Theoretical Analysis for Cash Flow and Earnings

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Abstract
This study tries to provide a framework about selecting the best performance indicator for any company mainly in selecting between cash flow and earnings. Cash flow and accruals that lead to net income are considered as competing accounting performance measures. It also discusses other factors that have an impact of the selection criteria such as width of the performance window.

Keywords: Cash Flow, Earnings, Performance Assessment, JEL Classifications: G32, L25, M41

Introduction
The objective of this study is to provide a theoretical discussion and contribute to the debate in accounting literature regarding the best indicator for the company performance. Thus, evaluating cash flow and earnings as competing accounting performance measures will help in better understanding of each measure and the circumstances that each measure could be applied as the best indicator for the company performance. Next section discusses potential factors that influence cash flow and earnings.

Potential Factors that Influence Cash Flow and Earnings
The traditional view of the primary role of the accruals process is to produce a reliable, timely, summary measure of company performance. Accruals mitigate the problems in cash flow, cash flow suffering from mismatching and timing problems. This means that cash flow cannot be considered as a reliable measure of company performance. Mismatching problems in cash flow appear when a cash outflow is made in one measurement interval whereas the cash inflow associated with this cash outflow is received in another measurement interval. This section provides a discussion of the hypotheses of the first part of this study. This discussion will be organised under the following headings: measurement interval predictions, effect of the magnitude of accruals, components of accruals, and the effect of the operating cycle.

Consider a company that pays cash for stock and then sells the stock on account within the same measurement interval. Further, assume this company follows a sound credit policy so that the cash is reasonably certain and will be paid in the next measurement interval. In this case cash flow reflects only the cost of stock in the first measurement interval and ignores the benefits generated in the same measurement interval (credit sales). In the subsequent measurement interval cash flow will reflect a benefit (sales) derived in a previous measurement interval. Moreover, cash suffers from timing problems.

Timing problems in cash flow appear when a company follows a credit policy in both cost and benefit activities. Consider the previous example, but assume now that this company buys stock from suppliers on account and sells to customers on account in the same measurement interval. In this case cash flow ignores both the cost and benefits in the first measurement interval, whereas cash reflects the net benefits of these transactions in the next measurement interval.
The above examples show that cash flow is expected to be a poor measure of company performance. Net cash flows are expected to suffer more severely from mismatching and timing problems than cash from operation since there are no accrual adjustments for net cash flow.

Accruals adjustments based on accounting principles, particularly matching and recognition principles can mitigate the problems inherent in cash flow. Consequently, accounting earnings are expected to produce a more reliable measure of company performance. Furthermore, the role of accruals in mitigating the problems in cash flow is expected to be more important over short periods; short period stand for one accounting period. Thus, it will be expected that over short measurement intervals, there is a stronger association between contemporaneous earnings and stock returns than between cash flow measures and stock returns.

As a counter points of view for the above argument that management has flexibility to opportunistically manipulate accruals. This manipulation gives the advantage to cash flow as a better measure of performance. Thus it is an empirical question whether the primary role of accruals is to produce a more timely measure of company performance as predicted under the first view or a more noisy measure as predicted under the alternative view.

An additional implication of the relation between accounting earnings and cash flows can be obtained by considering the following example. A magazine publisher receives subscription payments in advance; according to the realisation principle the receipts represent an obligation to provide periodic delivery of the publication. Consequently, revenues are recognised in proportion to issues delivered.

Let :

$R_t = \text{Revenues generated from delivering the publication during accounting period } t.$

$C_t = \text{Cash collected in accounting period } t.$

$\phi = \text{Proportion of undelivered issue of the publication during period } t ; \phi \text{ is assumed to be constant over time and all the undelivered publications will be delivered by the next measurement interval.}$

Now,

$$R_t = C_t(1 - \phi) + C_{t-1} \phi$$

(1)

Earnings will differ from cash flows in each period to the extent that cash associated with undelivered publications is included in the company performance under a cash basis and revenues recognised in the next measurement interval are excluded under a cash basis.

Now consider doubling the time interval over which performance is measured. Under these circumstances the importance of accounting accruals diminishes since the difference between earnings and cash flow is expected to decline. Originally the proportion of undelivered publications is $\phi$. With a doubling of the time interval, total cash will equal $C_t + C_{t-1}$. Total accruals (short term liabilities) at the end of the period equal $C_t(1 - \phi)$. So the proportion of undelivered publication over this interval, $K$, is,

$$K = \frac{C_t \phi}{C_t + C_{t-1}}$$

(2)
The above equation assumes that both $C_{t-1}$ and $\phi$ are greater than zero, and all the other assumptions are still valid. This means that $K$ is less than $\phi$, so the above equation reveals that increasing the time interval always results in a decrease in the proportion of undelivered issues of the publication during the period, so the difference between a cash basis and an accrual basis will decrease over time. This argument is extend the earlier one before and shows that accounting income is still is favourable indicator for the company performance but the value relevance wanes as the window of performance is extended.

Another explanation for this hypothesis is that due to earnings manipulation, accruals create a noisy measure over short periods. This means that over long measurement intervals the ability of earnings to reflect company performance will improve relative to cash flow. However, the ability of earnings to reflect company performance is also expected to improve over the long measurement interval (Easton et al, 1992). This is because accruals cannot control all the problems inherent in cash flow expected over short periods.

Equation (1) can also provide insights into the determination of cross-sectional variation in the usefulness of accruals. The formula in equation (1) is,

$$R_t = C_t (1 - \phi) + C_{t-1} \phi$$

Assume this company is in steady state. This means that cash receipts will not change over time, so

$$C_t = C_{t-1}$$

By substituting $C_t$ for $C_{t-1}$ in equation (3.1),

$$R_t = C_t - C_t \phi + C_t \phi$$

so,

$$R_t = C_t$$

Equation (3) indicates that in steady state there is no difference between the net income provided under a cash basis and an accruals basis. Consequently, in steady state, accruals are not being expected to play an important role in improving the ability of earnings to reflect company performance. On the other hand, consider a company that does not operate in a steady state environment. In this case $C_t \neq C_{t-1}$. Rearranging equation 1,

$$R_t = C_t - C_t \phi + C_{t-1} \phi$$

so,

$$R_t - C_t = (C_{t-1} - C_t) \phi$$

Equation (4) reveals that the difference between the cash basis and the accruals basis will be larger,

1. The greater the proportion of undelivered publications ($\phi$).
2. The greater the difference between cash receipts in consecutive years.

The above analysis highlights where accruals are expected to play an important role in measuring company performance and in deciding the circumstances of cash flow and earnings as competing measures for the company performance.
Finally, this study provides a theoretical framework for future empirical studies in this field. Thus, it will provide relevant information to investors, analysts and professional accountant regarding the best way of assessing the company performance in different circumstances.

References


