

ADJUSTED CASH EARNINGS (ACE)

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1. Overview

Accounting income measurement depends on accruals and cash flows. Accruals are less “objective” than current cash flows. Subjectivity can lead to biases, and a natural concern is whether the current income is over- or understated due to possibly biased accruals. Such biases can make the income statement and related ratios, such as the profit margin, misleading indicators of future performance.

FSA practice tries to identify biases by scrutinizing financial statements and related footnotes. Identifying biased accruals is difficult and time consuming. It requires knowing accounting standards, familiarity with the company business, and experience. Consequently, there is demand for a relatively simple analysis to test whether the current earnings most likely have been over- or understated due to a “seemingly too large” or “seemingly too small” (total net) accrual. That is, we need a competing measure of earnings that eliminates hypothesized biases due to accruals embedded in the reported earnings. This spreadsheet provides such a measure, referred to as Adjusted Cash Earnings or *ACE* for short.

1.1. Key metrics and their purpose

Any upward bias in the current reported earnings due to accruals will reduce the future reported profit margin when these accruals reverse, and vice versa. If the reported earnings exceed ACE, which is the debiased measure of earnings, then one expects future reported earnings to be less than ACE, and vice versa. These observations motivate the key metrics in the spreadsheet, namely, the difference between reported earnings and ACE scaled by sales and reported earnings to get a sense of materiality.

This new measure of earnings, while obviously imperfect, is a “sanity check” on reported earnings. If reported earnings exceed ACE, then we expect future profit margin to decline, and vice versa.

1.2. Soft versus hard items

The measurement of ACE spreadsheet relies on separating what we refer to as “hard” assets and liabilities from “soft” assets and liabilities. Hard items such as cash, short-duration receivables and payables, and debt are likely to be objectively measured while “soft” items such as inventories, PP&E, deferred revenues, and pension accruals are more subjective.

2. Computation of ACE

The spreadsheet computes ACE in two steps described below.

2.1. Step 1: Compute Cash Earnings [aka Hard Earnings]

2.1.1. Concepts

- Comprehensive earnings = change in equity + net dividends.
 - ♦ Equity = assets - liabilities.
- Comprehensive cash earnings or “hard” earnings = change in “hard” equity + net dividends
 - ♦ “Hard” equity = “hard” assets minus “hard” liabilities.
 - ♦ We motivate the terminology “hard” assets/liabilities by the idea that hard items are less dependent on estimates and other subjective judgments. Thus, Cash Earnings can also be viewed as Hard Earnings.

2.1.2. Specific steps

- Compute change in hard equity
 - ♦ Hard assets = financial assets + receivables that are like financial assets
 - ♦ Hard liabilities = financial liabilities + payables that are like financial liabilities
 - ♦ “Hard” equity= “hard” assets minus “hard” liabilities
 - ♦ If one considers financial assets and financial liabilities as the only hard items, then one arrives at a very restrictive definition of cash earnings. This definition is sometimes used in practice.
- Net dividends = Comprehensive earnings - change in equity
- Comprehensive cash earnings or “hard” earnings = change in “hard” equity + net dividends
- Compute soft components
 - ♦ Soft component of earnings = Reported earnings – Hard earnings
 - ♦ Soft component of equity = Reported equity – Hard equity
- Optional: To illustrate how to determine if an item is hard or soft, we evaluate receivables in the “Example” tab. We consider two indicators of the subjectivity of collection risk: days of receivables (=receivables/sales per day) and allowance for bad debts as percent of receivables. We then specify cutoffs for these two measures of quality of receivables. Receivables qualify as hard assets if and only if both cutoffs are met.

2.2. Step 2: Compute Adjusted Cash Earnings (ACE)

Cash earnings ignore all soft accruals. This is too restrictive because some soft accruals (e.g., growth in PP&E) are inevitable when a firm grows. Adjusted Cash Earnings (ACE) allow for soft accruals that can be justified by sales growth. Thus, ACE is defined as the sum of cash earnings and growth in soft equity driven by sales growth.

- Growth in soft equity driven by sales growth = Soft component of equity * sales growth.
- Adjusted Cash Earnings (ACE) = Cash earnings + Growth in soft equity driven by sales growth
 - ♦ Adjusted Cash Earnings can also be called Growth-adjusted Hard Earnings.
 - ♦ As mentioned earlier, the difference between reported earnings and adjusted cash earnings (ACE) arises from biases in soft accruals and measures the subjective judgment in reported earnings. This difference is the first-cut estimate of the potential bias in reported earnings.

Summary
Reported cash flows: No accruals
Step 1: Cash earnings = Change in hard equity + Net dividends = Cash flows + Changes in hard accruals
Step 2: Adjusted cash earnings = Cash earnings + Growth-justified change in soft accruals
Reported earnings: All accruals [Hard and soft]

In sum, the spreadsheet allows for the measurement of the difference between a GAAP “soft” actual accrual and estimates of what the “accrual ought to be”. The larger this difference, the lower the earnings quality, and the lower the forecasted future profit margin.

3. Metrics

The difference between reported earnings and ACE measures the potential bias in earnings. This bias is then scaled by sales or reported earnings.

The measurement of soft equity over time sets the stage for asking whether the profit margin in the future is likely to improve. One can consider the trend in the ratio soft equity/sales to evaluate this issue. A declining trend over time suggests that the “embedded” future expenses are relatively low to sales; it suggests that, probabilistically, margins will increase.

4. Why ACE is better than cash flows

Three problems arise if cash flows are used to assess earnings biases. The first two relate to the problems inherent in the cash flow statement. The third one deals with the fact that a summary dismissal of all accruals is overly restrictive.

- Cash flows omit the effect of significant non-cash events. The cash flow statement omits non-cash exchanges. Examples are initial acquisition of assets under capital leases, acquisitions of companies for stock, and non-cash compensation such as stock options.
 - ♦ Our remedy: ACE relies on changes in balance sheet accounts thereby incorporating cash transactions as well as non-cash transactions.
- Cash is not the only objectively measurable item or “hard” item. The cash flow statement explains changes in cash and cash equivalents. However, many more balance sheet items are objectively measurable. For example, most financial assets and financial liabilities are objectively measurable. In addition, some non-financial assets/liabilities are no less “hard” than cash, and thus equally measurable. High quality receivables fall into this category. These receivables can thus be said to be “as good as cash” though they are treated as accruals in the cash flow statement. The same holds for many accounts payable, as they are no less “hard” than loans from financial institutions.
 - ♦ Our remedy: ACE incorporates changes in all hard assets and hard liabilities, not just cash.
- Cash flows are biased performance measures for growing firms. Firms buy inventories and PP&E before these inventories and PP&E generate cash receipts from customers. If firms are not growing, then this mismatch between expenditures and receipts does not hurt cash flows because current receipts resulting from prior expenditures are offset by current expenditures. When firms are growing, then this mismatch makes cash flows a biased performance measure because the current receipts are low relative to current expenditures. In general, one should expect growth in accruals such as inventories and PP&E for growing firms. Thus, cash earnings that strip out all changes in accruals are a biased performance measure for growing firms.
 - ♦ Our remedy: ACE adjusts for justifiable growth in soft accruals.

5. Advanced: A detailed income statement for cash earnings

If one acknowledges problems inherent in soft accruals, then it makes sense to prepare an income statement that has eliminated the effects of all soft accruals. The final part provides such an income statement, and, naturally, it can be compared to the reported income statement. Of particular interest is the extent to which reported earnings are biased in its accounting of activities that have only short-term benefits, in other words COGS and SG&A. The cash income statement has a comparable specific item: “expenditures incurred that do not benefit future periods”. Hence, one can assess the GAAP accounting after having separated the current activities from long-term benefit activities such capital expenditures, R&D, and the acquisition of subsidiaries.

6. Optional: Alternate views of ACE (not in the spreadsheet)

Although not shown in the spreadsheet, one can understand the derivation of ACE in two ways shown below: [Note: The tables below do not list all accounts that need adjustments. They pick out only the common ones. The tables also show only the enterprise items, as financial items are generally not subjective.]

6.1. Deriving enterprise ACE from enterprise cash flows

Enterprise cash flow [Enterprise profit with no accruals]
Change in receivables (Change in payables)
= Enterprise cash flow with hard accruals [Cash enterprise earnings: Enterprise profit without soft accruals]
Change in inventory due to growth in business Change in net PPE due to growth in business (Change in deferred revenue due to growth in business) (Change in long-term accrued expenses due to growth in business)
= Adjusted cash enterprise earnings: Enterprise cash flow adjusted for growth

Note that Enterprise cash flow = Operating cash flow + Net interest payments after tax – Capital expenditures.

6.2. Deriving ACE from earnings

Enterprise profit after tax
(Change in inventory) (Change in net PPE) Change in deferred revenue Change in long-term accrued expenses
= Cash enterprise earnings: Enterprise profit without soft accruals [Enterprise cash flow with hard accruals]
The rest of the steps are the same as the above table.