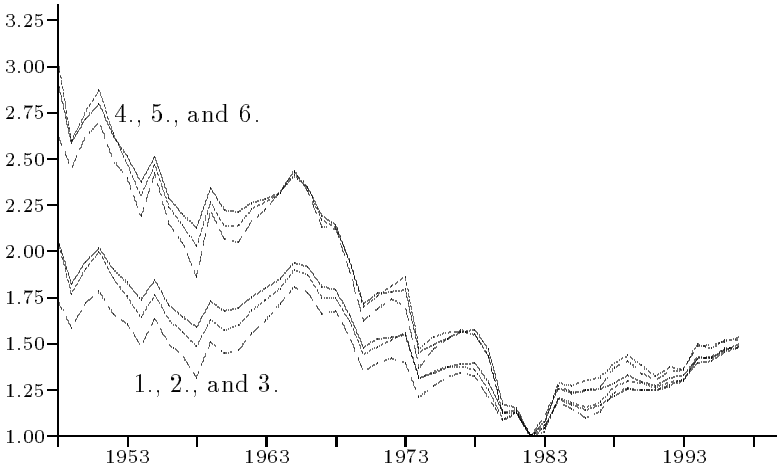
As already known from section 4.3, for another definition of the profit rate, the profitability of *Highly capital intensive industries* is very low in comparison to the average, due to the existence of a very large capital stock, a small net product, and small profits.

Because of these differences in level, the direct comparison of the trends of the profit rates in figure 17 is difficult. This is the case in the assessment of the downward trend as well as of the recovery during the second half of the 1980s and the 1990s. The same profit rates have been normalized to 1 for the decade 1956-1965 in figure 18, and to 1 in 1982 in figure 19. The succession of a common period of decline and of an also common period of recovery becomes even more evident. Concerning the downward trend, one can either : (1) read out of these measures a decline from 1948 to 1982, interrupted by a bulge during the 1960s, or (2) limit the fall to the years 1966 to 1982. We favor the first interpretation.

Overall, these computations confirm the existence of a significant and lasting decline of the profit rate since World War II, for a definition of the profit rate *à la Marx*. This downward trend is evident from the war to 1982, in spite of the temporary bulge of the profit rate during the 1960s :

Figure 18 Profit rate as in figure 17 normalized to 1 for 1956-1965: *Business* and five of its components

Figure 19 Profit rate as in figure 17 normalized to 1 in 1982: *Business* and five of its components



First group:
1. *Business* (——);
2. *Business* minus *Finance* and *Nonresidential real estate* (— —);
3. *Business* minus *Finance*, *Nonresidential real estate*, and *Individual business* (-----).
Second group (4.,5., and 6.): as above after exclusion of *Highly capital intensive industries*.
Sector 6. (-----) is the *NF-Core*.
Profit rate = (Net product − Labor compensation)/Fixed capital.

Figure 20 Profit rate : *Highly (or extremely) capital intensive industries* and the other components of business

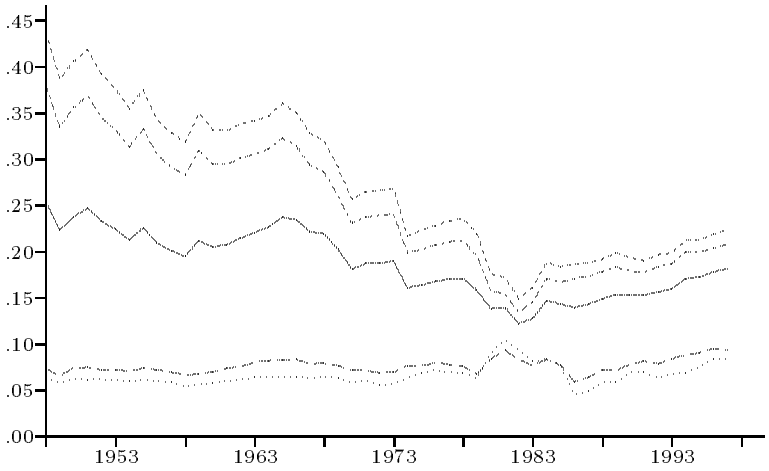


Figure 21 Profit rate as in figure 20 normalized to 1 for 1956-1965 : *Highly (or extremely) capital intensive industries* and the other components of business

Business (——);
Highly capital intensive industries (— —);
Business minus *Highly capital intensive industries* (-----);
Extremely capital intensive industries (·····).
Business minus *Extremely capital intensive industries* (-·--·);

Profit rate = (Net product − Labor compensation)/Fixed capital.

7. When the *Highly capital intensive industries* are excluded, the fall of the profit rate is larger. Comparing 1982 to the decade 1956-1965 normalized to 1, when the *Highly capital intensive industries* are included, the profit rate fell to 0.57, in the average, and to 0.46, when they are excluded.

8. The recovery from 1982 to 1997 is of similar amplitude when the 1982 level is taken as benchmark as in figure 19, independently of the inclusion or exclusion of *Highly capital intensive industries* : From 1982 to 1997, the profit rate increased of about one half of its value in 1982.

9. When the issue is the fraction of the fall which was regained[23], the impact of *Highly capital intensive industries* is again large. Two thirds of the fall were recovered when *Highly capital intensive industries* are included, and only one half when they are set aside.

The sixth measure corresponds to the *NF-Core*, in which profit rates (in another definition) tend to gravitate around a common value. It is interesting to notice in figure 18 that the decline of the profit rate in this sector was large and the recovery, in comparison to the decade 1956-1965, quite limited.

A closer examination of the data shows that most of the effect imputed to *Highly capital intensive industries* is concentrated within the even smaller fraction of the economy where huge amounts of fixed capital are accumulated, denoted as *Extremely capital intensive industries* in section 4.3 and represented on the scatter diagram in figure 14. These industries are *Oil and gas extraction* (from *Mining*), *Railroad transportation* (from *Transportation*), *Pipelines except natural gas* (from *Transportation*), and *Electricity, gas and sanitary services* (*i.e.*, *Public utilities*). As shown in table 6, the net product of these industries is about half of that of total *Highly capital intensive industries* (6.0% of the net product of total business instead of 12.8%), for 30.8% of the fixed capital stock. It is striking that industries which account for such a small proportion of the net product alter to such a degree the level and the trend of the profit rate.

Table 6 - *Highly Capital Intensive Industries* (HCII) and *Extremely Capital Intensive Industries* (ECII) (average 1948-1997)

	NP	L	K
BUSINESS	100.0	100.0	100.0
Highly capital intensive industries (HCII)	12.8	7.7	42.1
Business excluding HCII	87.2	92.3	57.9
Extremely capital intensive industries (ECII)	6.0	2.5	30.8
Business excluding ECII	94.0	97.5	69.2

These important findings are further illustrated in figure 20, which depicts the profit rates of (1) *Business*, (2) *Highly capital intensive industries* (3) *Business* excluding *Highly capital intensive industries* (4) *Extremely capital intensive industries*, and (5) *Business* excluding *Extremely capital intensive industries*. Figure 21 reproduces the same information as in figure 20, with the exception that the profit rates for the five sectors have been normalized to 1 for the decade 1956-1965. The differences in level and trend appear

23. The ratio : $(r[1997] - r[1982])/(r[1956\text{-}65] - r[1982])$.

strikingly in these figures. The profit rates of the two groups of capital intensive industries are dramatically lower and display a slight upward trend.

Appendix A.10 supplements this analysis by a discussion of the impact of capital consumption adjustments and inventory valuation adjustments (in *Business*). The profit rate is slightly less trended downward after adjustments are made.

5.2 The profitability as experienced by firms

This section repeats the same investigation as in section 5.1, but for a different definition of the profit rate which is closer to the variable recognized by firm managers and owners (that used in the analysis of gravitation). Profits are net of indirect business taxes and interest. The profit rate is:

$$r = \frac{\text{Net product} - \left(\begin{array}{c}\text{Labor}\\ \text{compensation}\end{array}\right) - \left(\begin{array}{c}\text{Indirect}\\ \text{business taxes}\end{array}\right) - \text{Net interest}}{\text{Fixed capital} + \text{Inventories}}$$

The results are presented in figure 22. The same observations can be made as in the case of figure 20, concerning the low profit rates when *Highly capital intensive industries* are conserved. Again, all measures are normalized, in figure 23, to the same average level for the years 1956-1965. As in figure 21, all profit rates display a clear downward trend. One should notice the sharper decline in the early 1980s, due to the rise of interest rates. The recovery appears larger in comparison to 1982, but smaller in comparison to the levels observed during the decade 1956-1965. Due to the large amounts of interest paid by *Highly capital intensive industries*, there is no significant difference in the trends of profit rates, up to the early 1980s, when these industries are eliminated. This is apparent from figures 53 and 54 in appendix A.8.[24]

6 - The falling profit rate: The corporate sector Finance

This section is devoted to the profitability of capital in the *Corporate sector*, *i.e.*, a fraction of *Business*:

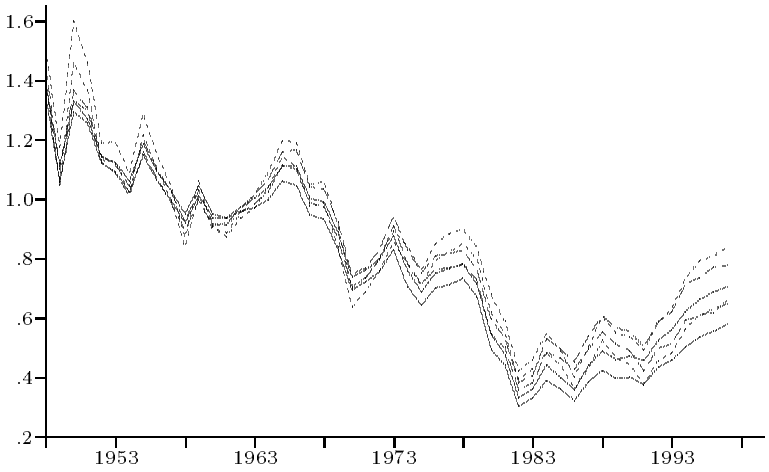
$$\text{Business} = \text{Corporate sector} + \text{Noncorporate sector}$$

The *Noncorporate sector* is the sum of "persons" as *Self-employed persons*, and persons who rent nonresidential capital and receive, on this account, the rental income of persons. Note that there is no correspondence between this new division of *Business* and the previous breakdown in four sectors as in diagram I.

24. The weight of interest payments on the profit rate of capital intensive industries during the 1970s and 1980s is clearly shown by a comparison between figures 21 and 54. This latter figure reveals that, when profit rates are measured after net interest, the profit rate of capital intensive industries fell with that of other industries up to the mid-1980s.

Figure 22 Profit rate : *Business* and five of its components

Figure 23 Profit rate as in figure 22 normalized to 1 for 1956-1965 : *Business* and five of its components



First group :
Business (——) ;
Business minus *Finance* and *Nonresidential real estate* (— —) ;
Business minus *Finance*, *Nonresidential real estate*, and *Individual business* (-----).
Second group (4.,5., and 6.) : as above after exclusion of *Highly capital intensive industries*.
Sector 6. (-----) is the *NF-Core*.
Profit rate = (Net product − Labor compensation − Indirect bus. taxes − Net interest)/
(Fixed capital + Inventories).

Section 6.1 discusses the comparative size of the *Corporate sector* (about three quarters of *Business*) and its evolution over time. As in section 5, two measures of the profit rate are considered : (1) profitability as determined by technology and distribution (section 6.2), and (2) profitability as felt by firms, *i.e.*, after tax and net interest (section 6.3). The profit rate declined less in the *Corporate sector* than in *Business*. (The fall in the *noncorporate sector* was very sharp.) In addition, *Extremely capital intensive industries* (the most capital intensive and nearly entirely incorporated subset of *Highly capital intensive industries*) hold a large fraction of the capital stock of the *Corporate sector* and, as we already noted, their profit rate did not decline. More sophisticated computations can be made for the *Nonfinancial corporate sector*, because of the availability of data concerning the financial components of the balance sheet of these corporations and their financial incomes. For these two reasons, the specific features of *Extremely capital intensive industries* and the better data for nonfinancial corporations, we define the *Restricted corporate sector* :

$$\begin{pmatrix}\text{Restricted}\\ \text{corporate}\\ \text{sector}\end{pmatrix} = \begin{pmatrix}\text{Corporate}\\ \text{sector}\end{pmatrix} - \begin{pmatrix}\text{Corporate}\\ \text{finance}\end{pmatrix} - \begin{pmatrix}\text{Extremely}\\ \text{capital intensive}\\ \text{industries}\end{pmatrix}$$

(*Corporate finance* includes *Insurance* and *Real estate*.) The fall of the profit rate in the *Restricted corporate sector* was large, though compensated to some extent by the alleviation of taxation.

When the effects of indebtedness are considered, they appear always to reduce the profitability of net worth if the devaluation of debt by inflation is not taken into account. The inclusion of this devaluation corrects for this paradoxical finding, and reveals a significant reprieve from the falling profit rate during the 1970s, as result of very low real interest rates. Combining the diminution of taxation and this latter effect, the profit rate of the *Restricted corporate sector* remained at the same level during the 1970s as during the 1960s. It fell very sharply at the beginning of the 1980s, and recovered partially. An additional finding is that financial investments in foreign shares do not appear to have altered significantly the profitability of nonfinancial corporations.

Finally, section 6.4 is devoted to the profit rate of *Finance*. The profit rate of this sector must be defined using the net worth of firms and taking account of dividends received. This last section returns to the issue of gravitation, comparing the profit rate of the *Restricted corporate sector* and the profit rate of the *Restricted financial sector* (mostly composed of corporations). (This *Restricted financial sector* makes nearly the totality of the profits of the entire *Finance*.) It appears that these two profit rates tend to gravitate around a common value, in spite of the obvious impact of the dramatic changes in inflation rates and real rates of interest.

6.1 Sizes

Figure 24 depicts the relative shares of the *Corporate sector* in the net product and capital stock of *Business*. In the average over the period 1948-1997, the share of the *Corporate sector* in the net product of *Business* amounted to 73%. From 64% in 1948, it rose up to the 1980s, and now fluctuates around 77%. The share of the *Corporate sector* in the total capital remained rather stable around 75% in the average, with a slight downward trend. Overall, the *Corporate sector* represents now approximately three quarters of *Business*.

Figure 24 Net product and fixed capital: Shares of the *Corporate sector* in *Business*

Net product (——); Fixed capital (— —).

Appendix A.2 shows that the ratio of corporate profits to the total nonwage income (corporate profits before tax plus the income of self-employed persons) remained rather stable since World War II (figure 39).

6.2 Profitability as determined by technology and distribution

We begin with the same definition of the profit rate as in section 5.1:

$$r = \frac{\text{Net product} - \text{Labor compensation}}{\text{Fixed capital}}$$

Figure 25 displays the profit rate using this measure for three sectors, *Business* (as in figure 17, series 1.), the *Corporate sector*, and the *Noncorporate sector*.[25] Figure 26 presents the same results, but the figures have been normalized to 1 for the period 1956-1965.

Several observations can be made:

1. The profit rate of the *Corporate sector* was lower than that of total *Business* up to the early 1980s, and became larger.

2. A corollary of the above observation is that, over the entire period, the *Corporate sector* declined less than *Business*. It diminished between 1965 and 1982, but it recovered, in 1997, to its levels in the late 1950s.

25. The variables of the *Noncorporate sector* are the differences between those of *Business* and those of the *Corporate sector*.

Figure 25 Profit rate: The *Corporate* and *Noncorporate sectors*

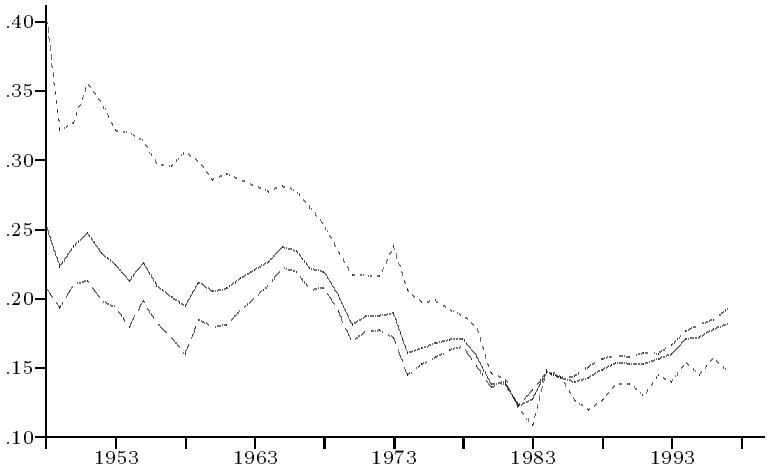
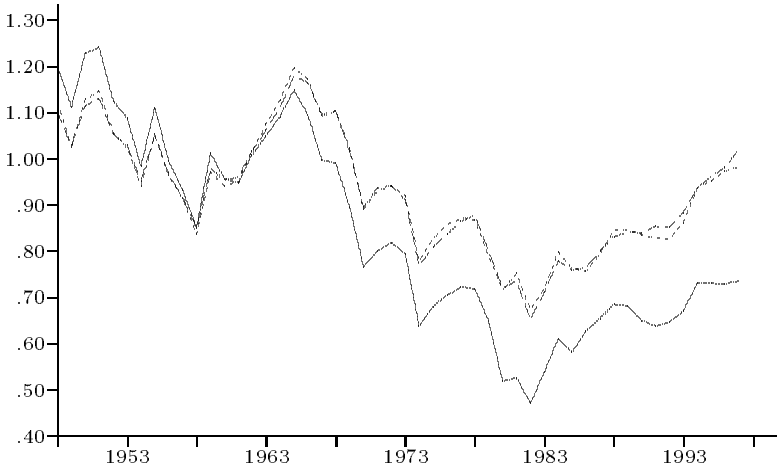


Figure 26 Profit rate as in figure 25 normalized to 1 for 1956-1965: The *Corporate* and *Noncorporate* sectors

Business (——); *Corporate sector* (— —); *Noncorporate sector* (-----).
Profit rate = (Net product − Labor compensation)/Fixed capital.

Figure 27 Profit rate : The *Corporate sector*, the *NF-Corporate sector* and the *Restricted corporate sector*

Figure 28 Profit rate as in figure 27 normalized to 1 for 1956-1965 : The *Corporate sector*, the *NF-Corporate sector*, and the *Restricted corporate sector*



Restricted corporate sector (——) ; *Corporate sector* (– –) ; *Nonfinancial corporate sector* (-----).
Profit rate = (Net product − Labor compensation)/Fixed capital.

3. The *Noncorporate* sector declined sharply up to 1983, and then remained nearly constant.

We now focus on the *Corporate sector*. Figure 27 displays the profit rates of three industries : the entire *Corporate sector*, the *NF-corporate sector*, and the *Restricted corporate sector*.[26] Figure 28 presents the same series normalized to 1 for the average of the decade 1956-1965. The followings are noteworthy :

1. The profit rates of the *Corporate sector* and *NF-corporate sector* are very close. As stated above the recovery since 1982 practically offset the earlier fall since the 1960s.

2. The profit rate of the *Restricted corporate sector* is larger than that of the *Corporate sector*. This is obvious, because of what has been said above concerning the *Extremely capital intensive industries*, but the amplitude of the difference is dramatic. Even more interesting is the fact that the profit rate of this sector displays a strong downward trend, and only a limited recovery. From the 1956-1965 decade to 1982, it was approximately divided by 2. In 1997, it is only equal to 74% of its average for 1956-1965. These observations are consistent with those made in section 4, where the components of the *NF-Core* were considered, and with the estimates of section 5 when *Highly capitalist industries* are excluded.

Thus, the uniqueness of the *Restricted corporate sector*, as compared to *Business*, results from the exclusion of two sectors. First, the *Extremely capital intensive industries*, which basically consists of corporations, represent a larger fraction of the sector than within total *Business*. (In the average for the period 1948-1997, the *Extremely capital intensive industries* accounted for 6% of the net product and 30.8% of the capital stock of *Business*, and 8.2% of the net product and 40.9% of the capital stock of the *Corporate sector*.) Since the profit rate in these industries did not decline (figure 20), they contributed to flattening the profit rate of the *Corporate sector*. Second, the profit rate of the *Noncorporate sector* declined significantly more than that of the *Corporate sector* and, therefore, than that of *Business*.

Appendix A.11 supplements this investigation by a discussion of the impact of inventories on the profit rate of the *Restricted corporate sector* (figures 59 and 60). The consideration of inventories significantly diminishes the profit rate of the sector, but does not affect its trend. Appendix A.10 discusses the impact of capital consumption adjustments and inventory valuation adjustments (in the *Restricted corporate sector*). As in the case of *Business*, the profit rate appears slightly less trended downward after adjustments are made.

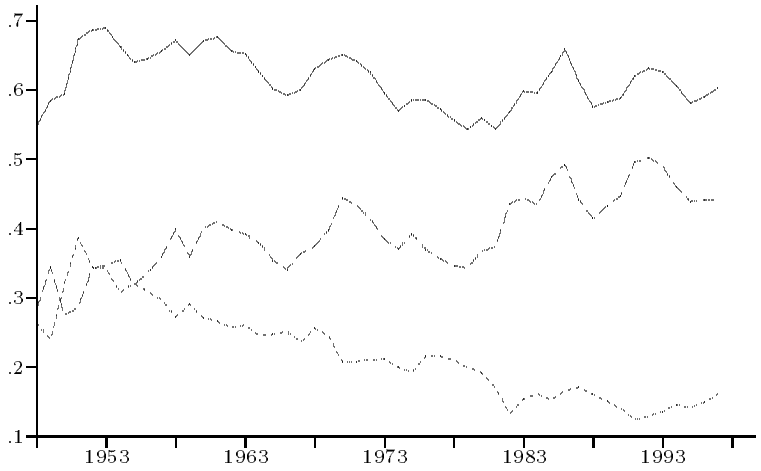
6.3 Profitability as felt by corporations

The investigation in this section is limited to the *Restricted corporate sector*. It moves progressively toward a definition of the profit rate closer to the one observed by firm management.

Consider first the *taxation* as described in figures 29, 30, and 31 :

26. An approximation, in this computation, is that the *Extremely capital intensive industries* are not entirely incorporated.

Figure 29 Share of taxes in profits before tax



All taxes (——); Indirect business taxes (— —); Profit taxes (-----). The sector is the *Restricted corporate sector*.

1. Figure 29 displays the proportion in total profits (prior to the deduction of net interest and taxes) of: (1) all taxes, (2) indirect business taxes, and (3) profit taxes. A first observation is that the burden of taxation declined since the early 1950s. It reached its maximum in 1953 at 68.9% (instead of 54.7% in 1948). In 1997, it was equal to 60.3%. The weight of indirect business taxes rose from 28.4% in 1948 to 44.2% in 1997. Conversely, the weight of profit taxes declined from a maximum of 38.7% in 1951 to 16.1% in 1997 (with a minimum of 12.4% in 1991). This diverging evolution of the two types of taxes was felt up to the early 1980s. Since then, the proportion tends to stabilize.

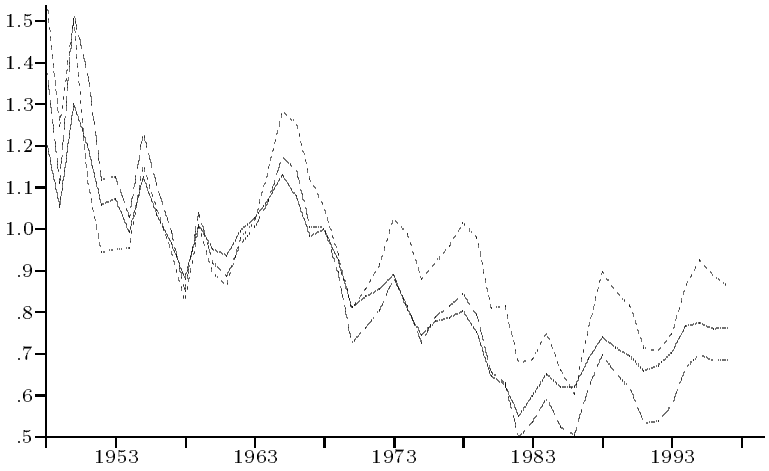
2. Figure 30 depicts the profit rates: (1) without subtracting any taxes; (2) subtracting indirect business taxes; and (3) subtracting all taxes (indirect business taxes and profit taxes). In 1948, the profit rate before all tax was equal to 27.5%, whereas it was 12.4% after tax. In 1997, the same figures are 17.2% and 6.8%.

3. To assess the effects of taxation on the trend of the profit rate it is again useful to normalize all profit rates to the decade 1956-1965. As could be expected, the deduction of indirect business taxes slightly increased the decline of the profit rate, whereas this trend appears less steep when all taxes are subtracted, due to the countertendencial impact of the alleviation of profit taxes. Note that this effect was already evident during the 1970s.

We now consider *interest and indebtedness*. For the *Nonfinancial corporate sector*, one has access to the entire balance sheet of firms, and it is possible to compute the profitability over the net worth of firms (also called *enterprises' own funds* or *shareholders' equity*). Recall that *net worth* is the sum of all assets: fixed capital and inventories (*i.e.*, tangible assets), and financial assets, minus total liabilities (debt). The net debt is the

Figure 30 Profit rate: Effects of taxation

Figure 31 Profit rate as in figure 30 normalized to 1 for 1956-1965: Effects of taxation



Before tax (——); after indirect business tax (— —); After all tax (-----). The sector is the *Restricted corporate sector.*
Profit rate = (Net product − Labor compensation − Taxes)/(Fixed capital + Inventories).

difference between liabilities and financial assets. One has:

$$\text{Net worth} = \overbrace{\underbrace{\text{Fixed capital} + \text{Inventories}}_{\text{Tangible assets}} + \underbrace{\text{Financial assets} - \text{Liabilities}}_{-\text{Net debt}}}^{\text{Total Assets}}$$

Obviously, the consideration of net worth instead of tangible assets as a measure of capital implies that profits should be estimated after net interest.[27] Ideally, one of the two following definitions should be used alternatively[28]:

$$\frac{\text{Profits before net interest}}{\text{Tangible assets}} \quad \textit{or} \quad \frac{\text{Profits after net interest}}{\text{Net worth}}$$

The results are displayed in figure 32. We first consider only two of the three series: (——) and (– –).[29] One can observe that the profit rate after net interest and over net worth is nearly always smaller than before net interest over tangible assets. The impact of interest is only apparent from the late 1960s onward, and becomes large during the 1980s in relation to the rise of interest rates.

Figure 33 presents the same profit rates normalized to 1 for the decade 1956-1965, which differ only slightly from the previous ones since the effect of interest was very limited prior to 1965. The decline of the profit rate appears sharper in the measure of the profit rate after net interest, but difference tends to vanish during the recent years. This was simultaneously the result of the decline of interest rates and indebtedness.

The above computation does not allow, however, for a thorough assessment of the consequences of indebtedness and interest payment on profit rates. In a period of inflation, debt is devalued progressively, and the actual interest charge is equal to interest paid minus the devaluation of the net stock of debt. The last measure (-----) in figures 32 and 33 accounts for this devaluation. This measure is identical to the second measure, the profit rate after net interest and over net worth, but a correction is made for the devaluation of the net debt.[30] We now compare the profit rate on tangible assets and before net interest payment (——) to the profit rate on net worth, after net interest payment but taking account of the devaluation of the net debt (-----):

1. Overall this devaluation of the net debt compensated for the negative impact of net interest.

27. This reminds us, retrospectively, that net worth should have been used in the previous sections of this study, instead of tangible assets when interest is deducted from profits. Unfortunately, the series are not available by industry.

28. The problems posed by the holding of shares among financial assets and the corresponding dividends are treated below.

29. We derive an estimate the net debt of the *Extremely capital intensive industries* from their flow of interest. To this end, we assume that the apparent interest rate on their net debt (the ratio of net interest to the net debt) is the same for these industries as for others within the *NF-Corporate sector*.

30. The real interest rate is equal to the nominal interest rate minus the inflation rate: $i_R = i - j$. Multiplying both sides of this equation by the stock of net debt (total outstanding liabilities minus financial assets) shows that the "real" income transfer is equal to interest paid, iD, minus the devaluation of debt, jD: $i_R D = iD - jD$.

Figure 32 Profit rate : Indebtedness and interest

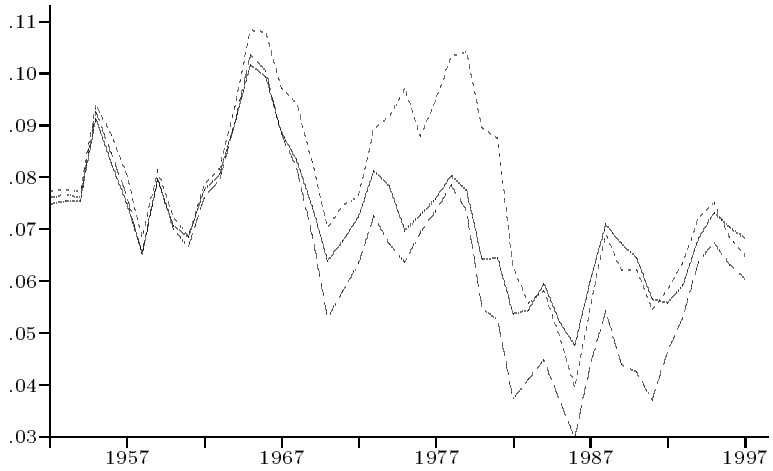
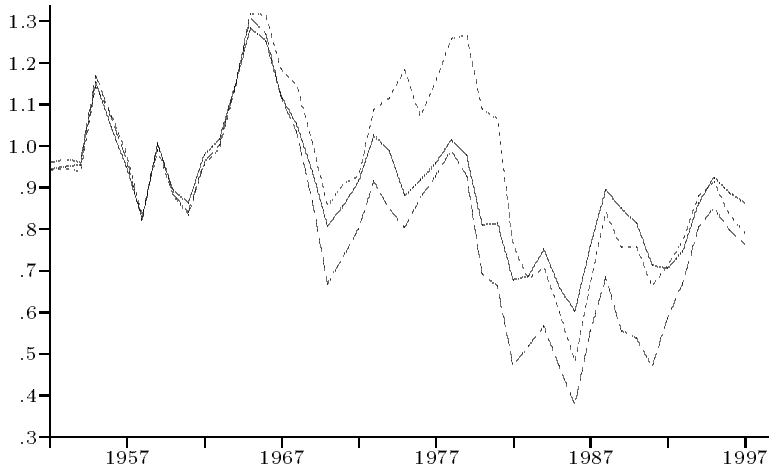


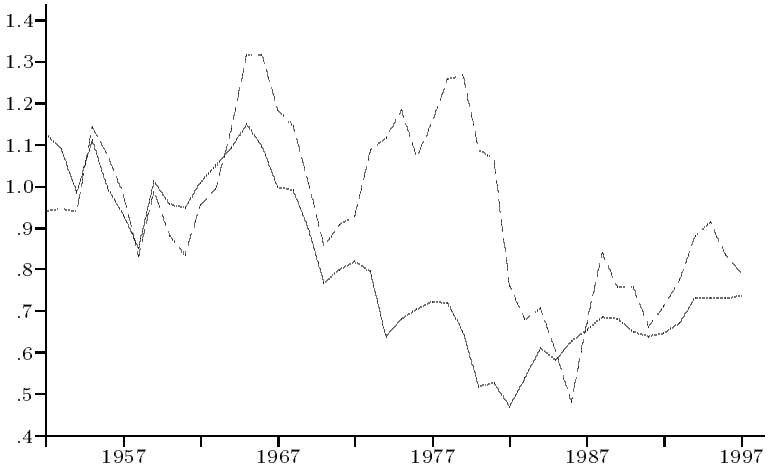
Figure 33 Profit rate as in figure 32 normalized to 1 for 1956-1965 : Indebtedness and interest



Three alternative definitions of the profit rate are used :
1. Profit rate = (Net product − Labor compensation − All taxes)/(Fixed capital +Inventories) (——) ;
2. Profit rate = (Net product − Labor compensation − All taxes − Net interest)/Net Worth (— —) ;
3. Profit rate = (Net product − Labor compensation − All taxes − Net interest + Correction for inflation)/Net Worth (-----).
The sector is the *Restricted corporate sector*.

Figure 34 Profit rate : Taxation, interest, and inflation

Figure 35 Profit rate as in figure 34 normalized to 1 for 1956-1965 : Taxation, interest, and inflation



Two alternative definitions of the profit rate are used :
1. Profit rate = (Net product − Labor compensation)/Fixed capital ;
2. Profit rate = (Net product − Labor compensation − All taxes − Net interest + Correction for inflation)/Net Worth (——).
The sector is the *Restricted corporate sector*.

2. The global impact of indebtedness was already positive during the 1960s, when inflation was still low and real interest rates were positive but lower than the profit rate.

3. During the 1970s, the real interest rate was approximately null or even negative, and this devaluation of debt became very large. As a result, the profit rate, in this measure, remained high.

4. This effect of inflation was nullified after the rise of real interest rates from the early 1980s onward.

5. During the last years both the net debt and interest rates diminished, and the impact remained small.

Overall, the major consequences of indebtedness on the profitability of net worth, combining interest payment and the devaluation of debt, was felt during the 1970s.

The profit rate in the Restricted corporate sector, after interest and correction for the devaluation of debt by inflation, provides an interesting estimate of profitability as it was actually felt, in the average, by the vast majority of nonfinancial corporations. From 1952 to 1959, it fluctuated around 8.1%. It did not decline prior to the 1980s, as a result of low real interest rates. Comparing the decade 1956-1965 and 1988-1997, the profit rate now reaches levels still lower by 1.7 percentage point.

These computations stress the considerable distance which exists between a computation *à la Marx* for *Business*, as in figure 17, which accounts for technology and distribution, or as in figure 28 for the *Restricted corporate sector*. Limiting the investigation to the *Restricted corporate sector*, figures 34 and 35 compare the profit rate *à la Marx*, as in figure 30 (——), to the profit rate actually felt by corporations, as in figure 32 (-----). The differences in levels and trends are both striking. This impact of taxation, interest rates, and inflation could be called the "policy component" of profitability. It provides a dramatic picture of the "reprieve" of the 1970s (figure 35).

The above measures of the profit rate still abstract from the fact that corporations receive dividends as a remuneration of the stock of shares that they hold. Recall that, in the *Flow of Funds Accounts* the shares of the sector are not included within financial assets and, therefore, not computed in the determination of net worth. (The remaining shares correspond mainly to US direct investment abroad.) In a similar manner, the dividends paid in the sector to other corporations of the sector are not treated as *dividend received*. This financial component of the activity of firms is significant. Figure 63 in appendix A.13 describes the impact of dividends received on the profitability of corporations as in figure 32. It shows that this effect is small and not trended over time, if the computation of net worth is appropriately adjusted for the holding of shares.

6.4 Finance : Gravitation and trend

The financial sector has been excluded from the analysis of the gravitation of profit rates among industries. The main reason for this exclusion is that the best measure of capital available by industry is tangible assets (fixed capital and inventories). Although the net worth of firms would have been preferable, tangible assets provide an acceptable substitute for most industries with the exception of *Finance*. Moreover, it is also necessary

to include dividends received in the profits of *Finance*. Thus, the profit rate used is[31] :

$$r = \frac{\text{Net product} - \left(\begin{array}{c}\text{Labor}\\ \text{compensation}\end{array}\right) - \left(\begin{array}{c}\text{All}\\ \text{taxes}\end{array}\right) - \text{Net interest} + \left(\begin{array}{c}\text{Dividends}\\ \text{received}\end{array}\right)}{\text{Net worth}}$$

A consequence of these data limitations is that the profit rate of *Finance* can only be compared, in the above definition, to the profit rate of the *NF-Corporate sector*.

The two main questions at issue in this study can be discussed in this framework :

1. Do the profit rates of *Finance* and the *NF-Corporate sector* gravitate around a similar value ? As was shown earlier, the profit rates of the *Highly* or *Extremely capital intensive industries* are not part of profit rate gravitation (being very low). Therefore, we will test gravitation for *Finance*, in comparison to the *Restricted corporate sector*, which excludes these capital intensive industries.

2. What is the trend of the profit rate of *Finance* ? Obviously, if the two profit rates do gravitate, the profit rate of *Finance* must display a profile similar to that of the *Restricted corporate sector*.

A first difficulty in this investigation is to determine which components of *Finance* can be included in what we denoted as *the field of capital mobility* in section 2.3. Table 7 displays the 22 subsectors that compose the financial sector in *Flow of Funds Accounts* :

1. We first exclude all government institutions, whose activity is not aimed at profitability :

108 Monetary Authority

124 Government-Sponsored Enterprises

125 Federally Related Mortgage Pools

2. We also leave aside *Real Estate* which has been excluded from the definition of *Finance*, and only corresponds to a small fraction of total *Real estate* (as defined in NIPA and GPO) :

129 Real Estate Investment Trusts

3. Within *Flow of Funds Accounts*, a number of institutions, such as Pension and Mutual Funds, make no profits, since their total income is "imputed" to other agents (in particular households). This imputation is made independently of any actual transfer.[32] Some among other institutions have no gross savings, and therefore no profits. Thus, we set all funds aside :

119 Private Pension Funds

120 State and Local Government Employee Retirement Funds

121 Money Market Mutual Funds

122 Mutual Funds

123 Closed-End Funds

as well as other institutions which do not make profits :

31. Capital gains are not considered as profits. All taxes are subracted from profits since the effective taxation rate (the ratio of taxes to profits) is very different for *Finance* and the *Nonfinancial corporate sector*.

32. See table 8.18 of NIPA. *Imputed interest* corresponds to both interest and dividends received, although dividends received are not included in *profits* in NIPA.

116 Bank Personal Trusts and Estates

128 Mortgage Companies

131 Funding Corporations

The other subsectors form what we call the *Restricted financial sector*. They are displayed in boldface in table 7.

Flow of funds provides financial assets and liabilities for the *Restricted financial sector*, but not tangible assets, and no measure of profits. It is, however, possible to show that the *Restricted financial sector*, as defined above, makes nearly the totality of the profits and holds nearly all the tangible assets of total *Finance*. These properties allow for an estimate of the profit rate of the *Restricted financial sector* (appendix A.14).

In spite of the problematic character of these estimates, the results in figure 36 reveal a rather tight gravitation of the profit rates of the *Restricted corporate sector* and the *Restricted financial sector*. More work will be necessary to confirm these results, but this already appears as an important finding.[33]

A first difference in the profile of the two profit rates is that the customary "bulge", observable during the 1960s, is less apparent for the *Restricted financial sector*. The major observation is, however, the significant and lasting deviation during the 1970s and 1980s. It reflects two types of developments[34] :

1. As shown in section 6.3, during the 1970s, inflation reduced the typical transfer of resources from borrowers to lenders, and sometimes inverted the direction of this transfer.[35]

2. The low profit rates of the *Restricted financial sector* during the 1980s were the result of the banking and thrift crises, which affected *one fraction* of the financial sector, while very favorable circumstances were created for another fraction. The situation stabilized in the 1990s, with a *Restricted financial sector* considerably enlarged.

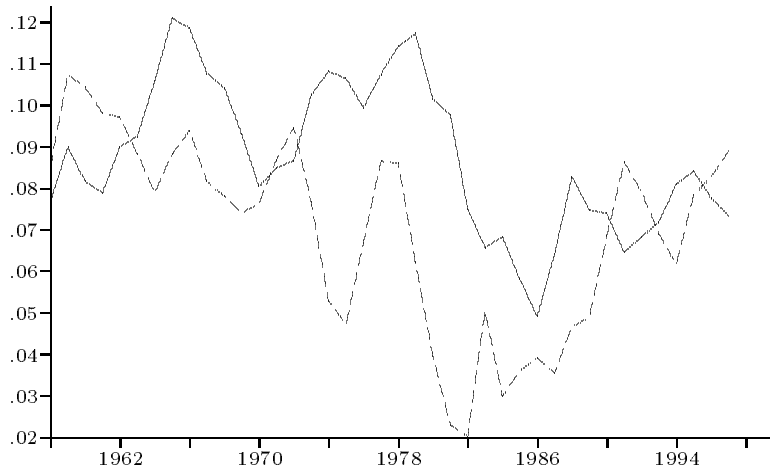
As already implied in the above analysis, the historical trend of the *Restricted financial sector* is similar to that of the *Restricted corporate sector*, declining up to the early 1980s, and then recovering.

33. Appendix A.14 compares the profit rate of the two sectors without correction for the devaluation of debt by inflation.
34. Only briefly sketched here. See G. Duménil, D. Lévy, Costs and Benefits of Neoliberalism. A class analysis, Cepremap, Modem, Paris, 1999.
35. When the correction for inflation is not done, the profit rate of the *Restricted financial sector* remains large during the 1970s and falls suddenly at the beginning of the 1980s.

Table 7 : The components of the financial sector in *Flow of Funds Accounts*

108 Monetary Authority
109 **Commercial Banking**
110 **U.S.-Chartered Commercial Banks**
111 **Foreign Banking Offices in U.S.**
112 **Bank Holding Companies**
113 **Banks in U.S.-Affiliated Areas**
114 **Savings Institutions**
115 **Credit Unions**
116 Bank Personal Trusts and Estates
117 **Life Insurance Companies**
118 **Other Insurance Companies**
119 Private Pension Funds
120 State and Local Government Employee Retirement Funds
121 Money Market Mutual Funds
122 Mutual Funds
123 Closed-End Funds
124 Government-Sponsored Enterprises
125 Federally Related Mortgage Pools
126 **Issuers of Asset-Backed Securities**
127 **Finance Companies**
128 Mortgage Companies
129 Real Estate Investment Trusts
130 **Security Brokers and Dealers**
131 Funding Corporations

Figure 36 Profit rate: The Nonfinancial restricted corporate sector (——) and the Restricted financial sector (– –)



Profit rate = (Net product – Labor compensation – All taxes – Net interest + Correction for inflation + Dividends received)/Net Worth

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