# The effect of natural disaster on earnings management

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Business
Administration

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# Research Question

Business Administration

# 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

| Internal factors | External factors |
|---|---|
| Firm's characteristics (Matsumoto, 2002)<br>- Institutional ownership<br>- Reliance on implicit claims with their stockholders<br>- Value-relevance of earnings | Natural disasters (such as hurricanes: Byard et al. 2007)<br>Environmental uncertainty (Cormier al, et, 2013) |
| Personal aims of the managers, i.e. conservative or aggressive (Rodrigues & Esteban, 2012) | Economic/Financial crisis (Latridis & Dimitras, 2013; Trombetta & Imperatore, 2014) |
| Managers' risk preference (Sutton, 1988) | Meet or beat the expectations of financial analysts (Zang, 2012; Matsumoto, 2002) |
| Stock –financed acquisitions (Cohen & Zarowin, 2010) | Political processes (Watts & Zimmerman, 1986; Leuz et. al, 2013; Pinnuck & Potter, 2009) |
| Compensation contract (Healy & Wahlem, 1999; Jones, 1991, Zang, 2012) | Covenant violations (Costell & Wittenberg-Moerman, 2011; Aerts & Zhang, 2014) |

# 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)

| | Real earnings management | Accrual earnings management |
|---|---|---|
| **Nature** | Effect on real operating cash flow and activities of firm directly.<br>1. cutting Research and development (R&D) or expenses and advertising<br>2. premature revenue recognition by offering prices discounts, expand credit terms, sales of profitable assets or stock repurchase<br>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<br>- Bbig bath restructuring charges<br>- Cookie jar reserves<br>- Flushing the investment portfolio<br>- Operating Income VS Non-operating Income |

# Ways to Manage Earnings (2)

| | Real earnings management | Accrual earnings management |
|---|---|---|
| **Timing for manage earnings** | During the fiscal year | After the end of the accounting period but within the confines of accounting system |
| **Benefits** | Not a GAAP violation<br>harder to detect | "Easy" to do |
| **Constraints** | More costly to the firms | Auditor and regulators' scrutiny and litigation risk<br>the sum of accruals must be zero over the life of the firm. |
| **Model Test** | Roychowdhury 2006 | Healy 1985<br>DeAngelo 1986<br>Jones 1991<br>Modified Jones 1991 |

# Empirical Setting

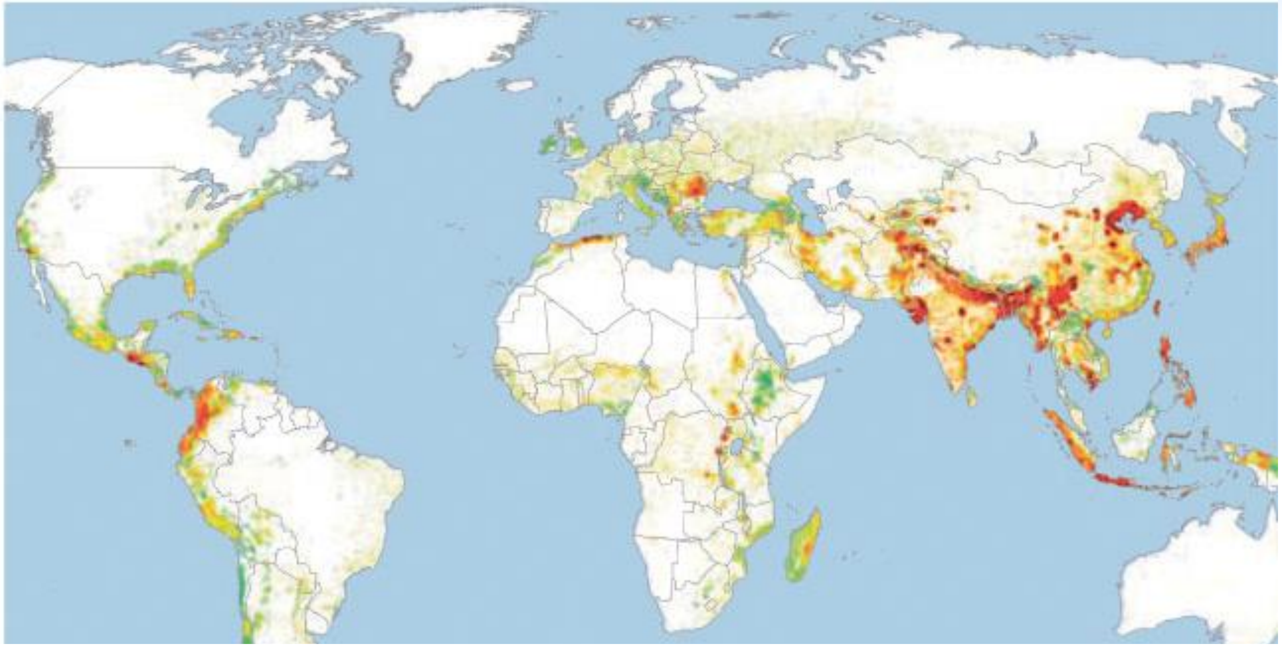
## Mapping Disaster Risks

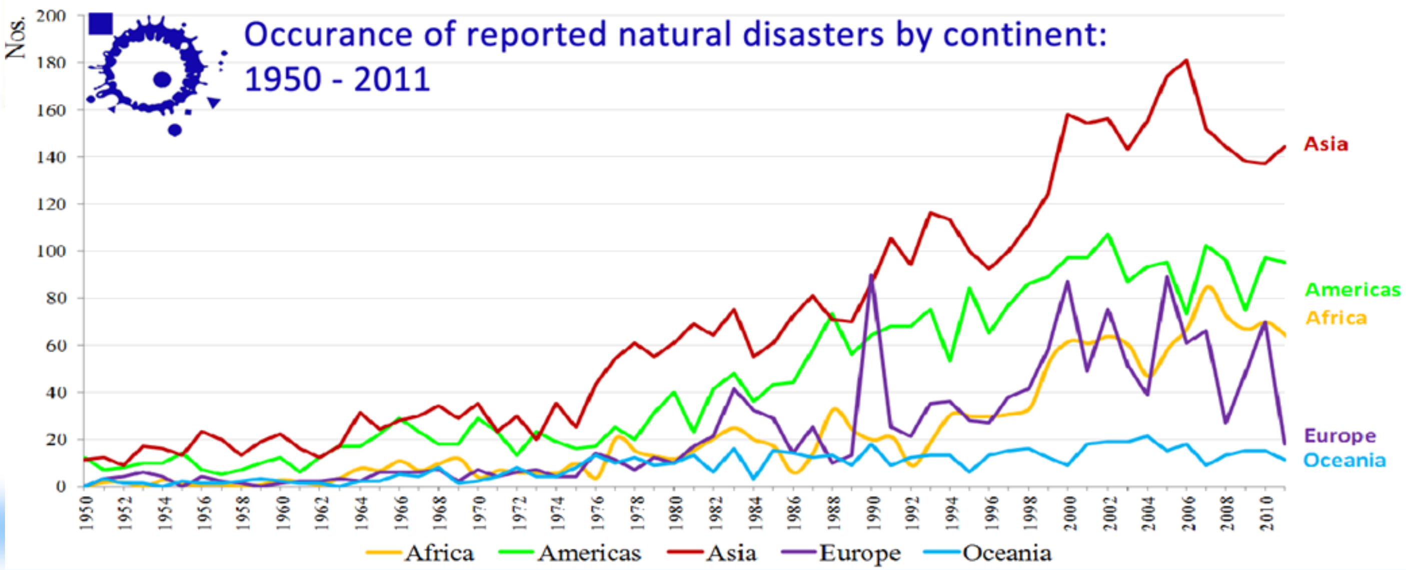
A United Nations study released on Sunday compares data from several types of natural disasters against population and economic trends, highlighting areas with a high risk of death.

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

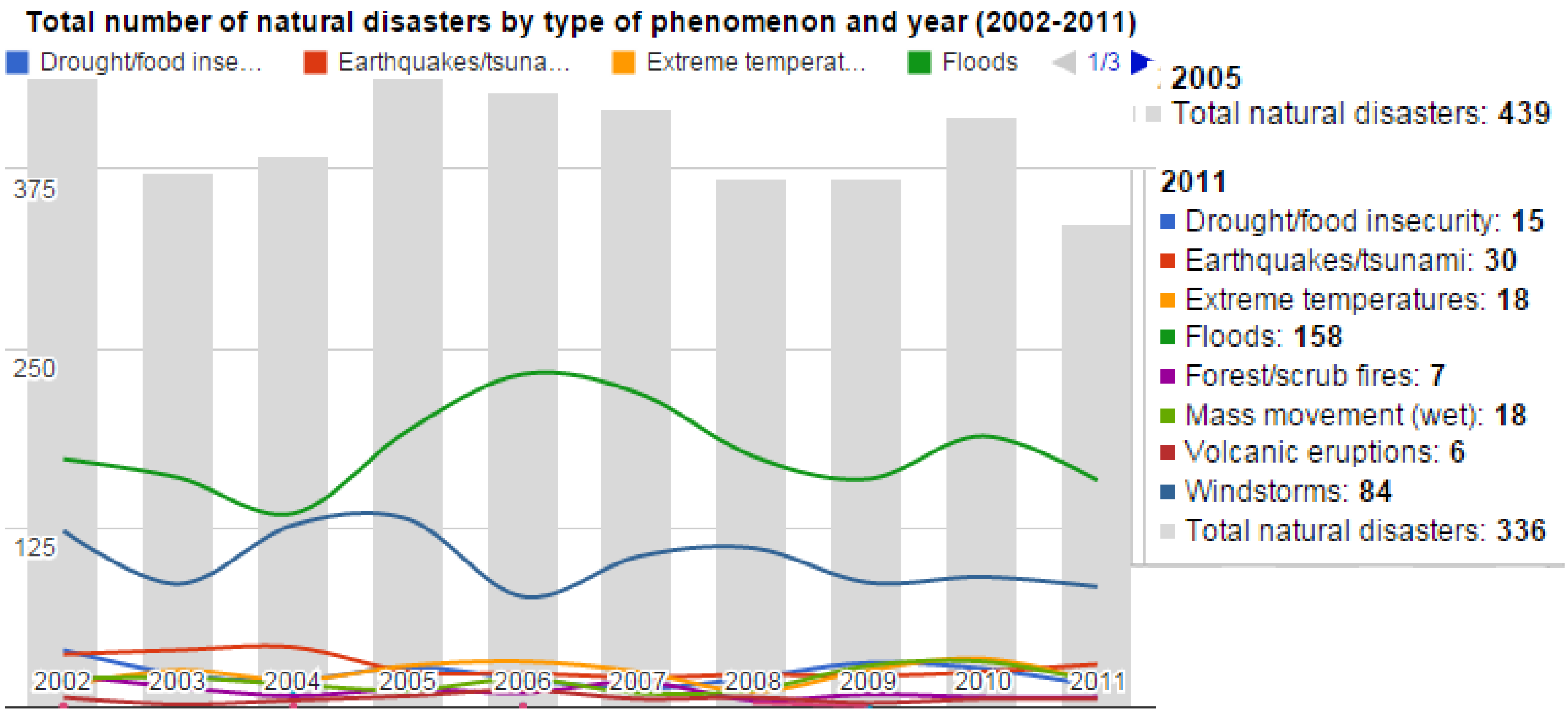
Low High Unknown

*Source: United Nations*





# Empirical Setting




Source from the International Federation of Red Cross Red Crescent Societies

# Sample

Indonesia

- 2003-2014
- 3,073 Firms-Years
- 419 unique firms

Thailand

- 2003-2014
- 4,900 Firms-Years
- 537 unique firms

# Measures

Discretionary accrual

- Jones Model (1991)
- Modified Jones Model (1995)

Real Earnings Management

- Roychowdhury Model (2006)

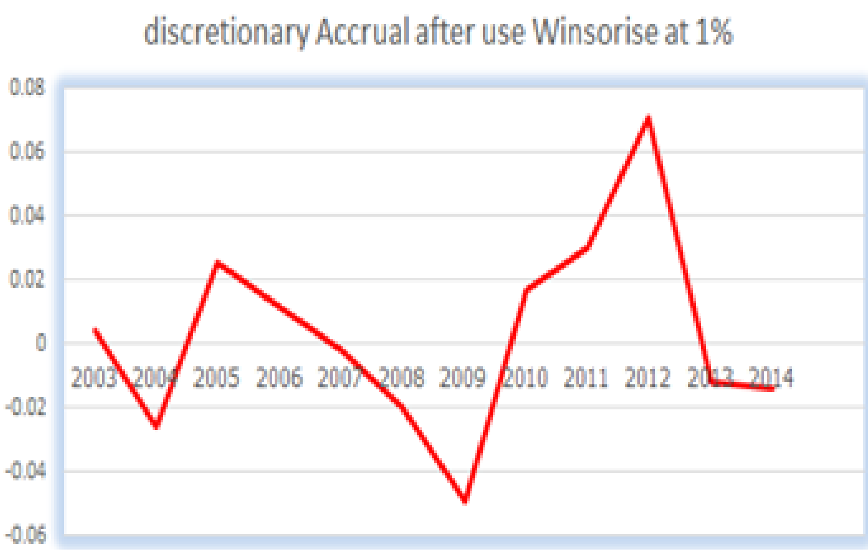
Quality of accruals

- Dechow and Dichev Model (2002)

# Indonesia

**Jones Model**

**Mean DA = 0.006**




**Modified Jones Model**

**Mean DA = -0.001**


*2004: Tsunami*

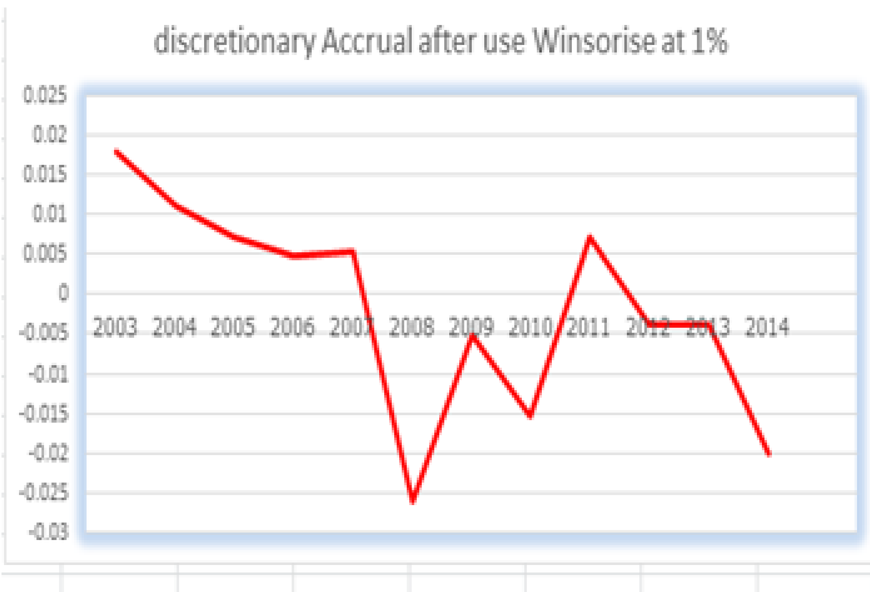
*2008: Credit Crisis*

*2009: Sumatra earthquakes*

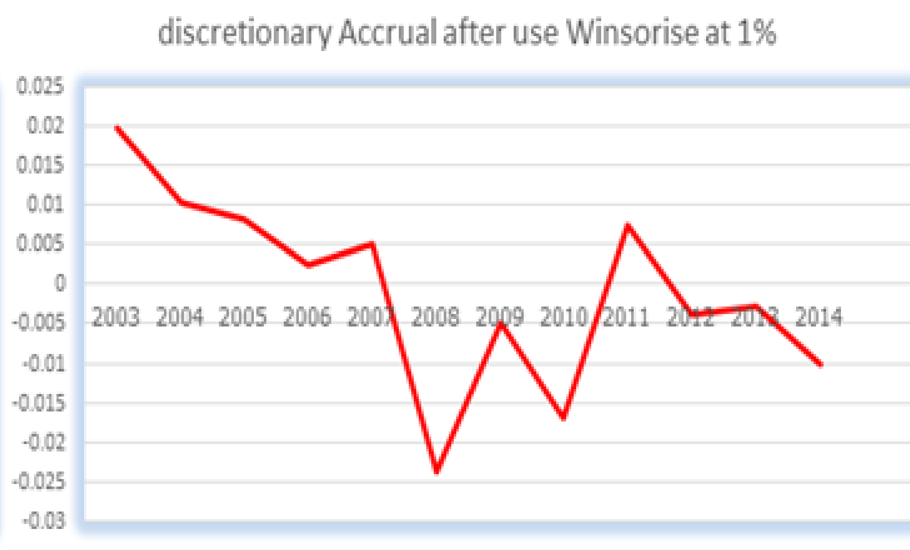
*2013: Flooding as of 15 January*

# Thailand

## Jones Model
## Mean DA = -0.002



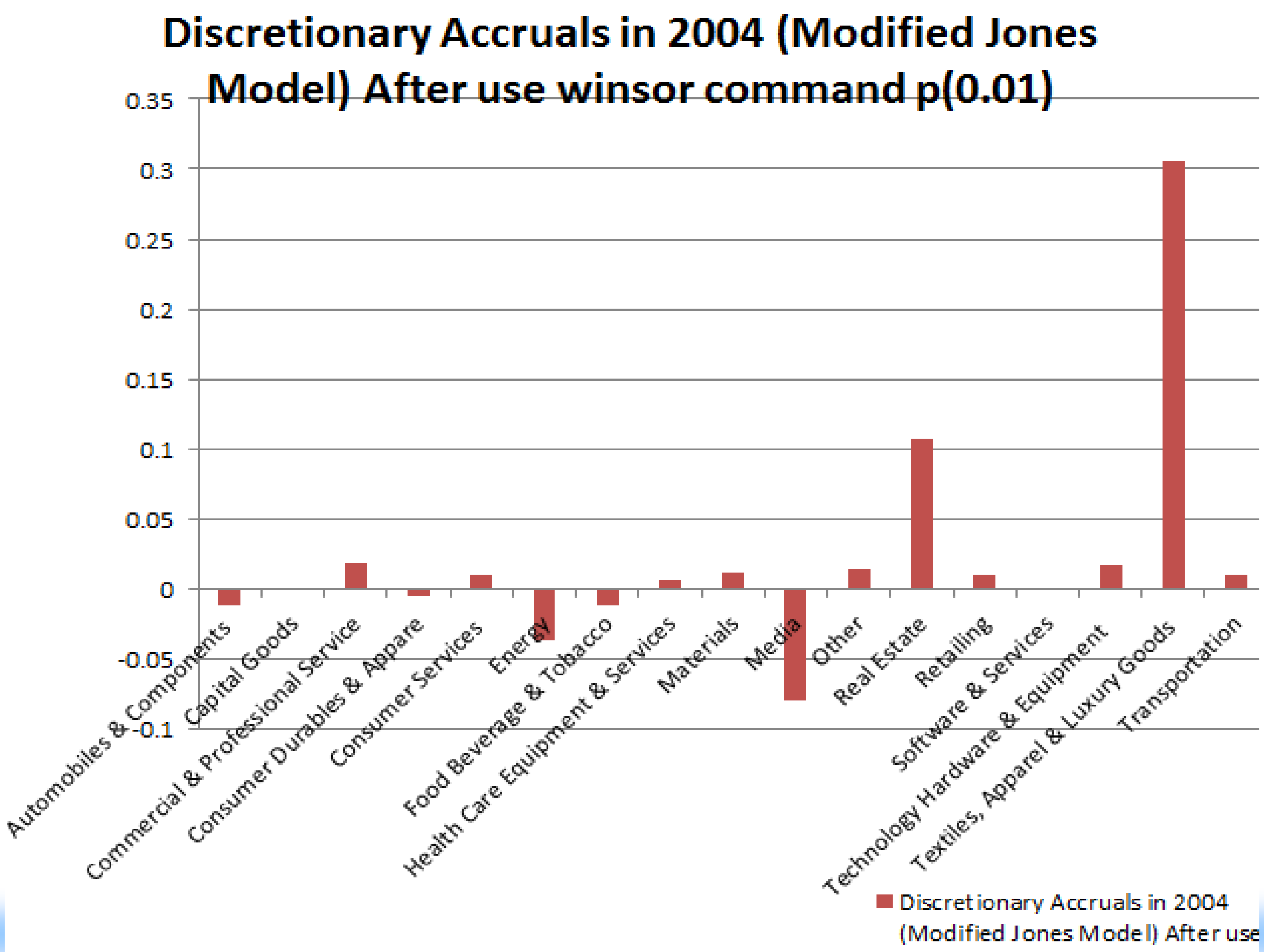

## Modified Jones Model
## Mean DA = -0.001



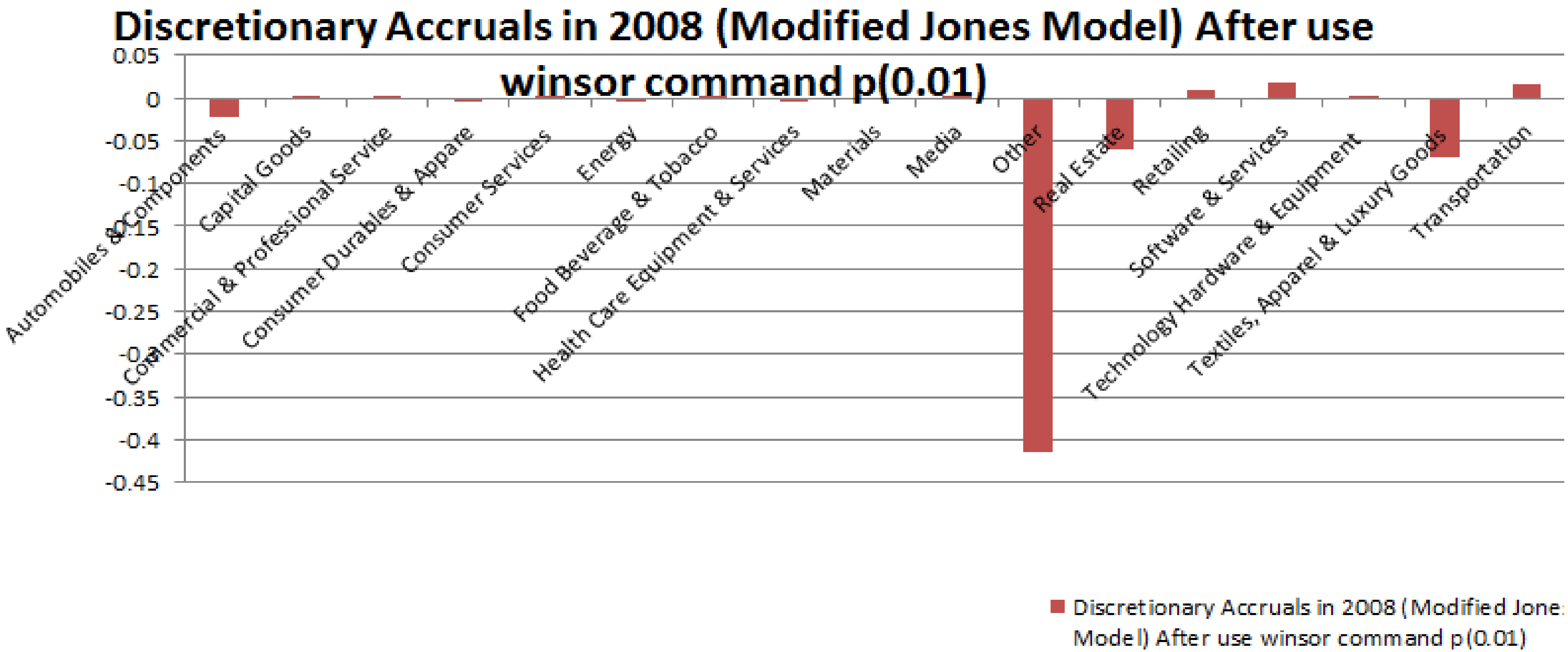

*2004: Tsunami*
*2008: Credit Crisis and Thai political crisis*

*2011: Big Flooding*

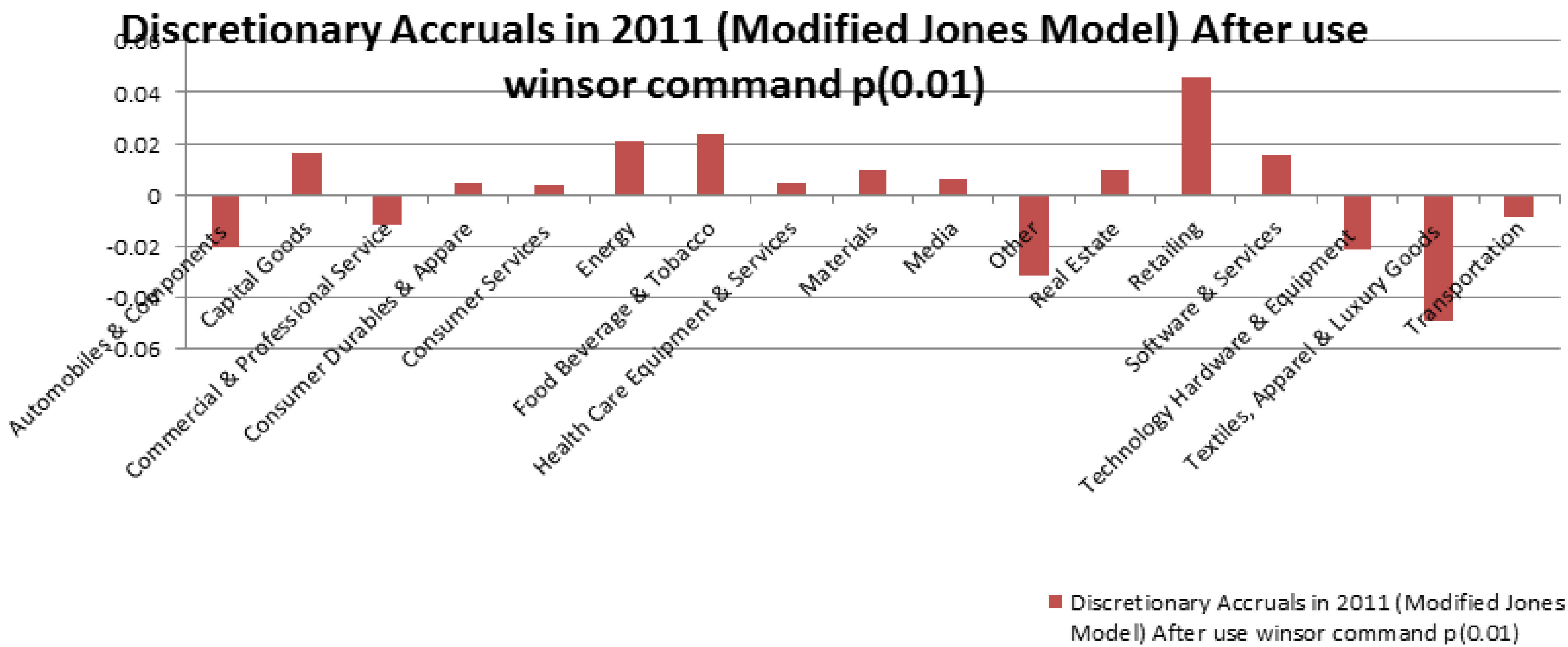
# Classify by industry - Thailand in 2004



# Classify by industry - Thailand in 2008



# Classify by industry - Thailand in 2011



## Thank you for your attention!

## Questions and comments welcome!