THEORETICAL ANALYSIS OF THE DIFFERENCE BETWEEN THE TRADITIONAL AND THE ANNUITY STREAM PRINCIPLES APPLIED TO INVENTORY EVALUATION

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Abstract

This paper compares consequences from a theoretical standpoint as to capital costs derived from two inventory evaluation principles. On the one hand, according to the traditional principle, physical inventory is valued at cost-incurred-to-date and the capital costs are then estimated as an interest charge on this average value. On the other hand, according to the annuity stream principle, the capital costs of inventory are obtained as the interest-dependent part of the annuity stream derived from the cash flow associated with the
physical inventory build-up. Whereas the traditional approach attempts at approximating traditional accounting procedures, the annuity stream principle is in agreement with financial theory and it is therefore considered the superior of the two, since it implies that a coherent methodology is applied to the evaluation of capital used in any type of investment, whether it be inventory or other working capital, plant, equipment, or any other type of material or immaterial asset. The present inquiry highlights some theoretical issues concerning the differences between the two evaluation principles. It is shown how the first-order difference in capital costs depends on the fluctuation of profit around its long-run average.

1. Introduction

The valuation principle to be analyzed in this paper takes as its basis the idea that the ultimate consequences of all economic activities in a manufacturing firm are in the form of payments or payment streams. In principle this idea applies to actions taken on strategic and tactical as well as on operational decision levels in a firm. The crucial role that is played by payments of a firm is emphasized by the fact that one of the typical measures taken when facing the acute risk of bankruptcy is the discontinuation of payments. From a theoretical point of view, the valuation of firms and of assets held by firms, i.e., of the firm's activities, should also be based on payments.

We accentuate the difference between payments, on the one