The effect of natural disaster on earnings management

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Research Question
Earnings Management

• Earnings management includes both legitimate and less legitimate decisions by manager to change accounting policies or real actions in order to smooth earnings or achieve some specific reported earnings objective

- to avoid loss

- to increases in annually earnings

- to meet analysts’ earnings forecasts
## Motivations to Manage Earnings

<table>
<thead>
<tr>
<th>Internal factors</th>
<th>External factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm’s characteristics (Matsumoto, 2002)</td>
<td>Natural disasters (such as hurricanes: Byard et al. 2007)</td>
</tr>
<tr>
<td>- Institutional ownership</td>
<td>Environmental uncertainty (Cormier al, et, 2013)</td>
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<tr>
<td>- Reliance on implicit claims with their stockholders</td>
<td></td>
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<tr>
<td>- Value-relevance of earnings</td>
<td></td>
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<tr>
<td>Personal aims of the managers, i.e. conservative or aggressive (Rodrigues &amp; Esteban, 2012)</td>
<td>Economic/Financial crisis (Latridis &amp; Dimitras, 2013; Trombetta &amp; Imperatore, 2014)</td>
</tr>
<tr>
<td>Managers’ risk preference (Sutton, 1988)</td>
<td>Meet or beat the expectations of financial analysts (Zang, 2012; Matsumoto, 2002)</td>
</tr>
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</table>
Patterns of Earnings Management

• Income minimization/ Taking a big bath
  - during periods of high profitability
  - during the crisis (Kousenidis et al., 2013)
  - to avoid political costs (Jones, 1991; Byard et al. 2007)

• Income maximization
  - compensation plans (Healy, 1985; Zang, 2012; Dechow & Skinner, 2000; Cohen and Zarowin, 2010)
  - to avoid violation of debt covenants (Dichev & Skinner, 2002)
  - to meet investors’ earnings expectations (Jackson & Liu, 2010)
# Ways to Manage Earnings (1)

<table>
<thead>
<tr>
<th>Nature</th>
<th>Real earnings management</th>
<th>Accrual earnings management</th>
</tr>
</thead>
</table>
|        | Effect on real operating cash flow and activities of firm directly.  
1. cutting Research and development (R&D) or expenses and advertising  
2. premature revenue recognition by offering prices discounts, expand credit terms, sales of profitable assets or stock repurchase  
3. overproducing | Relate to changes in estimates and accounting policies. Accruals depend on judgements of management teams within the constraints of generally accepted accounting principles (GAAP) such as  
- Big bath restructuring charges  
- Cookie jar reserves  
- Flushing the investment portfolio  
- Operating Income VS Non-operating Income |
### Ways to Manage Earnings (2)

<table>
<thead>
<tr>
<th>Timing for manage earnings</th>
<th>Real earnings management</th>
<th>Accrual earnings management</th>
</tr>
</thead>
<tbody>
<tr>
<td>During the fiscal year</td>
<td></td>
<td>After the end of the accounting period but within the confines of accounting system</td>
</tr>
<tr>
<td>Not a GAAP violation</td>
<td></td>
<td>“Easy” to do</td>
</tr>
<tr>
<td>harder to detect</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More costly to the firms</td>
<td></td>
<td>Auditor and regulators’ scrutiny and litigation risk the sum of accruals must be zero over the life of the firm.</td>
</tr>
</tbody>
</table>
Empirical Setting

Mapping Disaster Risks
A United Nations study released on Sunday compares data from several types of natural disasters against population and economic trends, highlighting areas with a high risk of death.

Combined risk of death
From cyclones, floods, earthquakes and landslides

Occurrence of reported natural disasters by continent:
1950 - 2011

Source: United Nations
Empirical Setting

Source from the International Federation of Red Cross Red Crescent Societies
## Sample Measures

<table>
<thead>
<tr>
<th>Country</th>
<th>Period</th>
<th>Firms-Years</th>
<th>Unique Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>2003-2014</td>
<td>3,073</td>
<td>419</td>
</tr>
<tr>
<td>Thailand</td>
<td>2003-2014</td>
<td>4,900</td>
<td>537</td>
</tr>
</tbody>
</table>

**Discretionary accrual**
- Jones Model (1991)
- Modified Jones Model (1995)

**Real Earnings Management**
- Roychowdhury Model (2006)

**Quality of accruals**
- Dechow and Dichev Model (2002)
Indonesia

Jones Model
Mean DA = 0.006

discretionary Accrual after use Winsorise at 1%

Modified Jones Model
Mean DA = -0.001

discretionary Accrual after use Winsorise at 1%

2004: Tsunami
2008: Credit Crisis

2009: Sumatra earthquakes
2013: Flooding as of 15 January
Thailand

Jones Model
Mean DA = -0.002

discretionary Accrual after use Winsorise at 1%

Modified Jones Model
Mean DA = -0.001

discretionary Accrual after use Winsorise at 1%

2004: Tsunami
2008: Credit Crisis and Thai political crisis
2011: Big Flooding
Classify by industry - Thailand in 2004

Discretionary Accruals in 2004 (Modified Jones Model) After use winsor command p(0.01)
Classify by industry - Thailand in 2008
Classify by industry - Thailand in 2011

Discretionary Accruals in 2011 (Modified Jones Model) After use winsor command p(0.01)
Thank you for your attention!

Questions and comments welcome!