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CLEAN SURPLUS ACCOUNTING THEORY IN PRACTICE

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Abstract

The clean surplus accounting method provides elements of a forecasting model that yields price as a function of earnings, expected returns, and change in book value. This study therefore seeks to empirically analyse the financial accounting theory. It specifically analyses, Ohlson's Clean Surplus Theory. The study therefore concludes that, financial accounting theory is used to estimate the value of a company's shares (instead of discounted dividend/cash flow approaches). The secondary use is to estimate the cost of capital, as an alternative to the CAPM as an example. The clean surplus is calculated by not including transactions with shareholders (such as dividends, share repurchases r share offerings) when calculating returns; whereas standard accounting for financial statements requires that the change in book value equal earnings minus dividends (net of capital changes).

Keywords: Clean Surplus Accounting Theory, Forecasting model, Firm Value and Financial Accounting

INTRODUCTION

Ohlson's Clean Surplus Theory

The clean surplus concept states that equity-related gains and losses are not to be included in the income statement. Under this approach, changes in the fair value of assets and liabilities are included in earnings. Accounting measurement rules and standards require certain adjustments to be made over several accounting periods in order that earnings provide an accurate picture

of events. Conservative Earnings disclosure to give a clean surplus position is assumed by Olhson, 1995 and Penman (1998) in their theoretical papers on Earnings and valuation. Errors in the practice of accrual accounting are inevitable due to the nature of the data used and the timely correction of errors is one of the most important elements in producing Earnings quality in the long-run (FAS, 154). The active investor is usually involved in monitoring and evaluating the intrinsic value or valuation of the company. On the other side, According to International Accounting Standard Board (1989), The primary aim of financial statements is to provide the stock market investors with accurate accounting information so that they can use it for decision-making in investment. The firm appreciation definition that connects these two sides is introduced by Ohlson (1995).

The fundamental question asked by Jegadeesh & Livnat (2006), Where the income (profits) is unforeseen; could be due to a rise in sales or decline in expenditure, or a combination of the two. In this respect will the stock price reaction vary if an unforeseen rise in income was due instead of a reduction in expenditure, or vice versa? Accordingly, Jegadeesh & Livnat (2006) examine the incremental information conveyed by revenues reported during preliminary earnings announcements. The study of the knowledge quality of income is driven by many factors. If revenues which are certainly income minus aggregate expenditure are followed by surprises of similar magnitude, then benefit surprises are guided by growth in revenue rather than a fall in expenditure. Jegadeesh & Livnat (2006) affirm that they anticipate a different level of persistent growth in profit, driven by growth in revenue compared to revenue driven by reduction in expense. The results show that, if these "surprises" are due to higher sales, the market tends to react more to unforgettable income. These findings generally reflect those generated by Ertimur, Livnat and Martikainen, who found, after controlling the unexpected earning notices, that market prices respond significantly to unexpected increases in earnings announcements.

In order to achieve a logically right intrinsic value which would then be compared with the current market price, conventional stock valuation models will discount potential dividends expecting to. However, their work suggests that security rates will be calculated by book value and discounts on potential abnormal income by Ohlson (1995) and by Feltham & Ohlson (1995). The advantages of this specification are that special emphasis is given to (a) Book value, thus avoiding any economic hypotheses about future cash flows, and (b) The treatment of investments.

Previous empirical studies find that book value and discounted future abnormal earnings have an important role to play in the determination of equity prices (see for example, Bernard (1995), Penman and Sougiannis (1998), Lee and Swaminathan (1998). Ohlson (1995) and

Feltham & Ohlson (1995) provide an appropriate point of departure for nearly any empirical work on this relation. It is only appoint of departure, nowhere near a complete structure, but then, getting off to the right start can be crucial.

A more recent emphasis on how well accounting information, such as annual earnings, can be collected by some capital market analysts is important for investors. It is another emphasis than the work previously addressed in the chapter. This alternative analysis approach aims not to decide whether profit / profit advertising provide investors with information, but to decide if income advertisements represent information already used in decision-making by investors. That is, this research views market prices, and hence returns, as leading accounting earnings (but not driving accounting earnings), while 'information content' research views earnings as leading (or driving) market returns. In other words, the analysis of the form "events review" which has already been discussed in this chapter examines how accounting affects or drives share prices, while other analysis divisions investigate a connection between accounting measures – such as income – and the share price, without establishing a causal relationship. All viewpoints are worthwhile as an annunciation of revenue can provide information on the activities of a business which investors were not previously aware of, as well as information already known (or anticipated) by investors from alternative tools. In considering why share prices convey information about future accounting earnings, Brown (1994,) argues: In a world of rational expectations, events that affect future distributions to shareholders will be reflected in today's share price, whereas accounting standards often require that the recognition of those events be deferred until some future accounting period.

To order to decide whether accounting information is important for investor decision-making, some analysts find share prices and returns ("returns' are changes to share prices plus dividends) as valuable indicators. Share prices are considered to be a measure of firm value per share and are comparable with the value of a company as seen in the balance sheet. In addition, equity returns are a benchmarking indicator of corporate performance (per equity), and can be contrasted with a separate measure of corporate performance — accounting income.

In addition, the usefulness of alternative accounting and forms of disclosure are equivalent in these market-based comparison points (share values and returns). This approach, for example, is used to address questions such as: does cash flow from a company's service compare better than profit measured by the accrual system? All these performance reports are contrasted with the performance index (share returns) of the market in order to evaluate the accounting metric that best represents the performance assessment of the business. This method of capital markets analysis, also referred to as value-reporting analysis, is often intended to be effective and acknowledges that financial statements are not the only source of

market information, such that safety rates represent information commonly available in a wide variety of outlets.

The study assumes in particular that investors and financial analysts actively pursue information related to the decision or recommendation of investments instead of waiting for a annual report to be released. In addition, this research field requires researchers to answer issues about financial position (balance sheet) behavior. Is disclosure of current asset values important to value, for example? In other words, was the current market value of the business correlated with or connected to it? Again, it is believed that the stock price estimates represent all the information accessible to the public, including but not limited to financial details.

This area of the research is based on a theoretical framework that is derived from the premise that market values and book (carrying) values are both measures of a firm's value (stock of wealth), even though book value measures wealth with some error. That is, at any point in time, the market value of a company's equity (*MV it)* is equal to the book (carrying) value of shareholders' equity (*BV it)* plus some error (*e it)*:

Thus;

$MV_{it} = BV_{it} + \varepsilon_{it}$ Equation 1

This error is due to the conservative nature of the accounting system. The carrying (book) value, as determined by the application of generally accepted accounting principles, is generally expected to be lower than market value for a number of reasons.

i. Not all assets and liabilities are recognised in the financial statements. For example, human resources, customer satisfaction levels and internally generated intangible assets including goodwill are not recognised in the statement of financial position, nor are their values amortized to the income statement (or as it has become known in recent years, the statement of comprehensive income). Nevertheless, while such assets are not recognised for accounting purposes, the expectation is that an efficient market will consider such assets when determining the appropriate market price for the firm's securities.
ii. Some assets are recognized at less than their full value. For example, non-current assets that have not been revalued to fair value and inventory are generally recorded at less than their expected sale prices.

The market value of the company's actions provides a index by which alternative metrics of the book value can be measured when markets are considered as effective. As will shortly be seen, a lot of work assesses the efficiency of the enforcement program on the basis that the accounting information relates to the actual market values of the company's shares or compares them to them.

If market value (based on the number of securities issued and their respective market values) and book value of a company are considered as 'stocks' of wealth, then changes in each of these measures of wealth between two points in time can be considered as 'flows' of wealth. Just as market and book measures of stocks of wealth equate, with error, market and book measures of flows of wealth (changes in value) can be equated, albeit with some degree of error (with *e* being the symbol used to refer to the error):

Change in market value (Δ*MV it)* is simply the difference in the market capitalization of a company between two points in time (*t* −1 to *t)*. On a 'per share' basis, it can be expressed as the change in the price of one share.

$\Delta MV\ it\ /\ No\ of\ shares = P_{it} - P_{it-1}$ Equation 3

Change in accounting book value (Δ*BV it)* is the difference between opening and closing total shareholders' equity. However, if we assume that there have been no additional capital contributions during the period, Δ*BV it* can also be measured by considering the change in retained earnings for the period. On a per share basis, this is measured as earnings per share (*E it)* less dividends paid per share (*D it*)

$\Delta MV\ it\ /\ No\ of\ shares = E_{it} - D_{it}$ Equation 4

This formula is based on the concept of 'clean surplus' earnings, which assumes that all increases in book value pass through the profit or loss. Clean surplus earnings does not always hold in practice, since items such as asset revaluation increments are credited directly to owners' equity (through a credit to revaluation surplus). However, the assumption of clean surplus is useful for simplifying our analysis. Substituting Equations 4 and 3 into Equation 2 gives:

$P_{it} - P_{it-1} = E_{it} - D_{it} + \varepsilon_{it}$ Equation 5

EARLY EMPIRICAL FINDINGS

Accounting information is used for a variety of purposes, such as determining management compensation, debt contracts and equity investment (Barth et al. 2001). Earnings quality has several meanings. Higher quality Earnings has a clearer relation to theories of firm value (Schipper & Vincent, 2003; SFAC No 1.). Earnings quality has a range of meanings which include: Predictors of long-term future sustainable earnings (Penman & Zhang, 2002; Dechow & Schrand, 2004; Dechow et al. 2010; Defond, 2010; Bhattacharya et al 2013 and Melumad and Nissim, 2009); smoothness of earnings; Franciset al., 2004; and Dechow and Schrand, 2004); predicting future earnings (Schipper and Vincent, 2003); Lack non-repetitive and special items (Dechow and Schrand, 2004; and McVay, 2006); conservative application of the relevant rules (Watts, 2003a 2003b), total accruals that are not associated with fundamentals (DeAngelo,

1986; Jones, 1991; Dechow et al., 1995; and Kothari et al., 2005). No unique definition of earnings quality exists (Ben-Hsien and Da-Hsien, 2004). Given this plurality of meaning in earnings quality, we are going to draw upon a notion of income: Hicksian income. This notion of Hicksian income becomes our theoretic baseline for the performance of a firm. Hicksian income corresponds to the amount that can be consumed (that is paid out in dividends) while leaving the firm as well off as at the beginning (Schipper & Vincent 2003 p. 97; Gisell et al 2005). We draw upon Ohlson (1995) to develop the principles for clean surplus accounting that gives a measure for Hicksian Income:

$y_{t-1}=y_t+d_t-x_t$

Where;

x_t is earnings for the period (t-1, t),

y_t is (net) book value at date t,

d_t is dividend for the period

The clean surplus model frames the times series behavior of accounting numbers (Ohslon 1995).

Claus & Thomas (2001), asserts that clean surplus income requires that all items which affect the book value of equity be included in earnings, excluding dividends and share repurchases/issues. The equations of clean surplus book value are as fallow;

Clean Surplus Book Value =

$$\mathrm{CEQ} + \sum_{0}^{t} [\Delta RE - (NI - DVC - DVP)]t$$

Clean surplus income is considered as the summary performance measure in firm valuation. (Bernard, 1995; Dechow, Hutton, & Sloan, 1999)

Clean Surplus and Other Comprehensive Income

'Another income is an old and unresolved problem in accounting and it should be known as a part of or separately from the income. Dirty surplus are listed as OCI products that are directly reported on retained profits. The dirty surplus is readily visible from the financial reports of Land'sman and coll. (2011), but is not really a dirty surplus resulting from the acknowledgment of equity purchases such as the exercise of an employee stock option at reasonable market value. Their results show that dirty surpluses and very dirty surpluses are unrelated to predicted abnormal incomes. Dirty surplus products flow into the retained income statement of the organization, which is not expressed Accounting information, not revealed in the firm's income and comprehensive income statements, could delay the ability of investors to extract these

information in a timely and precise manner (O'Hanlon & Pope, 1999). In this case, reported earnings are not good indicator of firm's performance.

All equity value shifts are calculated under clean surplus incomes excluding transactions with shareholders, e.g. dividend-related transactions (Ohlson, 1995; Cauwenberge et al., 2007). Things that have been disclosed under Other Comprehensive Revenue include: unrealized losses on debt, transaction and acting losses in the foreign currency reporting, benefit liability changes (FASB Topic 220). The key feature of these products is that they are unfulfilled, not a cash claim. Where it is done (via a sale or otherwise), changes must be made, gains and losses distributed by Other Comprehensive Income to Earnings. Therefore, elements that go through the equity section (recognized but not realized) are then reversed through the Income Statement (when realized in a subsequent period). An examination of transactions that do not satisfy this relation suggests that these violations occur ex post, and are not anticipated in analysts' earnings forecasts (e.g., Frankel and Lee (1998b).

We use theoretic book value (clean surplus) as baseline for firm performance. According to FASB Update (ASU) 2011-05, companies will no longer be permitted to present components of comprehensive income within the statement of stockholders' equity. Instead, companies will have only two remaining options for presenting components of comprehensive income: (1) presentation within a single, continuous statement of comprehensive income or (2) presentation in two separate but consecutive income statements. The Board's main reason for requiring this disclosure is that, without it, users of the financial statements "may not realize that certain items of net income may have already been included in a prior period's comprehensive income (ASU) 2011-05.

If the concepts reflected in accounting practices were enforced by public financial statements, there are small exceptions of the 'Recycling' of gains and losses by income. This means that recorded earnings must follow clean surplus concepts in the long-term. When our metric of book value, the Accumulated Other Comprehensive Profit, is increased in relation to the theoretical basis line (clean surplus) over time, the earnings level is poor.

Compustat data files from 1963 to 2014 are analysed and Cumulative Other Comprehensive income are evaluated with Clean Surplus (Book Value). AOCI indicates an accumulation of losses in Other Income over time, defined as the change in Retained Earnings other than reported Earnings and Dividends. This paper adopts an Error Correction Modeling based on the time series principles, adapting the method used by Clout and Willett (2016) to measure the closeness of Earnings and Other Income over time.

A measure Q is being computed to assess a firm's Earnings quality with respect to clean surplus accounting by seeing how close Q is to 1. The closer to 1 it is the higher its earnings

quality in this respect. The error correction modeling captures important dimensions (i) Short term coefficients expected equal to 0 and (ii) Long term coefficients expected equal to 1.

In this study we investigate how long companies take to correct non-clean surplus earnings. If a company or industry takes less time in correcting their errors in non-clean surplus earnings, the reported book value shows higher earnings quality. However, the longer the time, we accrue lower quality of reported earnings.

CLEAN SURPLUS IN PRACTICE

A linear model specifies the dynamics of information set that includes book value and abnormal earnings for operating activities. Model parameters represent *persistence* of abnormal earnings, *growth*, and *accounting conservatism.* The model is sufficiently simple to permit derivation of closed form expressions relating market value to accounting data and other information.

The model gives rise to three forms of experiments. The first package addresses interest as it concerns anticipated accounting data output. The second collection discusses precisely how meaning depends on contemporary accounting data realization. The third collection addresses asymptotic correlations between market value and profit and book prices, and the relationship between profit and the beginning of books.

The paper shows that the results rely on how restrictive the accounting is rather than objective in all three sets of studies. Furthermore, if and when the accounting is conservative, the absence / presence of growth in activities would be important.

This approach provides a fairly "fast and simple," which is (approximately) similar to a valuation based on discounted dividends or cash flows, in order to measure a business market value. The model provides an estimate of the shares of the company, which can be compared to its market value. Frankel & Lee (1998) showed that this ratio gives a strong foresight of returns from shares for the next 2–3 years.

For this situation, all profits and losses are offset by a sales declaration, and the fair value of the company is reflected in the balance sheet. The formula occurs when irregular earnings do not "persist." The investor will then directly from the balance sheet measure projected sales, as above. The income statement, however, has new information material if continuity is presumed, which increases the effect of the income statement on corporate interest, and less the process. (In financial economy and accounting the income response coefficient is equally greater consistency. (The income response coefficient in financial and accounting, or ERC, is the estimated relationship between equity returns and the unexpected portion of (i.e., new information in) companies' earnings announcements.

MEASUREMENT APPROACH

The measurement approach to financial reporting is an approach by which accountants undertake the responsibility to incorporate current values into the financial statements proper, provided this can be done with reasonable reliability. Auditor liability is pushing accountants to a conservative measurement approach. Greater Use of Current Values in the Financial Statements Proper Two versions of current value Exit price: SFAS 157 defines fair value as exit price Value-in-use: present value of future cash receipts or payments. The role of measurement approach is to increase decision usefulness over that of information approach.

Accountants Moving Towards a Measurement Approach

Securities markets may not be as efficient as previously believed. To a large extent, markets are not fully efficient. A measurement perspective is supported by Low R squared. Better measurement may increase accounting "market share" in explaining share price changes. Ohlsön's clean surplus theory is a theoretical framework supportive of a measurement approach. Auditor Liability Better measurement may reduce auditor liability when firms become financially distressed.

Ohlson's Clean Surplus Theory

It expresses value of firm in terms of accounting variables. Firm value = net assets ± present value of future abnormal earnings.

Formulae for Firm Value

Firm value = PV of expected future dividends. This is the fundamental determinant of firm value.
Firm value = PV of expected future cash flows. This being the traditional approach in accounting and finance.
Firm value = net assets ± PV of expected future abnormal earnings (goodwill).
This is the clean surplus approach. In principle, all these three formulae give same firm value.

Assumptions of Clean Surplus Theory

No arbitrage, dividend irrelevancy
These assumptions similar to ideal conditions Infinite time horizon (can be relaxed.
All gains and losses go through net income (i.e., "clean" surplus)

Unbiased v. Biased Accounting in Clean Surplus

Under unbiased accounting, the current value accounting for all assets and liabilities. Thus, unrecorded goodwill = zero. Biased accounting e.g., historical cost accounting, conservative accounting e.t.c, the unrecorded goodwill ≠ zero. In the relation to measurement approach, increased use of current value accounting puts more of firm value on balance sheet. There is less need to estimate unrecorded goodwill.

Using the Theory to Estimate Firm Value

The F&O model can be used to estimate the value of a firm's shares. This can then be compared to the actual market value, to indicate possible over- or undervaluation by the market, and to aid in investment decisions. Begin with balance sheet net assets as at date of valuation and add expected abnormal earnings (unrecorded goodwill).

Abnormal earnings: ability of firm to earn more than a normal return on capital.

Estimated firm value = net assets as at date of valuation ± expected PV of abnormal earnings

Use CAPME (Rjt) = Rf(1 - βj) + βjE(RMt)

E(Rjt) = cost of capital

E(RMt): suggest use market risk premium:3 to 4% in recent years E(RMt) = Rf + 3 or 4%

Choose a time horizon over which abnormal earnings expected to persist. Calculate ROE from financial statements for year of valuation. Calculate dividend payout ratio (k) Year-by-year over time horizon: Project book value, End-of-year BV = opening BV + (1-k) NI.

Estimate actual earnings Estimated Actual Earnings = ROE x Opening BV. Calculate expected normal earnings as Cost of Capital x Opening BV. Abnormal earnings = actual earnings - expected earnings.

Conclusion to Estimating Firm Value

Calculate PV of expected abnormal earnings at cost of capital over time horizon Estimated firm value = net assets ± PV of expected abnormal earnings NB: assumption that firm earns only normal return beyond chosen time horizon, i.e., ROE = E (Rj)Other assumptions are possible

Significance of Clean Surplus Theory to Accountants

It is a common way of calculating firm interest. Theoretically, clean excess accounts are sound and accounting variables are used. It can be simpler to use than the techniques of reduced cash flow. It comes with greater focus on net income prediction. It is necessary to calculate the expected abnormal income. Better still, it supports the rule of measurement.

The problem is, can a calculation methodology reduce auditor liability? There is a Liability auditor. When investors are subject to minimal scrutiny, the auditor may say that the financial results adjust their expected value correctly. However, actual values may be subject to management bias, as there is no market value available. But again, whenever an increase in asset value is achieved under conditional conservatism, the investor is expected to be averse. Hence, the auditor's response is conservative transparency, which is to minimize the chance of legal proceedings.

Summary

The exchange with shareholders, such as share repurchases or dividends, e.t.c is not the result of the adjustment in shares equity, which is seen on the return. Clean surplus accounting. The clean surplus accounting approach incorporates elements of a statistical model that sets prices based on adjustments in the book's size, profit and anticipated returns.

Overview

While calculating returns in clean surplus accounting, transactions with shareholders are not included. For current accounting of financial statements, it is required that the book value change equals earnings less dividends. The main use of the theory is to make an estimate of the value of the shares of a company. Its other use is to estimate the cost of capital as an alternative to CAPM. This theory is consistent with the perspective of measurement. The market value of a firm can be expressed as I/S and B/S components. The assumption of the theory is that there is ideal condition. A firm's market value is equal to the net value of the net assets of the firm plus present value of abnormal earnings of future. This helps in reading the value of the firm easily from the balance sheet.

Benefits

This method helps a company's market value to be measured relatively faster. The value of the cash flow formula and the decreased dividend would be the same. The F&O model offers an estimation of the company's shares and contrasts them with the market value. Research shows that this rate was strong at estimating share returns over the next two to three years. If the accountancy and continuity of irregular profits are not distorted, the balance sheet displays all the business values. The equal values used in the income statement do not produce irregular earnings. The balance sheet therefore shows fair values. A balance sheet that includes all of the information on it and nothing in net investment is given. The same idea is held for clean surplus theory, where there is no profit persistence.

CONCLUSION

The clean surplus accounting approach includes components of a projection model that generates prices according to income, projected returns and book-value adjustments. The main application of theory is to measure the worth of the shares of a company (instead of discounted dividend / cash flow approaches). For an alternative to the CAPM for example, the secondary usage is to measure the cost of capital. The "clean surplus" is calculated in that it is not included in the calculation of profits with shareholders (e.g. dividends, share repurchases or stock bids), but in standard financial statements, the change of book value requires equal returns, minus dividends, (net of capital changes).

Theory

The market value (MV) of the firm, and hence security returns, can be expressed in terms of balance sheet and income statement components, as below. This allows reading the firm's value directly from the balance sheet. The theory assumes ideal conditions. Here:

The market value of a firm = net book value of the firm's net assets + present value of future abnormal earnings (goodwill). The logic is:

1. Goodwill is calculated as the difference between actual earnings and expected earnings ("abnormal earnings").
    - ❖ Actual earnings are the "clean surplus" - this ensures that all gains or losses go through the income statement. The impact of fair values is recognized in earnings.
    - ❖ Expected earnings = opening shareholders' equity X the firm's cost of capital (similar to accretion of discount.)
2. Finally, convert book value to market value as above: firm value = net worth of the firm + calculated estimate of firm's goodwill.

Applicability

This approach provides a relatively "quick and dirty" method to calculate the market value of a firm - which should be (approximately) the same as a valuation based on discounted dividends or cash flows. The model provides one estimate of the firm's shares, useful for comparison to their market value. Research (Frankel & Lee 1998) shows that this ratio provides a good predictor of share returns for 2–3 years into the future.

The model is applicable when abnormal earnings do not "persist" (i.e. no goodwill); in this case all gains and losses go through the income statement and the firm's fair value appears on the balance sheet. The investor can then calculate expected earnings directly from the

balance sheet, as above. However, if persistence is assumed, the income statement will have emerging "information content": this increases the impact of the income statement on firm value, and the method is less applicable. (Greater persistence similarly translates to a greater Earnings response coefficient. In financial economics and accounting, the earnings response coefficient, or ERC, is the estimated relationship between equity returns and the unexpected portion of (i.e., new information in) companies' earnings announcements.

Recommendation for Further Study

The measure of the firm value has been done in terms of assets and sometimes equating leaving out the forecasted model on clean surplus. This therefore can be put to practice by more studies done globally to help clearly lay out the net effect of the firm value.

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