

ARE EARNINGS MORE INFORMATIVE THAN CASH FLOWS?

We know that most investment decision models use predicted cash flows. Therefore the question arises as to why companies do not simply report their cash flows so that investors can use these to assess the operations of the company. Why have accountants spent so much time and effort to develop the concept of earnings? What is it (if anything) that earnings has, that cash flow does not?

P M Dechow, "Accounting earnings and cash flows as measures of firm performance: the role of accounting accruals", Journal of Accounting & Economics, 1994, 3-42.

This paper compares earnings with cash flow figures as measures of performance. Earnings is a number based on the principle of accruals. It is an adjustment of cash flow. The advantage of earnings *should be* that any noise in the cash flow (which does not reflect underlying economic performance) is eliminated. Examples of this noisy, or temporary, component of cash flow are: exactly when the company receives payment from its debtors; or exactly when it pays its suppliers for deliveries of stock.

Although accrual accounting eliminates this noise from the earnings measure of performance, it is possible that earnings suffer from a problem which cash flows do not, namely manipulation by the management of the company. It is well recognised, in positive accounting theory, that managers may manipulate reported earnings in order to serve their own interests; for example, they may manipulate earnings if they are paid a bonus when earnings reach a particular target level. Managers may manipulate earnings by making excessive provisions for bad debts in good years in order to reduce earnings to a level just above the target. In subsequent periods, when company performance needs a boost to reach the earnings target, those provisions which have been unused can be released to the profit and loss account, effectively as income.

Given the potential for manipulation of earnings by management, an important issue is therefore whether, in fact, earnings are a more informative measure of performance than cash flow. This is investigated by Dechow.

Dechow defines:

Earnings (E)	=	Cash from operations (CFO) - depreciation (LTOA) + increase in working capital (Δ WC)
LTOA	=	long term operating accruals = depreciation
Δ WC	=	increase in stock + increase in debtors - increase in creditors
Operating accruals (OA)	=	all operating accruals = LTOA + Δ WC
NCF	=	net cash flow = CFO - capital purchases

1. Time series properties

Table 2 (Panel A) of the article shows that the first order annual autocorrelations are:

Change in NCF	-0.523
Change in CFO	-0.434
Change in E	-0.175

This is what is expected if NCF and CFO contain larger temporary components (more noise) than E.

Example

Suppose that earnings (E) are constant at £10 over three periods, t, t+1 & t+2. Therefore the changes in earnings ΔE are zero. In this case then, earnings in one time period are perfectly correlated with the earnings in the next time period. Also, the changes in earnings (ΔE) are perfectly correlated over time.

Earnings:

E_1 10	E_2 10	E_3 10
	ΔE_2 0	ΔE_3 0

Consider now the case in which some £2 of debts owed to the company (and included in E_1) are not paid until E_2

Cash flows from operations:

CFO_1 8	CFO_2 12	CFO_3 10
	ΔCFO_2 +4	ΔCFO_3 -2

The changes in cash flow between periods will be negatively correlated. Cash flows in period 2 will be larger than earnings because debtors have paid their bills; ΔCFO_2 will be +4. In the following period, cash flows will be the same as earnings, but ΔCFO_3 will be -2.

2. Overall correlation with stock returns

Table 3 of the article shows the adjusted R^2 between the different measures of performance and stock returns over the same period. It shows that earnings (E) has a stronger association with stock returns than CFO or NCF. This arises presumably because the E measure of performance contains less noise than either CFO or NCF. The stock market places less weight on these noisy (transitory) components of performance, and concentrates on the more permanent cash flows.

R² between E, CFO, NCF and stock returns

Period of measurement	E	CFO	NCF
Quarterly	3.24	0.01	0.01
Annual	16.20	3.18	2.47
Four year	40.26	10.88	6.12

As the period of measurement increases, the R² increases; this is because there is less noise in all measures.

3. Association with stock returns, by quintile

Of course using overall correlations is rather a rough test because it ignores whether there are any differences between the measures of performance. This is addressed in the test in Table 5 of the article. The sample is partitioned in to five, according to the differences between E and NCF. Quintile 1 contains companies for which there are no substantial differences between NCF and E. Quintile 5 contains companies for which there is a substantial difference between NCF and E.

R² between E, NCF and stock returns

Period of measurement	NCF	E
Quarterly		
quintile 1	3.44	3.55
quintile 5	0.15	4.96
Annual		
quintile 1	16.20	16.84
quintile 5	0.24	21.98
Four year		
quintile 1	27.25	26.99
quintile 5	2.83	31.78

As expected, the correlations are similar when there are no differences between NCF and E. However, for quintile 5 where cash flows are very different from earnings, then cash flows have a much lower association with stock returns than earnings

4. Which adjustment is the more important, ΔWC or LTOA?

There are two adjustments to cash flow that are needed in order to derive the earnings number: depreciation (LTOA) and changes in working capital (ΔWC). Another part of the paper tests whether the long term operating accruals adjustment (LTOA) is more important than the working capital accruals adjustment (WC).

As above, companies are ranked by the size of the adjustment. Quintile 1 are firms which have a small value of the adjustment; quintile 5 are firms which have a large value of the adjustment. Notice that there are 3 types of adjustment, OA, Δ WC and LTOA; therefore the quintiles do not remain the same for the different regressions. Return is regressed on CFO three times; first by ranking the companies by OA, then by ranking the companies by Δ WC, and finally by ranking the companies by LTOA. Similarly for regressions of return on E.

R² between E, CFO and stock returns, over annual periods of measurement

	CFO -----			E -----		
	OA	Δ WC	LTOA	OA	Δ WC	LTOA
quintile 1	14.99	7.72	2.24	15.78	14.24	12.68
quintile 2	12.06	8.69	2.21	14.68	15.73	17.66
quintile 5	0.01	0.79	4.00	20.47	18.19	20.46

Note:

OA = all operating accruals = Δ WC + LTOA

CFO does not adjust for LTOA nor Δ WC

E adjusts for both LTOA and Δ WC

I - REGRESSIONS OF RETURN ON CFO

When we don't distinguish between the type of adjustment (OA), the R² declines for CFO (to 0.01) where as it actually rises for E (to 20.47). That is ranking companies by OA matters; when OA is small the R² is quite large, whereas when OA is large then R² is low.

This property remains when we consider Δ WC adjustments only. The R² declines for CFO (to 0.79), whereas it rises for E (to 18.19). This means that the size of Δ WC also matters.

However, when we rank observations by LTOA, then the R² on CFO regressions does not fall; it actually rises from 2.24 to 4.00. This means that when we regress stock return on CFO, then for observations with low LTOA we get much the same R² as we get for observations with high LTOA. Dechow concludes that these results "are consistent with long term operating accruals playing a less important role than working capital accruals". This would suggest that fixed asset accounting is less important than accounting for working capital changes (stock, debtors and short term liabilities).

II - REGRESSIONS OF RETURN ON EARNINGS

Since E adjusts for LTOA and Δ WC, then we should observe no change in the R² for the different portfolios. But for some reason, the R² increases with the size of the adjustments that have been made to earnings.