Basic Accrual Accounting and Financial Reporting Concepts

Adapted with permission from a plenary presentation by Professor Patricia Dechow at the 2018 Annual Conference of the Accounting and Finance Association of Australia and New Zealand. Professor Dechow is the Robert R. Dockson Professor of Business Administration & Professor of Accounting at the University of Southern California Marshall School of Business.
Defining Earnings Quality

HIGH QUALITY EARNINGS
Reflect the economics of the business
Are sustainable (are a good indicator for the future)

LOW QUALITY EARNINGS
*Do not* reflect the economics of the business
Have been manipulated/contain errors
Are not sustainable (are a poor indicator for the future)

Understanding the factors that cause earnings quality to differ is a key research area in accounting.

- Important for investing, auditing, SEC in monitoring and regulating, banks providing loans, etc.
Operationalizing Earnings Quality

• Concept of earnings persistence

• $Earnings_{t+1} = \beta \times Earnings_t + e$

  - $\beta$ closer to 1 $\Rightarrow$ earnings are more sustainable
  - $\text{VAR}(e)$ closer to 0 $\Rightarrow$ earnings are more predictable
Earnings Quality 1

- Chris starts a business

Cup and straw = 0.05
Lemon = 0.15
Sugar = 0.10
Total = 0.30
Earnings Quality 1

I will pay you $1.00 for that delicious cup of lemonade.

Cup and straw = 0.05
Lemons = 0.15
Sugar = 0.10
Total = 0.30
Earnings Quality

I will pay you $1.00 for that delicious cup of lemonade

That’s perfect (my precious)!

Cup and straw = 0.05
Lemons = 0.15
Sugar = 0.10
Total = 0.30
Earnings Quality 1

Chris’ earnings and cash flows

Revenue:

Cup of Lemonade = $1.00

Expenses:

Costs of goods sold = -0.30

Earnings = 0.70

Cup and straw = 0.05
Lemons = 0.15
Sugar = 0.10
Total = 0.30
Earnings Quality

• Milli starts a business

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cups and straws</td>
<td>$1.00</td>
</tr>
<tr>
<td>Lemons</td>
<td>$1.00</td>
</tr>
<tr>
<td>Box of sugar</td>
<td>$2.00</td>
</tr>
<tr>
<td><strong>Total Costs</strong></td>
<td><strong>$4.00</strong></td>
</tr>
</tbody>
</table>
Earnings Quality

I will pay you $1.00 for that lemon sugar drink

Cup and straws = 1.00
Lemons = 1.00
Box of sugar = 2.00
Total = 4.00
Earnings Quality

I will pay you $1.00 for that lemon sugar drink

TOMORROW

Cup and straws = 1.00
Lemons = 1.00
Box of sugar = 2.00
Total = 4.00
Earnings Quality

I will pay you $1.00 for that lemon sugar drink

TOMORROW

IT’S A DEAL!

Cup and straws = 1.00
Lemons = 1.00
Box of sugar = 2.00
Total = 4.00

TOMORROW
Earnings Quality 2

Milli’s Earnings (on a cash basis)
Revenue: = 0
Expenses: = $ -4.00
Cash earnings = -4.00

Cup and straws = 1.00
Lemons = 1.00
Box of sugar = 2.00
Total = 4.00
Comparison of CASH FLOWS

Chris’ earnings = cash flows + accruals
0.70 = 0.70 + 0

Milli’s earnings = cash flows + accruals
0.70 = $-4.00 + $4.70

Similar transaction occurred but cash-based performance looks very different
Accrual Accounting

THE TIMING OF CASH FLOW RECEIPTS AND PAYMENTS IS NOT IMPORTANT

Focus on underlying economics
Earnings Quality

Milli’s Earnings:
(Accrual basis)
Revenue:
Cup of Lemonade = $1.00
Expenses:
Costs of good sold = 0.30
Earnings = 0.70

Cup and straws = 1.00 – 0.05
Lemons = 1.00 – 0.15
Box of sugar = 2.00 – 0.10
Inventory = 4.00
SOLD = – 0.30
Inventory = 3.70
Comparison of ACCRUAL EARNINGS

Chris’ EARNINGS
0.70

Milli’s EARNINGS
$0.70

Earnings on accrual basis makes businesses comparable
Reconciling Earnings to Cash Flows

Chris

Earnings = cash flows + accruals
0.70 = 0.70 + 0

Milli’s

Earnings = cash flows + accruals
0.70 = $-4.00 + $4.70

Earnings are the same even though cash flows are very different

ACCRUALS = + 1.00 + 3.70 = $4.70
Quality Issues with Milli’s accruals

I will pay you $1.00 for that cup of lemonade TOMORROW

Accounts Receivable

Sold Lemonade!
Timely useful information

BAD NEWS
Gandalf may disappear
Milli’s accruals

Inventory

High inventory: Milli anticipates future sales!

Obsolete inventory
Nobody wants to buy lemonade
Comparison of Business Models

Chris’

Has Cash!!
Simple business

0.70 cash

Milli’s

Accruals are indicators of growth in RISKY investments

Accruals are estimates of the value of these investments but they can be wrong

ACCRUALS = + 1.00 + 3.70
Comparison of Earnings Quality

Chris’

Earnings = cash flows + accruals
0.70 = 0.70 + 0

Milli’s

Earnings = cash flows + accruals
0.70 = $-4.00 + $4.70

ACCRUALS CAN BE FUZZY AND CONTAIN ERRORS
CHRIS’ EARNINGS ARE HIGHER QUALITY THAN MILLI’S
Operationalizing Earnings Quality

Empirical evidence earnings persistence:

- \( \text{Earnings}_{t+1} = \beta \text{Earnings}_t + \varepsilon \)
- \( \text{Earnings}_{t+1} = \beta_1 \text{Cash Earnings}_t + \beta_2 \text{Accrual Earnings}_t + \varepsilon \)
- Empirically, \( \beta_1 \approx 0.72 \) and \( \beta_2 \approx 0.65 \)

\[
\begin{align*}
\text{E}(\text{Chris’ earnings}_{t+1}) &= 0.72 \times 0.7 + 0.65 \times 0.0 \\
\text{Chris’ expected } t+1 \text{ earnings} &= \$0.504
\end{align*}
\]
\[
\begin{align*}
\text{E}(\text{Milli’s earnings}_{t+1}) &= 0.72 \times (-4.00) + 0.65 \times 4.70 \\
\text{Milli’s expected } t+1 \text{ earnings} &= \$0.175
\end{align*}
\]

\[
\begin{align*}
\text{Chris’ } \beta &= 0.504 / 0.7 = 0.72 \\
\text{Milli’s } \beta &= 0.175 / 0.7 = 0.25
\end{align*}
\]
Operationalizing Earnings Quality

- Concept of earnings persistence

- $Earnings_{t+1} = + \beta_1 \text{Cash flows}_t + \beta_2 \text{Accruals}_t + \epsilon$

- $\beta_1 > \beta_2$
Understanding Earnings Quality

EARNINGS = CASH FLOWS + ACCRUALS

Earnings Quality research tries to disentangle

“Good” Accruals that correctly reflect the business 😊

“Bad” Accruals that reflect errors, manipulation, and overinvestment 🤡
• *Philosophical Question*:

• What is objective of accrual accounting?
• **Philosophical Question:**

• What is objective of accrual accounting?

  1. *Economic perspective: (Balance Sheet perspective)*
     – Investors care about firm value. The objective is to measure the value of assets and liabilities.

  2. *Performance evaluation (Income Statement perspective)*
     – Investors want to know what management did this period. The objective is to measure how much income was generated this period.
## Performance Evaluation Perspective

\[
\text{Assets}_t - \text{Liabilities}_t = \text{Shareholders’ Equity}_t
\]

<table>
<thead>
<tr>
<th>Assets include cash</th>
<th>Liabilities include interest-bearing debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ assets that emerge from recognizing revenue when earned in periods before collecting the cash (e.g., accounts receivable)</td>
<td>+ liabilities that emerge from deferral of expense recognition until the period of related revenue recognition (e.g., wages payable)</td>
</tr>
<tr>
<td>+ assets that emerge from deferring recognition of expense until recognition of related revenue (e.g., inventory).</td>
<td>+ liabilities that emerge from receiving cash in advance of the period of performance (e.g., receipts from customers prior to delivery of product or services).</td>
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In other words, the objective is to recognize revenue whenever it is earned and expense in periods when related revenues are recognized.

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Shareholders’ equity is the residual resulting from subtracting liabilities from assets.
Economic Perspective

\[ \text{Assets}_t - \text{Liabilities}_t = \text{Shareholders’ Equity}_t \]

Measure the value
Economic Perspective

\[ \text{Assets}_t - \text{Liabilities}_t = \text{Shareholders’ Equity}_t \]

**Measure the value**

\[ \text{Assets}_{t+1} - \text{Liabilities}_{t+1} = \text{Shareholders’ Equity}_{t+1} \]

**Measure the value**
Economic Perspective

\[ \text{Assets}_t - \text{Liabilities}_t = \text{Shareholders’ Equity}_t \]

\[ \Delta \text{Value} = \text{Income} \]

\[ \text{Assets}_{t+1} - \text{Liabilities}_{t+1} = \text{Shareholders’ Equity}_{t+1} \]
Economic Perspective

\[ \text{Assets}_t - \text{Liabilities}_t = \text{Shareholders' Equity}_t \]

Measure the value

\[ \Delta \text{Value} = \text{Income} \]

\[ \text{Assets}_{t+1} - \text{Liabilities}_{t+1} = \text{Shareholders' Equity}_{t+1} \]

Measure the value

Market Values Follow a Random Walk
Economic Perspective

\[ \text{Assets}_t - \text{Liabilities}_t = \text{Shareholders’ Equity}_t \]

\[ \text{Assets}_{t+1} - \text{Liabilities}_{t+1} = \text{Shareholders’ Equity}_{t+1} \]

\[ \Delta \text{Value} = \text{are transitory and unpredictable} \]

Market Values Follow a Random Walk