



ISSN 1791-3144

**University of Macedonia  
Department of Economics**

**Discussion Paper Series**

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Rate of Profit**

**Lefteris Tsoulfidis and Dimitris Paitaridis**

**Discussion Paper No. 18/2011**

Department of Economics, University of Macedonia, 156 Egnatia str, 540 06 Thessaloniki,  
Greece, Fax: + 30 (0) 2310 891292  
<http://econlab.uom.gr/econdep/>

# Revisiting Adam Smith's Theory of the Falling Rate of Profit\*

Lefteris Tsoulfidis and Dimitris Paitaridis

Department of Economics  
University of Macedonia  
Thessaloniki, Greece

## ABSTRACT

Smith's theory of the falling rate of profit has been usually interpreted as a result of the intensification of competition in the markets of goods and services of the factors of production. This aspect of Adam Smith had been initially posed by Ricardo and subsequently was widely adopted by the major economists of the past as well as from the majority of the modern historians of economic thought. In our view, Smith's analysis of the falling tendency in the rate of profit is by far more complex than usually presented and that the intensification of competition is the result of the falling rate of profit rather than its cause which is the capitalization of the production process.

**JEL Classifications:** B10, B12, B13, B14, B16, H50

**Key Words:** Rate of Profit, competition, mechanization, Adam Smith, Stationary State.

Correspondence:

**Lefteris Tsoulfidis**  
Associate Professor

Department of Economics  
University of Macedonia  
156 Egnatia Street  
540 06 Thessaloniki  
Greece

Tel.: 30 2310 891-788

Fax: 30 2310 891-786

E-mail: [Lnt@uom.gr](mailto:Lnt@uom.gr)

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\* An earlier version of the paper was presented in the annual conference of the European Society for the History of Economic Thought in Thessaloniki, May 2009.

## **1. Introduction**

In this paper we shall endeavour to present the salient features of Smith's argument of the falling rate of profit. Surprising as it might be Smith's analysis is much more complex than usually thought and presented even by major economists. The reasons for the misinterpretations have to do with Smith's style of writing which is not focused enough to particular issues that he deals with and he often switches the analysis to different subjects to return latter to the ones he started out. At the same time, Ricardo's interpretation, which attributed to Smith the intensity of competition as the cause of the falling rate of profit, was very influential. The intensification of competition explanation of the falling rate of profit fitted conveniently to Ricardo's analysis for he could establish much easier his own theory of the falling rate of profit based on the given subsistence wage and the interplay of the population law and the diminishing returns to land. Marx sided with Ricardo's interpretation of Smith and they both criticized the alleged Smith's logical deficiencies as competition in and of itself may lead to a tendential equalization of profit rate between industries and not a fall in the economy-wide average rate of profit. This is ironic, because as we will show, Smith's analysis bears many similarities to Marx's, since for both of them the division of labour and the subsequent mechanization of production lead to the increase in the capital-output ratio and labour productivity which in combination with an approximately constant profit share give rise to a tendential fall in the rate of profit and the consequent intensification of competition. Thus for both Smith and Marx the intensification of competition is the result of the falling rate of profit rather than its cause.

The remainder of the paper is structured as follows: Section 2 reviews the major interpretation of the argument from Ricardo and Marx as well as from major historians of economic thought. Section 3 attempts to reconstruct Smith's argument, which is scattered throughout the *Wealth of Nations*. Section 4 presents some indirect empirical evidence based on the evolution of interest rates on annuities lending support to Smith's insights of the falling rate of profit. Finally, section 5 makes some concluding remarks.

## **2. Literature Review**

According to Meek (1967, p. 18) Smith was the first economist that realized the significance of the rate of profit as the regulator of the rhythm of economic growth of the capitalist system. On the other hand, Tucker (1960, p. 60) claims that Smith's analysis of the falling tendency of the rate of profit is much more detailed than usually thought and presented not only in the texts of the history of economic thought but also in the writings of major economists of the past. The usual presentation is based on the following often-cited quotation from the *Wealth of Nations*:

The increase of stock, which raises wages, tends to lower profit. When the stocks of many rich merchants are turned into the same trade, their mutual competition naturally tends to lower its profit and when there is a like increase of stock in all the different trades carried on in the same society, competition must produce the same effect in them all. (WN, p. 87)

On the basis of the above quotation the argument is that competition tends to reduce the rate of profit in two ways: first in the product market which compels each producer to "sell what he deals in somewhat cheaper" and second, in the labour market, where competition among producers raises the wages paid to the labourers, and, therefore,

profits are diminished “as it were, at both ends” (WN, p.336). In other words, the “increase of stock” increases competition between sellers in the product market, where buyers benefit from lower prices, and in the resource market, where resource suppliers, mainly workers benefit from higher wages. As a consequence, the rate of profit is expected to fall.

This view of the falling rate of profit in Smith has been formulated by Ricardo (1821) who by simply citing the above quotation attributed to Smith the argument that the intensification of competition is responsible for the falling rate of profit. Ricardo notes that Smith “uniformly ascribes the fall of profits to accumulation of capital, and to the competition which will result from it” (1821, p. 289). Thus, Ricardo could criticize Smith for his inconsistencies because competition can only bring about an equalization of profit rates across industries and not necessarily a fall in the general rate of profit. As a consequence, the task of explaining the fall in the general rate of profit was an open question to be investigated. Ricardo showed that by assuming that workers are being paid their subsistence wage consisting of a given bundle of goods, as the process of capital accumulation proceeds it follows that wages increase above subsistence, which in turn lead to an increase in population and the labour supply and so the demand for food rises and this entails pressure on agricultural production to expand to less and less fertile parcels of land. Diminishing returns set in and therefore increase the cost of production and the prices of agricultural products. Thus, in order for workers to purchase the same, but more costly, bundle of goods they need to be paid higher wages, that is, real wages increase for capitalists and so their rate of profit diminishes. The higher wages do not imply that workers’ standard of living improves; to the contrary as workers consume

approximately the same bundle of goods their higher wage only maintains at best their standard of living.<sup>1</sup>

Ricardo's interpretation of Smith was so convincing that even Marx attributed the fall in the rate of profit in Smith to excessive competition.<sup>2</sup> Marx notes:

Smith explained the fall of the rate of profit, as capital grows, by the competition among capitals, to which Ricardo replied that competition can indeed reduce profits in the various branches of business to an average level, can equalize the rate, but cannot depress this average rate itself. (*Grundrisse*, p. 751)

Also, in the *Theories of Surplus Value* Marx clearly approves Ricardo's interpretation by noting:

Thus Adam Smith says; as a result of the growing accumulation of capital, and the growing competition between capitals which accompanies it. Ricardo retorts; competition can level out profits in the different spheres of production but it cannot lower the general rate of profit. (TSV, Vol. II, p.438)

The writings of Ricardo and Marx essentially have established the view that in Smith, excessive competition is the root cause of the falling rate of profit and to this view subscribe the majority of historians of economic thought and all the widely used textbooks (Blaug, 2005; Landreth and Colander, 1995; Niehans, 1990, *inter alia*). Of course, there are a few exceptions among them we distinguish initially Hollander (1973) and latter Eltis (1984 and 1989), whereas the view expounded by Verdera (1992) is closer to our own. Among these three authors, Hollander (1973, pp. 179-180) argues that rising real wages are passed on to higher prices and are paid by (rich) consumers. This view is

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<sup>1</sup> For a detailed exposition of Ricardo's as well as Marx's views of the falling rate of profit (Tsoulfidis, 2010, chs. 4 and 5).

<sup>2</sup> Marx, in his early writings, seems to accept the excessive competition argument as the root cause of the falling rate of profit. He notes: "A large capital [...] accumulates more quickly than a small capital [...]. With the increase of capitals the profit on the capitals diminish, because of competition" (Marx, 1959, p.44).

clearly expounded by Smith in his chapter on “taxes upon the wages of labour” (WN, p.815), where he holds that the incidence of this taxation is passed on to (rich) consumers in higher prices and landlords in falling rents. Hollander, in other words claims that in Smith, unlike Ricardo, there is no trade off between wages and profits and that “increased competition” is viewed by Smith as lack of investment opportunities in the stationary economy. Eltis, on the other hand, presents a pretty sophisticated argument which seems to “square the circle” for he combines both the increase in stock as the root cause of the falling rate of profit together with the intensification in competition in one sector of the economy that drags down the profit rates of the other sectors. More specifically, according to Eltis (1989) as the capitalization of production in the agricultural sector increases, productivity remains, more or less, the same and this because in agriculture the division of labour is much more difficult to apply (WN, p.234)<sup>3</sup>. Furthermore, the demand for labour increases leading to rapidly growing wages, which past a point cease to increase and the resulting surplus is split between profits and rents in given proportions. As a consequence, the profit share to income remains approximately constant and given the rising trend in capital - output ratio (because of improvements of soil, fertilization, use of oxen and the like), it follows that the rate of profit in agriculture falls below those of manufacturing and commerce. Hence, we have the intensification of competition; inasmuch as, the falling profitability in agriculture leads to an outflow of capital towards the more profitable manufacturing and commerce. This inflow of capital in these two sectors results in the equalization of their rates of profit towards the

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<sup>3</sup> With the exceptions of vegetables as by-products of improved methods of production, and hides as long as the number for cattle increases faster than the demand for hides Adam Smith expects constant returns to scale in the production of corn and diminishing returns of the remainder of agriculture and mining (WN, p.234). On the other hand in industry, Smith expects increasing returns to scale as long as there is increasing application of the division of labour.

agricultural lower rate of profit. In Eltis's analysis remains unclear the reason why the capitalists in agriculture continue to invest, and, therefore, increase the stock of their capital, if by doing so they undercut their rate of profit below the economy-wide average. Moreover, economic historians (*cf.*, Clark, 1940 and A. Fisher, 1941 working independent of each other) have shown that capital increases the productivity of agriculture. In particular, in the upward stage of the business cycle the growth in labour productivity in agriculture or in general the primary sector of the economy exceeds that of the secondary sector (manufacturing), while services or more generally the tertiary sector of the economy lags behind the manufacturing sector.

### **3. Adam Smith on the Falling Rate of Profit**

Smith's argument can be reconstructed starting from the motives of people which compel them to accumulate. Smith attributes to people some invariant features such as the "wish to better their condition" (WN, p.325) this is a very general motive characterizing human behaviour in all societies. For modern societies, however, Smith becomes much more specific by attributing to people the incessant desire to make profits as a purpose in itself.

He notes:

The consideration of his own private profit is the sole motive which determines the owner of any capital to employ it either in agriculture, in manufactures, or in some particular branch of the retail trade. (WN, p. 355)

The profit-making motive is what drives capitalists to increase the division of labour as the means to increase productivity of labour, which in turn reduces the unit cost and the selling price of the product. The expansion of demand that follows necessitates even further division of labour, which becomes possible through the introduction of fixed



capital; thereby leading to another round of division of labour, rising productivity, falling unit costs and prices with the difference that the economy is growing and mechanization, that is, the capital-output ratio increases. It is important to stress that the invention of various machines that form the newly introduced fixed capital is a direct consequence of the (sub)division and routinization of the labour process, which makes possible the substitution of labour for capital.<sup>4</sup> Hence, in the growth course of a country, we expect an increase in the total capital, writes Smith:

[...] When we compare, therefore, the state of a nation at two different periods, and find, that the annual produce of its land and labour is evidently greater at the latter than at the former, [...] we may be assured that its capital must have increased during the interval between those two periods,[...]. (WN, p. 326)

The increase in total capital has two dimensions (a) fixed capital and (b) circulating capital. As for the growth in fixed capital, although in the eighteenth century it is reasonable to assume that is relatively low, compared to later times; nevertheless, in the *Wealth of Nations* the introduction of fixed capital is of paramount importance for the increase in the productivity of labour via the division of labour. Smith notes:

The quantity of materials which the same number of people can work up, increases in a great proportion as labour comes to be more and more subdivided and as the operations of each workman are gradually reduced to a greater degree of simplicity, a variety of new machines come to be invented for facilitating and abridging those operations. As the division of labour advances, therefore, in order to give constant employment to an equal number of workmen, an equal stock of provisions, and a greater stock of materials and tools than what would have been necessary in a ruder state of things, must be accumulated beforehand. (WN, p.260)

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<sup>4</sup> According to Smith the introduction of capital overall creates more jobs than destroys (Heilbroner, 1975, p. 27).

On the other hand, the circulating capital naturally tends to increase following the rising tendency of the fixed capital. By circulating capital, classical economists, such as Smith and Ricardo, mean raw materials and mainly wages. Thus Smith points out:

No fixed capital can yield any revenue but by means of a circulating capital. The most useful machines and instruments of trade will produce nothing without the circulating capital which affords the materials they are employed upon, and the maintenance of the workmen who employ them. (WN, p. 267)

Having identified the role of fixed capital, Smith points out that technical change may be labour saving but in no way displaces labour but rather the introduction of fixed capital is to “facilitate and abridge labour” thus by means of fixed capital “an equal circulating capital [mainly wages] can afford a much greater revenue to its employer” (WN, p.265) through the increase of employment. Thus for Smith there is a positive relationship between profits and employment but this does not mean that the increase of all employment increases the profits of the employer; only productive labour in the Smithian sense (WN, p.322) increases profits as opposed to unproductive labour which diminishes the investible product, thereby lessens the potential accumulation of capital and economic growth.

It is important to stress at this point that for Smith profits are not created by fixed capital but by labour and so we dispense with any idea of marginal productivity theory of income distribution. Clearly, for Smith only productive labour is the source of profits, as this can be judged from the following quotation, which anticipates Marx’s notion of surplus-value. Writes Smith:

[T]he labourers and labouring cattle, therefore, employed in agriculture, not only occasion, like the workmen in manufactures, the reproduction of a value equal to their own consumption, and of

the capital which employs them, together with its owner profits [...]. (WN, p.344)

Furthermore, the increase in capital stock, Smith argues, increases the demand for labour and so wages rise. The rising wages, however, would permit labourers to rear a great number of children, and thus to increase population and the labour supply reducing the wage to its subsistence level. For Adam Smith, economic growth is intrinsically connected to the increase of productive labour and so is the rising productivity of labour which can be achieved through the mechanization of production.

### **3. The Evolution of the Capital - Output Ratio and its Effects on Profits**

The continuous increase in the stock of capital will require an increasing share of output to be devoted in the replacement of capital. This share is directly related (in both absolute and relative terms) to the wealth of a nation:

That part of the annual produce, therefore, which, as soon as it comes either from the ground, or from the hands of the productive labourers, is destined for replacing a capital, is not only much greater in rich than in poor countries, but bears a much greater proportion to that which is immediately destined for constituting a revenue either as rent or as profit. (WN, pp.318-319)

As a consequence, for Adam Smith the increase in the capital-output ratio will lead to a profit squeeze. In the same chapter but a few pages before, Smith notes:

Of the produce of a great manufactory, in the same manner, one part, and that always the largest, replaces the capital of the undertaker of the work; the other pays his profit [...]. (WN, p.316)

Eventually, the economy will reach the stationary state which in Smith is identified with the stagnation of the mass of profits. Stagnant mass of profits suggests that any

further capital accumulation is pointless since the profit picture does not change for the investors as a whole. Smith writes:

As capitals increase in any country, the profits which can be made by employing them necessarily diminish. It becomes gradually more and more difficult to find within the country a profitable method of employing any new capital. (WN, p.336)

This is equivalent to saying that any new investment is unlikely to secure (on an average) positive profits, and therefore we reach a point where there are no new investments and so output and employment do not change. Thus the fall in profits, and, at the same time, the lack of opportunities to direct capital to more profitable activities is what actually stimulates competition between capitals, rather than the other way around.

Smith notes:

There arises in consequence a competition between different capitals, the owner of one endeavouring to get possession of that employment which is occupied by another. But upon most occasions he can hope to justle that other out of this employment, by no other means but by dealing upon more reasonable terms. (WN, p.336)

Consequently, the rising capital stock leads to a rising capital-output ratio which with a given or slowly rising profit share is the principle cause of the falling rate of profit. The intensification of competition will be the result of a situation where capitals cannot be used in a profitable manner anymore. In other words, the stagnation of profits will be the result of over accumulation, a point of view akin to Marx's. Adam Smith expected the intensification of competition to be expanded in the labour market:

The demand for productive labour, by the increase of the funds which are destined for maintaining it, grows every day greater and greater. Labourers easily find employment, but the owners of capital find it difficult to get labourers to employ. Their competition raises the wages of labour, and sinks the profits of stocks. (WN, p.336)

For Adam Smith, the level of wages does not depend on the competition of enterprises in the labour market. The fundamental reason is “the continual accumulation that promotes the division of labour” (WN, pp.68-69). As the quantities of raw materials and fixed capital increase then it follows that the demand for labour will increase. It is important to point out that as long as capital grows at a rate equal to the growth of employment then real wages remain constant. If, however, the growth rate of capital falls short of that of employment, real wages rise. For Adam Smith the average level of real wages, measured in corn, depends on the prosperity of the country, which in turn depends on the degree of accumulation (WN, pp.68-69).

In the stationary state one would expect that the low rate of profit is accompanied by high wages but this is not the case because on Smith’s claims both the rate of profit and wage are low:

In a country which had acquired that full complement of riches which the nature of its soil and climate, and its situation with respect to other countries, allowed it to acquire; which could, therefore, advance no further, and which was not going backwards, both the wages of labour and the profits of stock would probably be very low. (WN, p.94)

However, there are two countertendencies which may prevent the fall in the rate of profit, the discovery of new territories and new trades. Smith nevertheless argued that these countertendencies are only ephemeral interruptions of the falling tendency. One such example is the navigation laws of 1651 and 1660 that gave England the trade monopoly with her colonies. Smith noted:

If since the establishment of the act of navigation, the ordinary rate of British Profit has fallen considerably, as it certainly has, it must have fallen still lower, had not the monopoly established by the act contributed to keep it up. (WN, p.565)

Adam Smith becomes explicit in the following passage:

The acquisition of new territory, or of new branches of trade, may sometimes raise the profits of stock, and with them the interest of money, even in a country which is fast advancing in the acquisition of riches [...] Part of what had before been employed in other trades, is necessarily withdrawn from them, and turned into some of the new and more profitable ones. In all those old trades, therefore, the competition comes to be less than before. (WN, p.93)

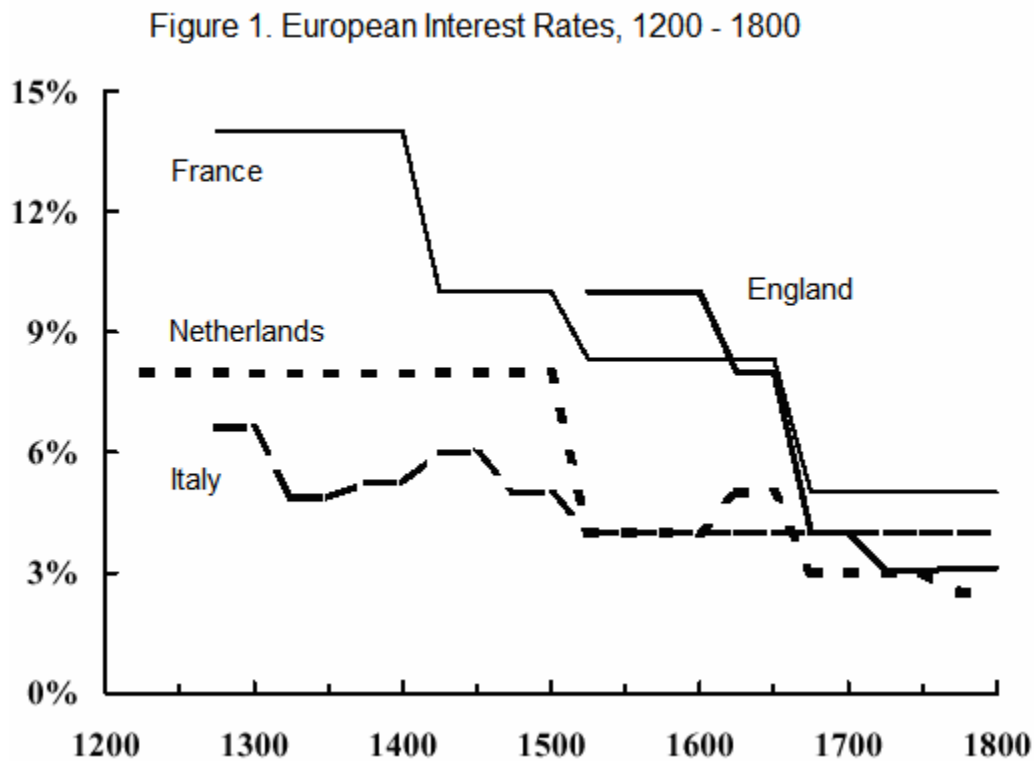
Smith pointed out that the stationary economy is not for the present circumstances and until society reaches the stationary level it will take quite a long time. In fact, such a state is not attainable in the foreseeable future (WN, p. 95).

#### **4. Some Indirect Evidence of the Secular Movement of the Rate of Profit**

What happens in reality with regard to the evolution of the profit rate? During a period of time, with no national income accounts data, Smith argued that the rate of profit is subject to so many fluctuations which make it difficult for someone to estimate it over time. Nevertheless, he claimed that a crude but satisfactory approximation of the rate of profit would be the rate of interest. Smith based his view on the following argument:

But though it may be impossible to determine with any degree of precision, what are or were the average profits of stock, either in the present, or in ancient times, some notion may be formed of them from the interest of money. It may be laid down as a maxim that wherever a great deal can be made of the use of money, a great deal will commonly be given for the use of it; and that wherever little can be made by it, less will commonly be given for it. According, therefore, as the usual market rate of interest varies in any country, we may be assured that the ordinary profits of stock must vary with it, must sink as it sinks, and rise as it rises. The progress of interest, therefore, may lead us to form some notion of the progress of profit. (WN, p.88)

Consequently, the rate of interest and the profit rate are correlated with each other and the long-term movement of the one is indicative of the movement of the other. According to Smith, the rate of profit must be approximately twice as high as the interest rate, which is charged on a low risk loan (WN, p.97). Thus, when Smith was interested in examining the extent to which his theory for the falling tendency of the rate of profit holds true or not, he looked in the data on the rate of interest. In Figure 1 below, we portray the evolution of the interest rate (or yield) of consol bonds of England along with similar interest rates for France, Netherlands and Italy. Hence, as these interest rates refer to annuities they take into account inflation and in this sense they are real interest rates.<sup>5</sup>



<sup>5</sup> Source of Figure 1, W.J. Bernstein (2002) and Homer and Sylla (2005).

There is no doubt that Adam Smith was cognizant if not for the details but certainly for the general tendencies of the interest rates on the basis of which he passed judgment on the secularly falling trend in the rate of profit. As is well known the unstable societies of medieval Europe experienced very high interest rates, which gradually fell as the Dark Ages gave way to the Renaissance and Enlightenment, that is, during Adam Smith's period of time. The following passage from the *Wealth of Nations* is quite revealing of Smith's profound understanding of the long-term movement of interest rates and by extension the economy-wide profit rate in his time,

In the opulent countries of Europe, great capitals are at present employed in trade and manufactures. In the ancient state, the little trade [...] and coarse manufactures [...] required but very small capitals. These, however, must have yielded very large profits. The rate of interest was no where less than ten per cent. and their profits must have been sufficient to afford this great interest. At present the rate of interest [...] is no where higher than six per cent. and in some of the most improved it is so low as four, three, and two per cent. Though that part of the revenue of the inhabitants which is derived from the profits of stock is always much greater in rich than in poor countries, it is because the stock is much greater: in proportion to the stock the profits are generally much less. (WN, p 318)

From the above we can tell that Smith was not only interested in purely theoretical developments but he also managed to combine them with the observable reality of his time and use it to strengthen his theoretical insights.

## **5. Summary and Conclusions**

The main argument of this paper has been that Smith's theory of the falling rate of profit has been largely misunderstood as the majority of commentators of his work attribute the fall in the rate of profit to excessive competition. The textual evidence suggests that



Smith begins with the profit motive which drives capitalist to introduce capital intensive techniques which enable the further division of labour and therefore increase productivity and reduce unit costs. The result is that in these efforts, capitalists continually increase the amount of surplus that is set aside for depreciation, thereby reducing the relative share of profits. Consequently, the rising capital - output ratio leads to a falling rate of profit, despite its countertendencies. As the rate of profit falls, competition intensifies reaching to a point where there are no more profitable investment opportunities thereby rendering competition among capitals even more fierce. With the progress of time and as net investment approximates zero, the economy reaches its stationary (or steady) state, where the economy reproduces itself at best with no growth in output or employment. Under these circumstances Smith argues that both the rate of profit and the real wage are low. The real wage is low simply because in the stationary state of the economy the demand for labour does not increase. But at this point it is enough to note that Smith's theory of the falling rate of profit predicted that the growth process of society is terminated in its stationary (or steady) state, the actual attainment of such a state was postponed in some far distant future time.

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