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Revisiting profit persistence and the stock market in Japan

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ABSTRACT

This paper tests the classical hypothesis of inter-industry profit rate's proclivity to gravitate towards the economy's average profit rate. In so doing, individual as well as panel unit root tests have been applied on a dataset consisting of 52 Japanese manufacturing industries spanning the period 1974–2008. The evidence generated is rather mixed in a sense that the inter-industry profit rates tendency to gravitate towards the economy's average rate of profit depends on the idiosyncratic characteristics of each industry. However, the rate of profit of regulating capitals, as this is reflected in the incremental rate of profit, displays gravitational behaviour around the economy-wide incremental rate of profit, the movement of which is found to be linked to the rate of return in the stock market. These results lend support to those who contend that the classical theory of competition is an area where further research is warranted.

1. Introduction

In recent years a great number of research papers have emerged looking into the relationship between inter-industry/inter-firm profit rates and the economy's weighted average rate of profit (AROP). These studies invariably test an autoregressive process of first, and rarely a second or higher-order of each industry's rate of profit deviations from the economy's AROP. Even though the majority of these studies point towards gravitation to the economy's AROP, there are some others suggesting that the underlying gravitation is towards some profit rate persistently above or below the economy's AROP. This persistence is usually attributed to the idiosyncratic characteristics of industries/firms resulting from a possible presence of some degree of monopoly power, barriers to entry, government regulation of industry, and other impediments to competition.

In this paper, we argue that the AROP is the average of all actively participating firms in the industry and not the AROP of a group of representative firms of an industry, which become the hub of inflows or outflows of investment. Consequently, the negative results with respect to

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the gravitation of industries' profit rates towards the economy's AROP may be attributed to the selection of an inappropriate index of profitability. To overcome this problem we use a more representative index of an industry's profitability, i.e. the incremental rate of profit (IROP). In this context, we use annual time series of 52 Japanese manufacturing industries spanning the period 1974–2008. An additional novel feature of this paper is that the data analysis suggests that the evolution of the economy's IROP is closely linked to the real rate of return as proxied by the Nikkei stock market index.

The remainder of the paper is organized as follows: Section 2 reviews the literature as well as sets out the main question in relation to the conceptual framework. Section 3 focuses on the two alternative definitions of the rate of profit as well as the various models that have been hitherto used. Section 4 touches on the empirical aspects of this study where the hypothesis of equalization of the profit rates using the two alternative definitions of profitability is tested as well as discusses the generated results. Section 5 tests the linkage of IROP with the returns in the stock market as these are reflected in the Nikkei index, whilst Section 6 provides some concluding remarks.

2. Related literature

The question of long-run movement of the inter-industry profit rates is as old as economic theory. Drawing on insights from the works of Adam Smith, David Ricardo and John S. Mill, we find that they all argued that profit rates tend to be equal across industries over a sufficiently long time period. These insights continue in the writings of Karl Marx and to a certain extent the Austrian (old or new) economists. We call this view classical even though this characterization would certainly cause some of the modern classical economists to disagree whilst Marxist or Austrian economists might even frown upon. The term classical in this context is used more as a common perspective shared by some of the aforementioned economists and less than a common and fully developed and generally accepted model.

The classical approach, irrespective of any limitations regarding its theoretical framework, stands in stark contrast to the views of neoclassical economists on the long-run movement of the inter-industry profit rates. The main difference is that in the conceptual lens of the classical approach the tendential equalization of the profit rates is understood to work on an average and over the long-run; that is to say, at any single moment the inter-industry profit rates remain in the vicinity of the average and only with the passage of long time, a period of "fat and lean years" the inter-industry profit rates tend to equalize. Differences between an industry's profit rate from the average one lead to the acceleration or deceleration of flows of capital, thereby, eliminating profit rate differentials. These flows of capital are further facilitated with the operation of the credit system. Verbal descriptions of this process can be found mainly in Smith (1776, ch. 10), Ricardo (1951, pp. 88–89), Mill (1848), but also in Marx (1894, ch. X) and Schumpeter (1942). The turbulent equalization process can be visualized in the movement of hypothetical profit rates

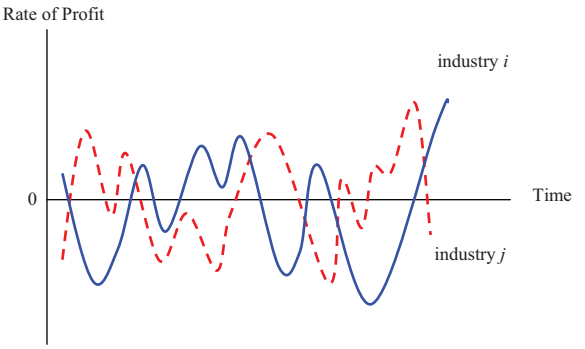

Fig. 1. Classical profit rate deviations from the economy-wide average.

deviations of industries i and j from the economy-wide AROP over time portrayed in Fig. 1 below.

We observe that the industries' profit rates fluctuate around the economy's AROP and only over a sufficiently long period of time, positive and negative deviations tend to neutralize each other indicating their dynamic and tumultuous equalization. In statistical terms the equalization of rates of profit is a mean reverting process with a stationary standard deviation of each industry's profit rate deviation series.

As far as the neoclassical perception of the inter-industry equalization of profit rates is concerned, we know that the mechanism that restores equilibrium is almost akin to that suggested by classical economists. The idea is that industries' profit rate deviations from the economy's AROP are caused by shocks (in preferences, technology, costs and the like), which sooner or later fade away, unless there are further shocks or barriers to free mobility of resources preventing the attainment of the equilibrium position; a case in point is industry j in Fig. 2. More sophisticated neoclassical models, for instance the cobweb model, arrive at convergence through dissipative fluctuations as indicated in the fluctuating time path of the rate of profit of industry k in Fig. 2. Most interesting is Marshall's (1890) view of moving centres of gravity in the event of an internally or externally generated shock.[3]

If for some reason convergence or gravitation occurs at a profit rate higher than the average (industry i in Fig. 2) and stays there, then such an occurrence can be perceived as an indication of monopoly power exerted by the industry on market forces. The same rationale holds in the classical analysis in so far as the presence of monopoly is identified with a rate of profit persistently higher than the average. Despite the fact that the Austrian theory does not consider the economy to be invariably balancing in some state of equilibrium – emphasizing the process-nature of competition – it nevertheless, regards the notion of a transition to equilibrium as a dynamic process (Mueller, 1986, p. 4). Austrians furthermore examine the extent to

[3] "For indeed the demand and supply schedules do not in practice remain unchanged for a long time together, but are constantly being changed; and every change in them alters the equilibrium amount and the equilibrium price, and thus gives new positions to the centres about which the amount and the price tend to oscillate" (Marshall, 1890, pp. 346–347).