ELSEVIER

Journal of Economics and Business 57 (2005) 165–185

Journal of Economics & Business

On the incidence of deferred taxes, intangibles and non-linearities in the relationship between Tobin's *Q* and ROI

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Received 31 July 2003; received in revised form 27 July 2004; accepted 22 September 2004

Abstract

This paper examines the relationship between the firm's accounting return on investment (ROI) and its economic return measured by Tobin's *q* (*Q*), given the conflicting evidence regarding the efficacy of ROI as an informational measure of the firm's underlying economic fundamentals. As in Landsman and Shapiro [Landsman, W. R., & Shapiro, A. C. (1995). Tobin's *Q* and the relation between accounting ROI and economic return. *Journal of Accounting, Auditing and Finance*, *10*(Winter), 103–120], the information content of ROI as an explanatory variable for *Q* is conditioned upon the level of investment in intangibles such as research and development or exploration costs.

Four new elements are introduced: the incidence of deferred taxes on this relationship, either directly or through their impact on ROI; the potential non-linear nature of the ROI/*Q* relationship; the extension of the intangibles concept of Landsman and Shapiro (1995) to cover also the firm's human capital asset and agency components; an examination of the separate effect on ROI of the factors hypothesized to explain *Q*. Our results strongly support the use of ROI as a good measure of economic performance.

JEL classification: G30; G19; M41

Keywords: Financial and tax accounting; Agency costs; Corporate finance

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0148-6195/$ – see front matter
doi:10.1016/j.jeconbus.2004.09.003

1. Introduction

A number of studies have examined the relationship between accounting measures of business performance and firm-specific measures of economic performance (e.g., Chen & Lee, 1995; Chen & Steiner, 2000; Landsman & Shapiro, 1995). Of particular importance to the purposes of this paper is the study by Landsman and Shapiro (1995), which examines the association between the accounting return on investment (ROI), defined as the ratio of net income for a given year to the value of the previous year's total assets, and the Tobin's q ratio (henceforth, Q) showing the market value of the firm in relation to the market value of its assets. Their study seeks to assess the validity of ROI as a measure of business performance; given the central role it plays in a variety of economic venues including anti-trust cases, corporate restructuring decisions and performance measurement of business firms in general. The authors document evidence of high and statistically significant correlations between their measures of ROI and Q, and since the latter reflects investor expectations of a corporation's future economic returns, the authors conclude that their results strongly suggest that accounting data-based measures contain economically meaningful information.

The purpose of this paper is to revisit the relationship, if any, between the firm's accounting ROI and its economic return measured by Q, given the conflicting evidence regarding the efficacy of ROI as a measure of the firm's underlying economic fundamentals. As in Landsman and Shapiro (1995), the information content of ROI as an explanatory variable for Q is conditioned upon the level of investment in intangibles. Justification for such an approach stems from the considerable evidence in the accounting literature that research and development (R&D) or exploration and development costs are not "expensed," but rather capitalized by the market (e.g., Landsman & Shapiro, 1995). We introduce four new elements in the current study: first, the impact of deferred taxes on this relationship, either directly or through their effect on the computation of ROI, the rationale being the evidence that deferred taxes affect not only current earnings, but also contain information to predict future earnings (Beaver & Dukes, 1972); second, the potential non-linear nature of the ROI/Q relationship, which may be due to differences associated with the market's reaction to positive or negative ROIs; third, the extension of the intangibles concept of Landsman and Shapiro (1995) to cover also the firm's human asset and agency components by introducing a measure of stock options given to managers, employees and bondholders; fourth, the separate effect on ROI of other independent variables (i.e., deferred tax and intangibles) hypothesized to explain Q. This aspect has not been addressed in previous studies. In this manner, we extricate a measure of ROI which is independent of the separate effects of the other independent variables. Tests based on such a measure are likely to indicate stronger evidence of a relationship between ROI and Q.

Overall, the results suggest that our measure of ROI, devoid of the separate effects of intangibles and of deferred tax, does provide information for explaining our Q measure. These results strongly support the use of ROI as a good measure of economic performance; furthermore, our results provide evidence of non-linearity in the relationship between ROI and Q. Deferred taxes are found to have an independent impact on ROI and, in some instances, on Q. Our measures of agency cost reduction and the firm's intangible assets do not significantly explain Q.