RÉSUMÉ

LA CONCURRENCE SELON BRENNER


MOTS CLEFS : Baisse du taux de profit, concurrence, changement technique, économie mondiale, crise.

KEYWORDS : Falling profit rate, competition, technical change, world economy, crisis.

Introduction

This paper addresses the theoretical basis of the results contained in Robert Brenner’s *The Economics of Global Turbulence*. We do not disagree with Brenner that the profit rate did decline and that this profit rate was a central variable in the crisis of capitalism which began in the 1970s. The issue is not whether the recent performances of the US economy were astounding or poor according to historical standards — whether there was, for example, a productivity slowdown, a striking decline in the growth rate of real wages related to that of the profit rate, or a slow accumulation of capital. Many scholars on the left have discussed at length these features of the latter decades of capitalist history. In combination with the notion that the present neoliberal stage of capitalism can be interpreted as a resurgence of the power of financial capital, these observations aroused a new interest in Marxist economics and Marxism in general, to which we, of course, applaud. Brenner’s contribution — largely publicized around the world — will certainly contribute to this renewal. The purpose of this study is not either to suggest an alternative analysis of the decline of the profit rate in the latter decades, its causes and potential recovery. Brenner makes a number of criticisms of other approaches that he lumps together as “supply-side” or “profit-squeeze” approaches. Vindicating some of these analyses — the traditional Marxian framework, in particular — has been and will be the object of other works.

This study examines Brenner’s core contribution to the debate, with which we disagree: the cause of the decline of the profit rate from the mid-1960s to the early 1980s, within the US and other major capitalist countries, was excess international competition. (His basic line of argument is summarized in section 1.1, in particular in diagram 1.) Abstracting from a number of secondary effects to which we will return, the most obvious criticism can be formulated as follows:

*Overcapacity and price competition within particular industries could only explain the fall of the profit rate within these industries not that of the average profit rate in the entire economy.*

If Brenner had no explicit answer on this issue, it would be useless to examine the details. But he has one, at least in his theoretical analysis.

A lot of confusion is actually created by the disconnect between Brenner’s theoretical framework (chapter One, section II) and his historical-empirical application. In the presentation of his theoretical framework of analysis, Brenner struggles with the difficulty of accounting for an economy-wide fall of the profit rate by excess competition in Manufacturing, and he attempts to surmount this difficulty invoking the effect of competition on real wages (declining prices increase the purchasing power of wage-earners). In his historical survey, Brenner only uses a notion of markup over costs. He seems content with the observation of a decline of the Manufacturing profit rate. According to Brenner, the low profitability levels of US Manufacturing and the twin deficits explain the crisis in the US, which is exported to the entire economy and to other countries.

This paper focuses on Brenner’s theoretical framework: competition and its impact on real wages which accounts for the fall of the profit rate in the whole economy. Brenner would not dispute the fact that his theory of the falling profit rate is based on rising real

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wages. Leaving this point aside, we have two major criticisms of Brenner’s analysis: (1) Brenner’s description of competition within Manufacturing is arbitrary; (2) He fails in his attempt to extend the decline of the profit rate to the whole economy.

This paper divides into two parts:

1. The first part considers Brenner’s theoretical framework of section II of the first chapter, taking him in his words (section 1). We describe Brenner’s basic observations concerning profit rates, a key element in the interpretation of his entire line of argument. In particular, we call attention to his emphasis on Manufacturing (section 1.1). Making explicit Brenner’s theoretical framework is a formidable task in itself, and a necessary prerequisite to any discussion (section 1.2). We contend that two of Brenner’s basic assertions that he relies on to account successively for the decline of the Manufacturing profit rate and for the decline of the profit rate of the entire economy, are unfounded (section 1.3).

2. The second part discusses Brenner’s analysis in relation to standard frameworks within economic theory (section 2). Three “rough spots” are located concerning adjustments by prices or quantities (neoclassical VS Keynesian economics), partial and general analysis, and mark-up procedures (section 2.1). Then, the relationship between Brenner’s analysis and that of Marx is specifically discussed, in particular concerning their differing understanding of the relationship between competition and crises (section 2.2).

1 - Brenner’s theory of competition

This section explains how we understand the core framework as presented in section II of chapter One of Brenner’s article. This analysis is first simply recalled in relation to Brenner’s empirical observations of industrial profit rates (section 1.1). Second, a more formal description of Brenner’s underlying model is presented (section 1.2). Then, we question the two basic steps of the argument concerning: (1) the determination of prices after the entry of the new more efficient competitors in one industry and the consequences of diminished prices on the profit rate of this industry, and (2) the extension of the decline of the profit rate in this industry to the overall economy (section 1.3).

2. Another paper is devoted to Brenner’s views concerning distribution, his analysis of the determination of wages and of mark-up rates (G. Duménil, D. Lévy, “Brenner on Distribution”, Historical Materialism, 4 (1999), p. 73-94). Can Brenner claim a specificity with respect to what he calls “wage squeezers”? Do mark-up behaviors determine real wages and profit rates as in a Kaleckian model? Do we learn something from Brenner concerning the secular trend of wages and of the profit share? The main conclusions of this other study are (1) that Brenner’s Kaleckian theory of the determination of real wages and of the wage share by mark-up rates reflecting the intensity of competition must be dismissed in favor of the classical-Marxian view that real wages are determined “exogenously”, i.e., by other mechanisms, and (2) that it is very difficult to justify empirically the assertion that manufacturing profit rates declined because firms could not mark up adequately, rather than because the productivity of capital diminished. In addition, it appears that Brenner’s attack on wage squeezers is mislead. For wage squeezers, the progress of the purchasing power of workers is conquered; for Brenner, it is given out.
1.1 Declining profit rates

Brenner’s emphasis on Manufacturing relies on his empirical observation of profit rates in the US for the manufacturing and non-manufacturing sectors of the economy, as in his figure 8. Figure 1 reproduces figure 8 of Brenner in our own computation.\(^3\)

In spite of some differences in measurements\(^4\), the two figures provide a similar picture. They show the striking difference of levels and profiles in the profit rates of the manufacturing and non-manufacturing sectors of the economy: (1) The manufacturing profit rate is quite larger up to the 1970s or 1980s; (2) It declined considerably, whereas the profit rate for non-Manufacturing only diminished slowly in Brenner’s figures (its trend is rather upward in our measure, and only downward between 1966 and 1982). These observations justify Brenner’s emphasis on Manufacturing, in relation to international competition, in his explanation of the decline of the profit rate in the entire economy.

Figure 1  US profit rates: Manufacturing (---), non-Manufacturing (--), and Total (-----)

\[ r = \frac{\text{National income} - \text{Total labor compensation}}{\text{Net non-residential capital}} \]

This profit rate is after indirect business taxes, and abstracts from interest flows. The non-Manufacturing is Total private economy minus Manufacturing.

3. The data are from the BEA: NIPA and capital stock table, 1998. We make three adjustments: (1) To restrict the measure of income to its component related to production, we subtract Rental income of persons without capital consumption adjustments (table 1.15) from National income (table 6.1); (2) To determine the total income of self-employed, we add Farms proprietors’ income (table 1.15), which is already part of national income, to Non-Farm proprietors’ income (table 6.12); (3) We make a correction for self-employed, which separates between fictitious profits and labor compensation. The profit rate is:

4. Brenner uses: (1) different sources (Gross Product Originating data and data from the BLS); (2) a different unit of analysis (non-Farm non-Manufacturing); (3) a distinct treatment of indirect taxes.
Brenner actually focuses on the period 1965-1973, a period of rapid decline. Rather than a declining trend of the profit rate, he views this period as a break. This is evident, for example, at the beginning of chapter Three: “[the] world was suddenly projected from boom to crisis” (p. 93), and this break was followed by a “long epoch of reduced rates of profit” (p. 93). Brenner believes than an outburst of competition in the world economy was responsible for such a step downward of the profit rate in the US and other countries, not simply a temporary fluctuation but a lasting change in levels.

Diagram 1 summarizes Brenner’s line of argument. The dotted line delineates Brenner’s core analysis. Technical change is rapid in one industry, and concentrated within a segment of the industry (technology is heterogeneous among firms). The market power associated with more efficient techniques pushes the more advanced firms to conquer markets and invest aggressively. A situation of “overcapacity” and potential “overproduction” prevails that starts a competitive warfare for outlets. Beyond the possible impact of diminished capacity utilization rates, competition results in declining prices and profit rates in the industry.

This framework is applied to the world economy. Basically, the Japanese and German manufacturing industries outperformed US Manufacturing imposing low prices and low profit rates in US Manufacturing, as well as in the average US economy. The crisis was then “exported” to the major capitalist countries, whose profit rates also declined.

A first difficulty is that Brenner does not purport to explain only the movement of the profit rate within US Manufacturing, but in the world Manufacturing and, even, in the world economy in general. A second problem is that he wants to explain the decline of the profit rate within the world Manufacturing by the decline of prices in the US. He knows that the decline of prices in one particular line benefits other lines, diminishing the price of their inputs and, thus, increasing their profit rate. It is, therefore, impossible to conclude concerning the average profit rate in the whole economy. This is where real wages are brought to the fore. Contrary to what could be understood from the introduction to section II of chapter One, real wages are not constant, since this downward pressure on prices pushes real wages up. Following Brenner, the average profit rate of the entire (world?) economy declines, provided that real wages rise. This is quite explicit in Brenner piece, although this analysis is confined to one section (p. 29): “if labour is able to get any of the gains from the decrease in prices”, i.e., under the assumption of “higher real wages”, then competition “will indeed result in a fall in profitability for the economy as a whole”.

Thus, it is the rise of real wages due to the decline of prices in one industry, which creates the downward trend of the profit rate for the “whole economy”. It is only the average profit rate which declines, but not the profit rate of non-Manufacturing, which should rise. In other words, the rise of the profit rate within non-Manufacturing is not sufficient to compensate for the decline within Manufacturing when the total is considered.

5. Note parenthetically that the causation often runs from rapid investment to technical progress, as in the Kaldor-Verdoorn analysis. The direction is reversed here.

6. This observation raises the issue of the explanatory power of Brenner’s analysis. Following Brenner, the crisis within non-Manufacturing was not caused by its diminished profit rate, but driven by the crisis within Manufacturing. In addition, Brenner does not actually apply his framework of analysis to other countries, like Japan, neither theoretically nor empirically. The various markets have distinct features: The competitive war raged in the US Manufacturing, not within Japanese markets which remained largely protected. Would Brenner extend his explanation concerning the rise of real wages in the US—due to international competition—to Japan? More likely, he interprets the crisis in Japan, as he does for non-Manufacturing in the US, as a conse-
1.2 The model

Brenner first considers a particular industry, where technology and nominal wages are given, as well as “aggregate demand”. (This section focuses on Brenner’s developments p. 24-29.) The existing productive capacity is well in line with this demand. Therefore, the capacity utilization rate is normal, and the same is true of prevailing prices and of the profit rate. Competition is rather peaceful. Brenner seems to assume, in this situation, a uniform profit rate, \( r^u \), across industries. (This corresponds to the situation in the US prior to 1965.)

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sequence of the crisis in American Manufacturing. It was “exported” there, in particular via the adjustment of exchange rates. There are serious problems in this analysis, that we will not discuss in this paper.

7. Figure 1 poses serious problems concerning the situation during the 1950s. How does Brenner
Then, the new firms, which have developed more efficient techniques of production, invest in the industry, increasing the productive capacity (overcapacity) and thus the potential supply, while demand remains unchanged (overproduction). Abstracting from the limited demand and its effect on the capacity utilization rates, the new entrants would enjoy a larger profit rate, \( r^\text{n} \), at going prices, while the profit rates of other firms would remain as they were, equal to \( r^\text{u} \). Actually, as a result of overcapacity, a competitive warfare occurs, and new firms cut prices. Due to this decline of prices, all profit rates are reduced, that of new firms, \( r^\text{n} \), as well as that of old firms, \( r^\text{o} \). (The new firms belong to the Japanese and German manufacturing industries, and the old ones to US Manufacturing.)

Thus, Brenner must face two problems. First, what will be the profit rate in the industry were the new more efficient firms entered (i.e., the profit rate within world Manufacturing)? There are two aspects to this issue. On the one hand, the improved technology within one segment of the industry tends to increase the average profit rate in the industry, while, on the other hand, the competitive warfare may have a negative effect on profitability. Second, what will be the profit rate in the entire economy? Brenner wants to show that the two profit rates must fall (i.e., the profit rates of the world Manufacturing and the world economy must decline).

His argument develops in three steps:

1. **The average profit rate, \( r^1 \), in the industry, where old and new firms coexist.** A priori, it can be larger or smaller than \( r^\text{u} \), the original uniform profit rate prior to the warfare. Brenner wants to show that this average profit rate of the industry diminishes. He deduces this result from the following assertion:

   **A1:** New firms reduce prices to a level which only guarantees them the previous uniform profit rate, \( r^\text{u} \) (\( r^\text{n} = r^\text{u} \)): “[…] still maintaining for themselves the established rate of profit” (p. 25, footnote 19).

   With \( r^\text{n} = r^\text{u} \) (the profit rate of new firms is equal to the earlier profit rate in the industry) and \( r^\text{o} < r^\text{u} \) (the profit rate of old firms is diminished), it obviously follows that the profit rate of the industry, \( r^1 \), is diminished (\( r^1 < r^\text{u} \)), since \( r^1 \) is the weighted average of \( r^\text{n} = r^\text{u} \) and \( r^\text{o} < r^\text{u} \). Note that assertion **A1** implies a slightly more general assumption, which is also coherent with Brenner’s analysis:

   **A1’:** The profit rates of the new more efficient firms tend to be all equal, since they “compete among themselves” (cf. footnote 19).

2. **The average profit rate of other industries, \( r^2 \).** One of the consequences of diminished prices in Manufacturing is that the non-wage inputs (circulating and fixed) of the other industries are cheaper. Assuming that nominal wages are maintained, then the average profit rate, \( r^2 \), of these other industries necessarily rises in all instances (\( r^2 > r^\text{n} \)).

   Note that the decline of prices in the first industry has a second consequence: It tends to increase real wages if nominal wages are constant.

3. **The average profit rate in the entire economy, \( \rho \).** This profit rate is the weighted average of the profit rates, \( r^1 \) and \( r^2 \), of the two industries. \( r^1 \) is reduced, while the second, \( r^2 \), is increased. Thus, it appears impossible to conclude concerning the average profit rate for the entire economy. Brenner believes he has a solution to this puzzle. To establish a accounts for the huge difference between the profit rates of manufacturing and non-manufacturing industries?
conclusion concerning the average profit rate for the entire economy, he lets real wages rise (see the quotations in the previous section). His demonstration is based on the following assertion:

**A2**: If nominal wages declined to such a point that real wages would be maintained, then the new profit rate for the entire economy, $r$, would be equal to the original profit rate, $r^u$.

The underlying insight is that what an industry looses is gained by another industry, without consequences for the overall profit rate. An obvious consequence of **A2** is:

**A2’**: If real wages increase to any extent, then the average profit rate of the whole economy declines.

Thus, the average profit rate of the economy declines as a result of the reduction of prices by new firms in the first industry if any of the potential gains in purchasing power is transferred to workers.

### 1.3 Two improper assumptions

The two assertions, **A1** and **A2**, are problematic, but the nature of our concern is different:

1. The first assertion, **A1**, concerning the new prices following the entry of the new more efficient firms is arbitrary. At what level will the new entrants set prices? The issue here is the standard problem of *imperfect competition*. The fact that competition leads to a competitive struggle does not simplify the problem. Quite the contrary, there is obviously no straightforward or unique answer. Within neoclassical oligopoly (or duopoly) theory, several answers are available, corresponding, for example, to Cournot or Bertrand models, or to the many equilibrium strategies in game theory. These frameworks are still simple, in the sense that they describe equilibrium situations. There is also no consensus among heterodox authors such as Marx, Kalecki, or Robinson.

The diversity of theories only mirrors the broad variety of mechanisms involved. Typically, new more efficient firms cannot displace incumbents immediately. The ability of incumbents to resist the newcomers and their strategy will depend to a large extent on the support provided by the financial sector, the importance of customer and industrial relationships, the difficulty to adopt the new techniques, the cost involved, and many policy decisions concerning international trade, rates of exchange of currencies, regulations, etc. Brenner recognizes these factors when he describes the incumbent’s difficulty. A further problem is the intertemporal aspect of these mechanisms: Firms may temporarily accept lower profit rates in order to gain market shares, or defend their position, and make larger profit rates *in the future*.

Brenner’s assertion **A1** simply assures the answer that he needs. Instead of acknowledging his inability to conclude, Brenner contends that competition reduces prices to a level such that the rate of profit of the new firms is equal to the previously prevailing profit rate on new investments ($r^n \leq r^u$, footnote 19). Thus, Japanese automakers, entering the American economy, chose prices guaranteeing them the average profit rate of the American economy, but no more or less. In the same vein, Coca-Cola diminished its prices but only to the point where its profit rate was equal to the previous profit rate of European soda producers. Why?
2. Consider now assertion A2, concerning the constancy of the average profit rate when real wages remain constant. Contrary to what Brenner believes, it is impossible to conclude. The statement concerning the transfer of profits from one industry to another is deficient for three reasons:

(a) A first problem is that the new more efficient technology improves the average technology and has a positive impact on the average profit rate. Brenner’s point concerning the transfer of profits from a producer to another obviously assumes not only given real wages but also a given average technology. This is in contradiction with the assumption of a new efficient entrant.

(b) Even if it were true that the mass of profits remains constant, the variation of relative prices may affect the relative price of fixed capital and impact the price of the capital stock. Therefore, the profit rate can vary in either direction.

(c) The rise of productive capacity under the assumption of a given demand will result in a capacity utilization rate lower than normal in some segments of the industry. It is not possible to ignore this effect. A capacity utilization rate below normal is detrimental to the profit rate.

To sum up, Brenner’s theoretical construct cannot be accepted. We are left with the simple idea that international competition from Japan and Germany was detrimental to the US Manufacturing.

2 - Theoretical frameworks

The previous sections considered Brenner’s framework of analysis for what it is, abstracting as much as possible from what is not made explicit. This section supplements this first approach, discussing a number of additional issues (section 2.1). We then briefly compare Brenner’s analysis with that of Marx (section 2.2).

2.1 Rough spots

We will examine in turn: (1) The obscure treatment of the relative impacts of adjustments by prices or quantities (section 2.1.1); (2) Brenner’s use of partial analysis when a general framework is required (section 2.1.2); (3) The abstraction from inflation in Brenner’s theoretical analysis (section 2.1.3).

2.1.1 Adjusting by prices or quantities produced?

The theoretical foundations of Brenner’s analysis are often difficult to detect. Neoclassical, classical, and Keynesian assumptions are all combined in his text. A clear example of this difficult interpretation is provided by Brenner’s description of firm behavior in a situation of disequilibrium between productive capacity and demand, i.e., the notion of overcapacity.
When producers face deficient demand levels, the adjustment can be alternatively, or in combination, ensured by a diminished use of productive capacity or a diminished price. In the simplest Keynesian analysis, prices are rigid and outputs are adjusted. In the Walrasian perspective, prices are adjusted and productive capacity is used at the optimal level under the prevailing price conditions (optimizing without a constraint). The framework of monopolistic competition lies somewhere in between these two approaches. Profit maximizing is performed under a demand constraint, modeled by a demand function. In the Keynesian model, prices do not play any role, while, in the Walrasian model, they do all the work. Monopolistic competition combines the two types of adjustments.

Brenner’s Keynesian influence—adjustment by quantities produced—is sometimes evident in his reference to excess, unused, capacity. He even mentions capacity utilization rates at one point of his theoretical analysis, “[...] reducing capacity utilization” (p. 28), or an extreme form of the reduction of such a rate, “[...] to cease using some of their means of production” (p. 25). In contrast, the neoclassical influence—of adjustment by prices—is sometimes prominent, for example: “Manufacturing profitability fell only because producers were unable to mark up prices over costs...” (p. 96). Most likely, Brenner has a monopolistic competition model in mind, not a Walrasian equilibrium.

Brenner does not, however, adequately treat quantity and price adjustments. When new entrants penetrate US Manufacturing, two questions must be answered: (1) To what extent will prices diminish? (2) How will demand be shared among the various producers or, equivalently, what will be the capacity utilization rates of the various producers? Only the first question is central in Brenner’s argument, and the purpose of assertion A1 is to answer this question. Although the capacity utilization rate determines the profit rate as much as the price of the output, the second issue is not treated explicitly.

2.1.2 Partial or general analysis?

Brenner is also unconvincing in his treatment of general analysis. A valid result at the level of a single industry cannot necessarily be extended to the overall economy without incorporating a number of new relationships. The simplest example of this difficulty, that Brenner attempts to overcome, is the difference between the determination of the profit rate for a given industry (partial analysis) and for the entire economy (general analysis). Within one industry, the decline of the relative price impacts negatively on the profit rate. The consideration of other industries raises the issue of the profit rate in the industries that benefit from the reduced price of the first industry, and it is impossible to conclude anything about the profit rate in the whole economy without further assumptions.

The way demand is treated in Brenner’s analysis is typical of this difficulty. In his theoretical framework, he only considers demand levels in a partial perspective within one industry. Indeed, in the short term and within one industry, it is quite relevant to assume a given demand (or a given demand function), but the problem is far more complex when the entire economy is at issue. For example, Brenner’s emphasis on overcapacity totally abstracts from the effect of overinvestment on the macroeconomy (the standard multiplier effect). Considering the world economy, it is, for example, difficult to assess the effects on demand of the large Japanese investments.

8. G. Duménil, D. Lévy, “Brenner on Distribution”, op. cit. note 2
2.1.3 Inflation and Markup

An assumption in Brenner’s theoretical analysis is that the general level of prices is constant and that this constancy is disturbed by the decline of prices in the industry where competition is strong. Brenner knows that the profit rate decline occurred during a period of inflation. Thus, in the historical-empirical application of his framework, he resorts to formulations indicating that firms were not able to: “[..] mark up over costs sufficiently to maintain their established rate of return” (p. 96). This is equivalent to saying that nominal wages rise for some reason, and that firms cannot increase their prices correspondingly because of excess competition.

Thus, Brenner adopts the viewpoint of *mark-up* pricing. As we understand his argument: (1) Workers fight for nominal wages; (2) Firms fix their prices by marking up over costs; (3) The value of the mark-up rate depends on competition; (4) Real wages (nominal wages divided by a price index) or the wage share are, thus, determined by the intensity of competitive pressures, independently of the value of nominal wages and of workers fight for improved purchasing power. This implies: (1) a very specific theory of the determination of real wages, that cannot be taken for granted; (2) an explanation of the decline of the profit rate by the rise of the wage share. These two points are discussed in Duménil G. and Lévy D. (1999).9

2.2 Comparison with a classical-Marxian analysis

This section briefly compares Brenner’s framework and traditional classical-Marxian analysis. The purpose of this discussion is to clarify that Brenner, as he confirms, diverges from a Marxist perspective. We acknowledge that Brenner’s analysis may be or not superior to Marx’s analysis, this is not the point. Since most potential readers of Brenner’s piece are familiar with the work of classical economists and Marx, it seems, however, important to address the differences. Section 2.2.1 deals with common principles, section 2.2.2 with differences, and section 2.2.3 with Marx’s explicit treatment of the relationship between competition and the falling profit rate, that, in our opinion, is still relevant.

2.2.1 The centrality of the profit rate and the analysis of “peaceful” competition

There is a broad agreement among Marxist economists concerning the central role played by the profit rate in the explanation of the crisis which began in the 1970s. This justifies to a large extent the common reference to Marx’s work. Brenner shares this view. His singularity among Marxists10, lies in his reference to excess competition as the cause of the falling profit rate. Brenner is close to Adam Smith in this respect.

Independently of the centrality of the profit rate in the analysis of capitalism, Brenner also shares the view that, under ordinary circumstances (to be defined), competition is efficient in allocating capital among industries and profit rates tend to be equalized among industries. This is in line with Marx’s analysis of the formation of prices of production at the beginning of Volume III of *Capital*. Indeed, during specific periods, competitive wars may occur under certain conditions, and important segments of capital can be devalued.

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9. G. Duménil, D. Lévy, *ibid.*
2.2.2 Technical change, profit rates and competition

Marx's analysis of the falling profit rate is schematically represented in diagram 2. It is useful to compare this diagram with diagram 1. Marx's line of argument begins with some unfavorable features of technical change, such as a bias toward a rising technical and organic composition of capital. He contends that wages are not at issue, since the declining trend of the profit rate may be associated with a constant or even rising share of profits (or rate of surplus value). This tendency, if it is not offset by countertendencies, leads to actual declines of the profit rate and to crises. These crises trigger competitive wars.

Mechanization (rising organic composition of capital)

↓

Decline of the Profit Rate

↓

Crisis

↓

Competitive Warfare

Diagram 2

Recall now the main components of Brenner's analysis: (1) Rapid technical change occurs in one industry within a subset of firms, i.e., heterogeneity grows in an industry; (2) The more efficient firms use their advantage to invade markets and are responsible for a situation of overcapacity; (3) Prices are diminished; (4) A first result is that real wages rise; (5) A second result is that profit rates diminish in this industry, rise in the other industries, but diminish in the average. The crisis follows.

As Brenner acknowledges from the beginning of his study, the difference is striking. If technical change is at issue within the two analyses, it is via thoroughly different mechanisms. Problems arise within Brenner analysis because technical change is rapid (in Japan and in Germany) and unequal. Within Marx's analysis, it is a bias of technical change which is central: the fact that too much investment in fixed capital is required in order to raise labor productivity. In Brenner's model, technology is neutral. Following Marx, competitive warfare is a consequence of the decline of the profit rate. It is not a cause. For Brenner, competition is elevated to a cause of the falling profit rate.

It is also interesting to compare Brenner's analysis of competition to that of Marx, beyond the broad acceptance of the classical-Marxian analysis of the formation of prices.

11 Heterogeneity was crucial, in our opinion, in the explanation of the Great Depression, only secondarily in the structural crisis which began in the 1970s. The mechanism was thoroughly different from that described by Brenner. A significant segment of the economy was potentially devalued. A recession started a wave of shuttings of production units and a cumulative downward movement in the activity. Heterogeneity was not a factor of the decline of the profit rate (G. Duménil, D. Lévy, The Great Depression: A Paradoxical Event?, Cepremap, 9510, Paris (1995)).
of production within competition under some conditions. The point at issue is the effect of rapid technical change and its possible concentration within a specific set of enterprises.

For Marx, as well as for Smith and Ricardo, competition is efficient at allocating resources among industries, thereby bringing about a uniform profit rate. This mechanism is decentralized, in that it occurs within disequilibrium, and adjustments are made ex post. Following Marx, the development of capitalism strengthens this ability. He lists as favorable factors in this process: the freedom of trade, the development of the credit system and, of course, the generalization of capitalist relations of production.

Marx was also quite aware of the fact that firms will not perform equally within each industry, even under “ordinary” circumstances. Our interpretation is that profit rates, according to Marx, tend to be equalized among industries, considering the average profit rate of each industry globally (taking account of the spectrum of technical achievements), not on the basis of the best available technology. A difficulty is that, at some points of the chapter on the formation of prices of production, Marx contaminates or confuses his analysis of prices with that of values. Nonetheless, the heterogeneous character of technology is quite evident:

What competition brings about, first of all in one sphere, is the establishment of a uniform market value and market price out of the various individual values of commodities. But it is only the competition of capitals in different spheres that brings forth the production price that equalizes the rates of profit between those spheres.

This process can be modeled in a manner coextensive with the general classical-Marxian principles of decentralized and ex post adjustment. With this interpretation of Marx’s analysis in mind, technical heterogeneity does not bias profit rate equalization. This view is controversial. An alternative interpretation is that only the profit rates of firms with the best technology tend to be uniform among industries. This seems to be Brenner’s viewpoint, at least when excess competition occurs.

2.2.3 Marx on competition and the falling profit rate

Marx’s view of the relationship between the law of the falling rate of profit and competition is clearly stated in the *Theories of surplus-value*, where he discusses the views of Adam Smith and David Ricardo:

The rate of profit has a tendency to fall. Why? Adam Smith says: As a result of the growing accumulation and the growing competition. Ricardo retorts: Competition can level out profits in the different spheres of production [...] but it cannot lower the general rate of profit. This would only be possible [this is Marx’s opinion] if, as a result of the accumulation of capital, the capital grew so much

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12. Brenner also refers to Schumpeter, a point that we will not discuss here.
13. No knowledge of the “model” of the economy or capacity to predict ongoing trends are assumed. Brenner’s formulation in his analysis of “peaceful” competitive circumstances is significantly different and, even, at odds with classical views: “firms can predict what their competitors will do and perfectly adjust” (p. 24).
15. See G. Duménil, D. Lévy, *The Economics of the Profit Rate: Competition, Crises, and Historical Tendencies in Capitalism*, Aldershot: Edward Elgar (1993), Section 8.5.
more rapidly than the population, that the demand for labour were constantly greater than its supply, and therefore wages were constantly rising [...].

Two competitive processes must be distinguished, that among sellers on the commodity market and that among employers in the purchase of labor. Marx theorizes that only the second one may have an effect on the profit rate—distinct from his analysis of the historical tendency for the profit rate to fall—related to the overproduction of capital or more appropriately overaccumulation. This is the mechanism described in the last sentence of the quotation above.

As in the Theories of surplus-value, Marx is emphatic in Volume III of Capital that the first view concerning competition on the commodity market is not critical to a falling profit rate. Marx repeats the same statement several times, for example:

That competition which results from the overproduction of capital would not cause a fall in the rate of profit. Rather the reverse. Since the reduced rate of profit and the overproduction of capital spring from the same situation, a competitive struggle would now be unleashed.

What is the relationship between the tendency for the profit rate to fall and the accumulation of capital? For Marx, the falling profit rate and accelerated accumulation are two components of a same system of tendencies: “[... ] the same reasons that make the profit rate fall also promote accumulation, i.e., the formation of additional capital”.

The illusion that the decline of the profit rate might be caused by excess accumulation in relation to a limited demand for commodities, “overcapacity” in Brenner’s sense, follows, according to Marx, from the misinterpretation of given situations in which it appears that “the fall in profit to be seen as a result of the expansion of business” (see below). In the following extract, that we will follow step by step, Marx specifically considers the deliberate acceptance of a lower profit rate by a capitalist who wants to eliminate competitors (to gain market shares). This is very close to Brenner’s analysis, except that Marx refers to the size of firms, not to their technical advantage:

The most superficial examination of competition also shows that, under certain conditions, if the bigger capitalist wants to make more room for himself on the market and expel the smaller capitalists, as in time of crisis, he makes practical use of this advantage and deliberately lowers his profit rate in order to drive the smaller ones from the field.

Note that Marx writes “as in time of crisis”. It is rather the crisis which causes the competitive war, not the reverse. He is even more explicit later. He provides two examples of misleading situations in which competition can be mistaken as the cause of the decline of the profit rate:

17. “Overproduction” refers to the terminology of Ricardo: “Overproduction of capital and not of individual commodities—though this overproduction of capital always involves overproduction of commodities—is nothing more than overaccumulation of capital” (K. Marx, Capital, Volume III, op. cit. note 14, ch. 15, p. 359).
18. K. Marx, ibid., ch. 15, p. 361.
Commercial capital in particular, which we shall discuss in more detail later, also exhibits phenomena that allow the fall in profit to be seen as a result of the expansion of business and hence of the capital concerned. We shall give the proper scientific expression for this false conception later on. Similar superficial considerations arise from comparing the rates of profit that are made in particular branches of business, according to whether these are subject to the regime of free competition or to monopoly. [...] Here the decline in the rate of profit appears as a result of the increase of capital and the capitalists’ consequent calculation that a lower rate of profit will enable them to tuck away a greater mass of profit.\textsuperscript{21}

We will not attempt here to clarify the specific aspects of these two situations, and move directly to Marx’s next statement:

All this (with the exception of Adam Smith, on whom more later) is based on a complete misconception of what the general rate of profit actually is and on the crude idea that prices are determined by adding a more or less arbitrary quota of profit onto the commodity’s actual value.\textsuperscript{22}

What Marx criticizes here is Smith theory of prices and distribution\textsuperscript{23}, in which the price of a commodity is determined by summing up its various components: the price of the inputs, wages, and profits. This refutation is nothing else than that of a naive conception of markup. Finally, Marx concludes as follows:

Crude as these notions are, they are necessary products of the upside-down way that the immanent laws of capitalist production present themselves within competition.\textsuperscript{24}

The controversy around \textit{The economics of Global Turbulence} provides, in our opinion, a contemporary example of the difficulty that Marx described one century and a half ago: that of articulating historical tendencies and competitive mechanisms.

\begin{itemize}
\item \textsuperscript{21} K. Marx, \textit{ibid.}, ch. 13, p. 331-332.
\item \textsuperscript{22} K. Marx, \textit{ibid.}, ch. 13, p. 332.
\item \textsuperscript{23} Actually, one of Smith’s theories.
\item \textsuperscript{24} K. Marx, \textit{ibid.}, ch. 13, p. 332.
\end{itemize}