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School of Business and Economics

HUMBOLDT-UNIVERSITÄT ZU BERLIN

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Quality of evidence in accounting research

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EAA Annual Conference 2016
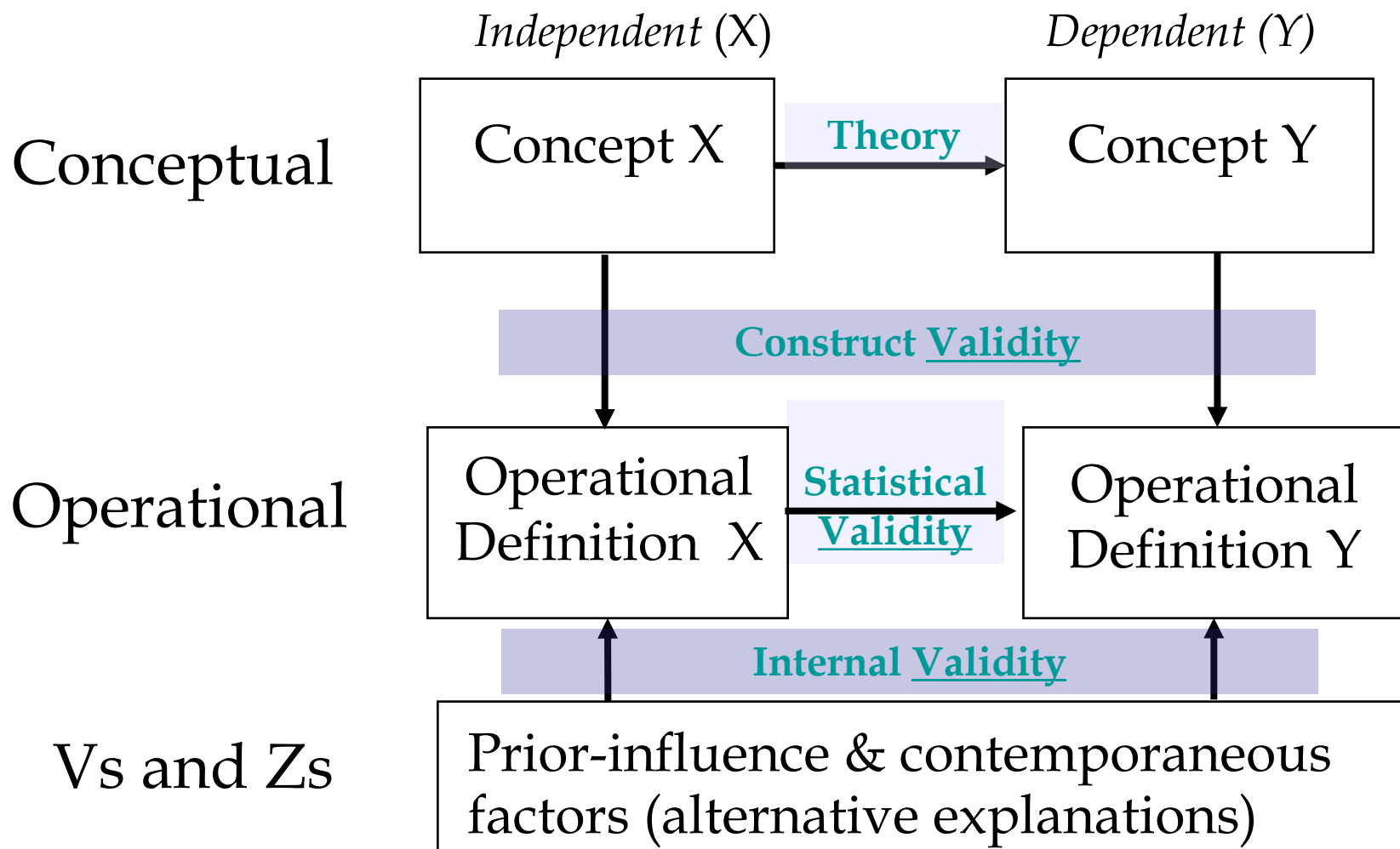PhD Forum
Maastricht

Evidence? What evidence?

„Prior evidence on this issue is mixed...“

Theory and empirics: A supposedly simple question

What do you believe is going on?

Predictive validity framework ("Libby boxes")

Conceptual

Independent (X)   *Dependent (Y)*

Concept X   **Theory**   Concept Y

Construct Validity

Operational

Operational Definition X   **Statistical Validity**   Operational Definition Y

Internal Validity

Vs and Zs

Prior-influence & contemporaneous factors (alternative explanations)

Designing a identification strategy for causal inference

Designing a causal study requires addressing four questions

1. What do you believe is going on? (theory that predicts a causal relationship)

2. What would be a perfect experiment to test your causal prediction (and why is it not feasible)?

3. What is the second-best quasi experiment that, while feasible, deviates as little as possible from the perfect experiment while maintaining a desired level of external validity?

4. How do you adjust your method of statistical inference given the identification strategy presented under #3?

Noisy measures generate noisy estimates...

Economic Construct	Empirical Implementation
Earnings Quality	Abnormal accruals, other earnings attributes
Earnings Management	Discretionary accruals, small loss avoidance
Audit Quality	Discretionary accruals, audit fees, gcao, earnings properties, ...
Conservatism	Basu regression coefficients
Transparency of financial accounting narratives	Fog index
Stock prive informativeness	Inverse R2 of CAPM regressions

Misapplied Libby boxes might be a part of the problem

	Independent (X)		*Dependent* (Y)
Conceptual	Concept X	→ *Theory* →	Concept Y
		Construct Validity	
Operational	Operational Definition X	→ **Statistical Validity** →	Operational Definition Y
		Internal Validity	
Vs and Zs	Prior-influence & contemporaneous factors (alternative explanations)		
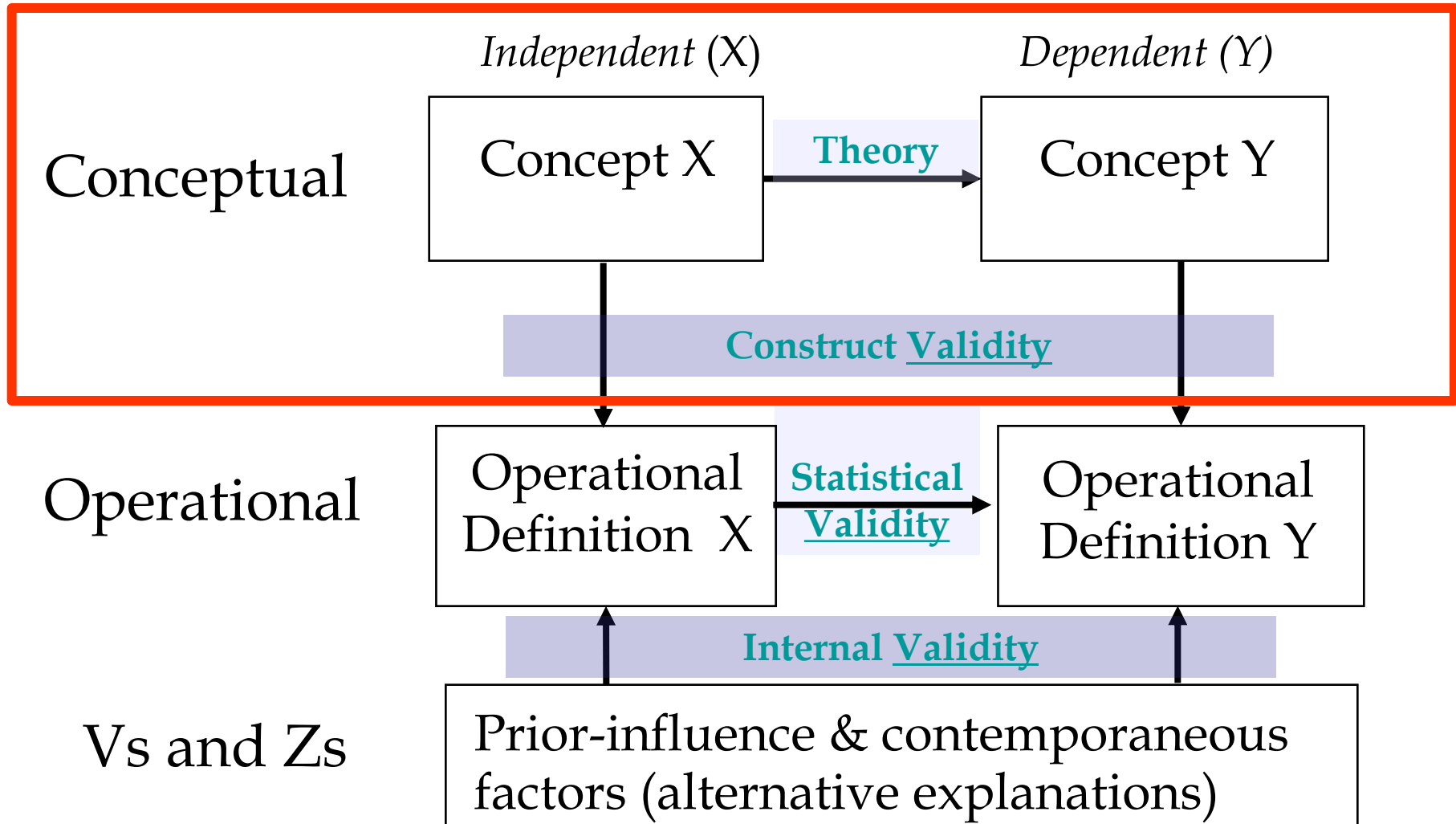
# Estimate test power ex ante experimentation: An example

- Assume you want to do an study on cost of equity capital consequences of financial reporting
  - How large is the change in the financial reporting information environment that you want to study?
  - How large is the relative share of financial reporting relative to the total information environment?
  - How large is the information asymmetry component in the cost of equity capital?
  - What is the empirical distribution of cost of equity capital?
  - How large is your sample and how is it distributed across treatment and control observations?
  - How much of the dependent variable variation is likely to be explained by other covariates?

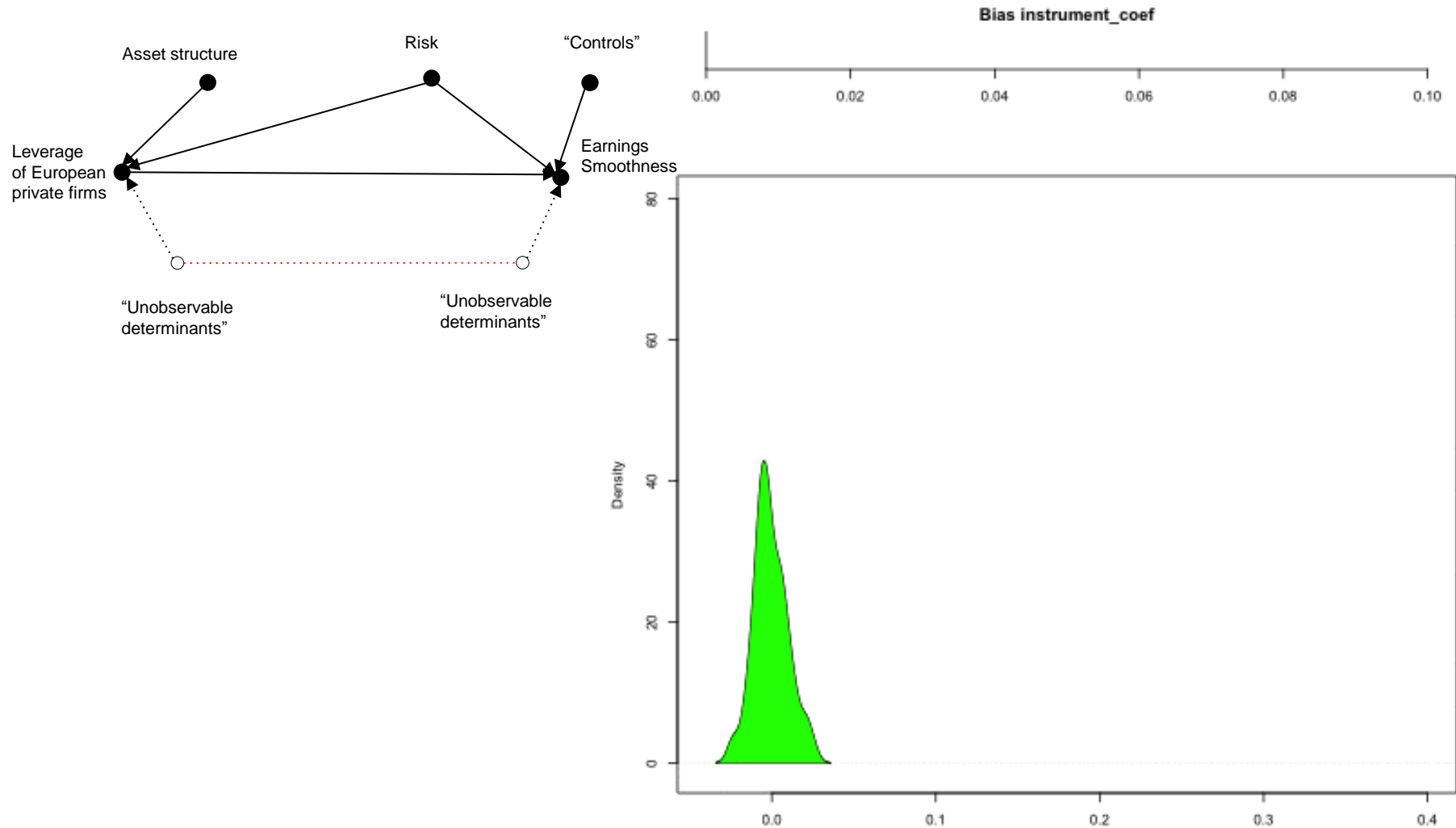# Power simulation
(COEC effect=-7bp, n=25,000)
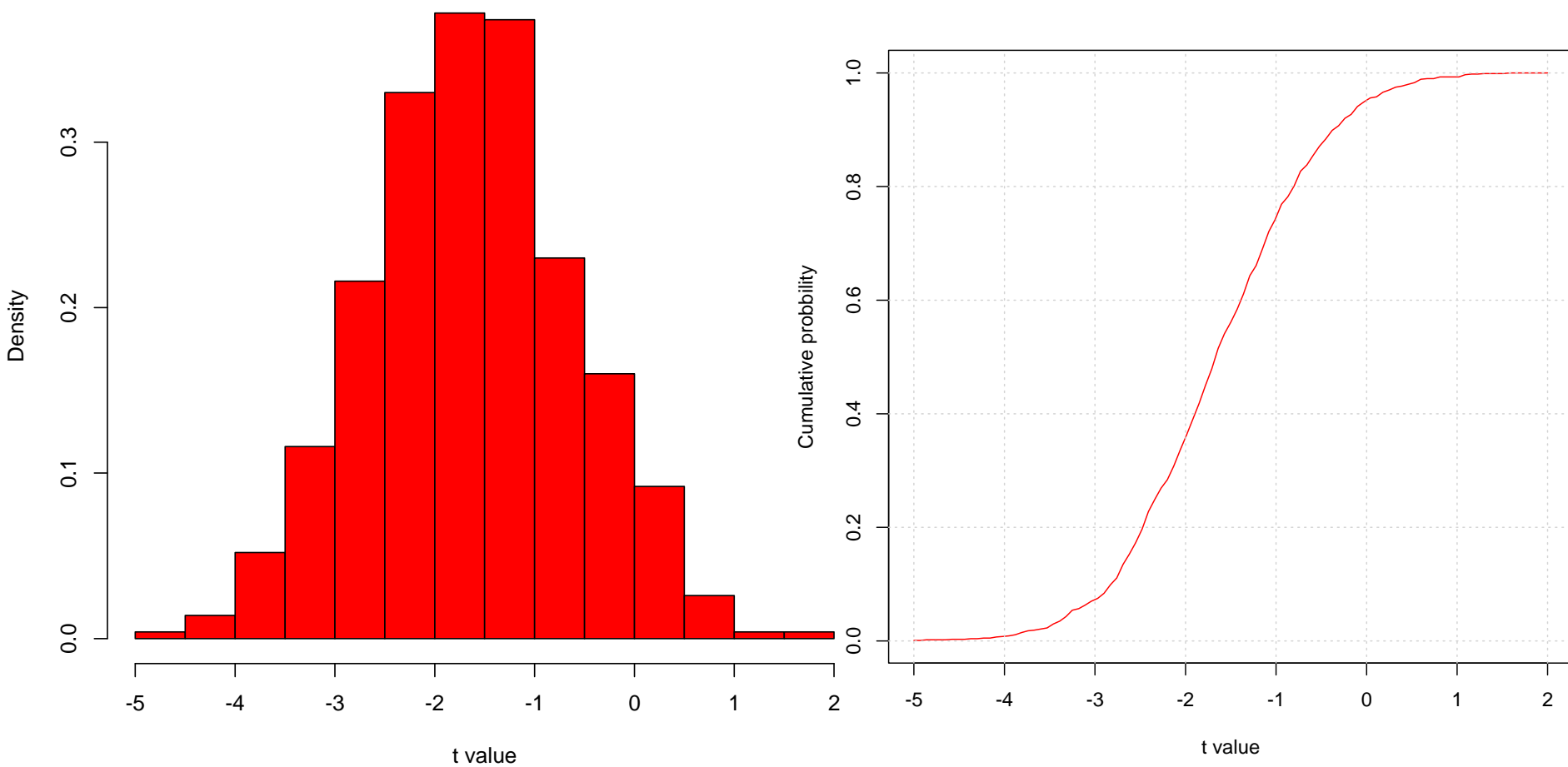
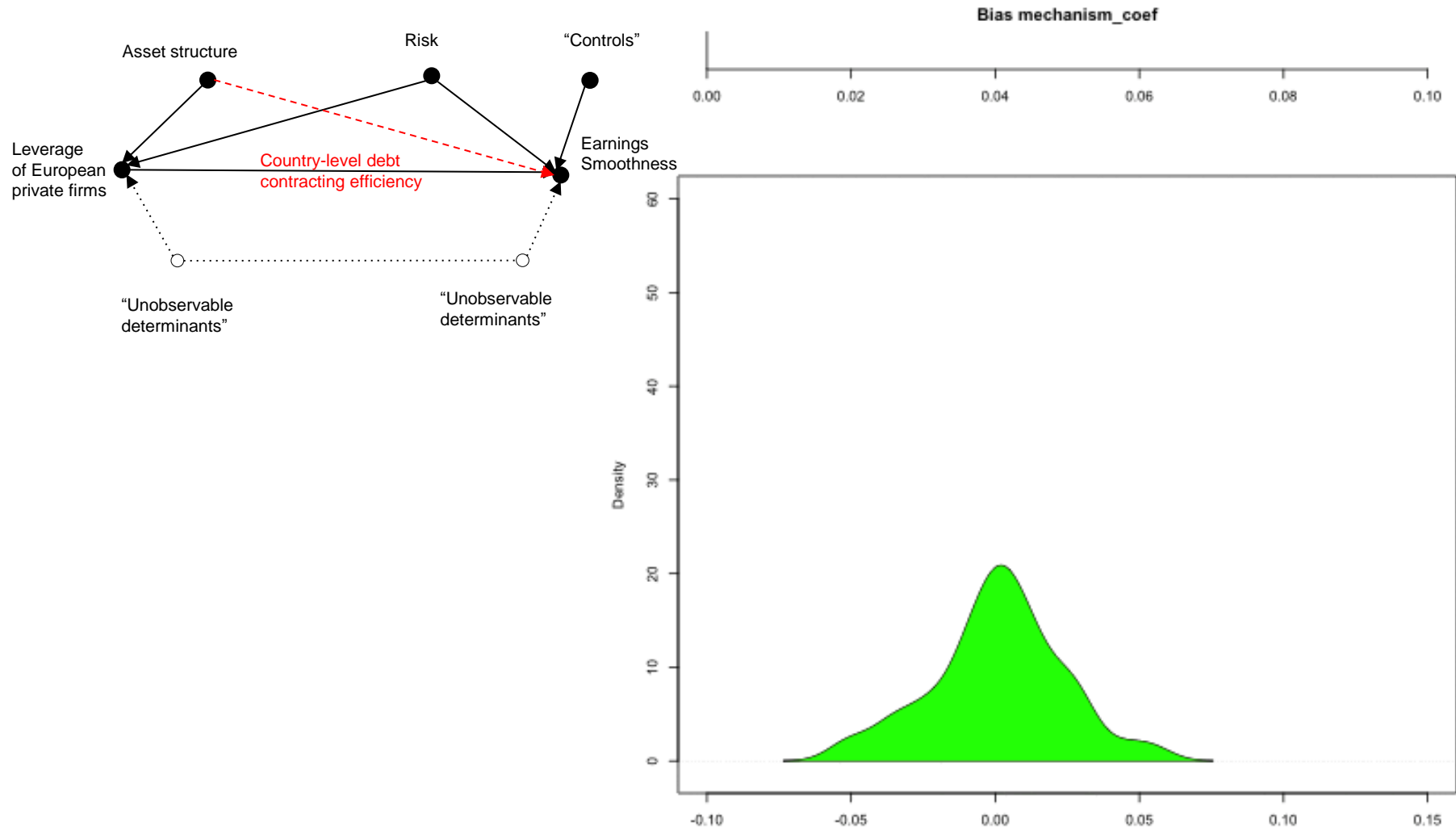# Running simulations to assess your inference strategy
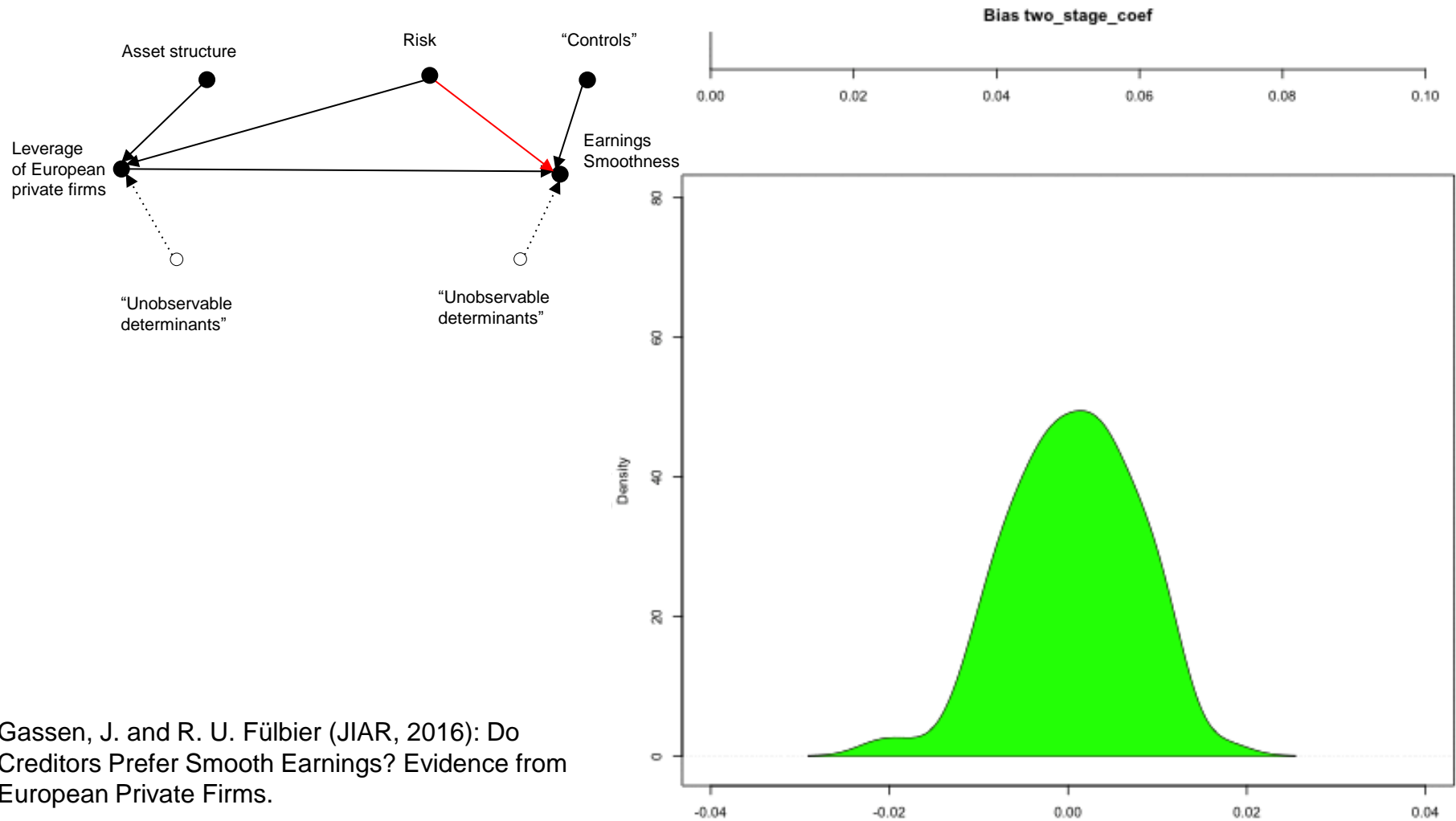
Gassen, J. and R. U. Fülbier (JIAR, 2016): Do Creditors Prefer Smooth Earnings? Evidence from European Private Firms.

Running simulations to assess your inference strategy

Running simulations to assess your inference strategy

Some suggestions for producing "sound evidence"

- Use theory as the fundament for your identification strategy

- Develop a test design that addresses potential endogeneity issues and make the identifying assumptions explicit

- When choosing your empirical constructs: Think about measurement error and adjust your theory and/or test design accordingly

- Estimate your predicted effect size based on theory before taking your design to the data

- Use simulations to test the applicability of your design

- And...

Joachim Gassen / Frank Moers

... please: Let the evidence speak for itself
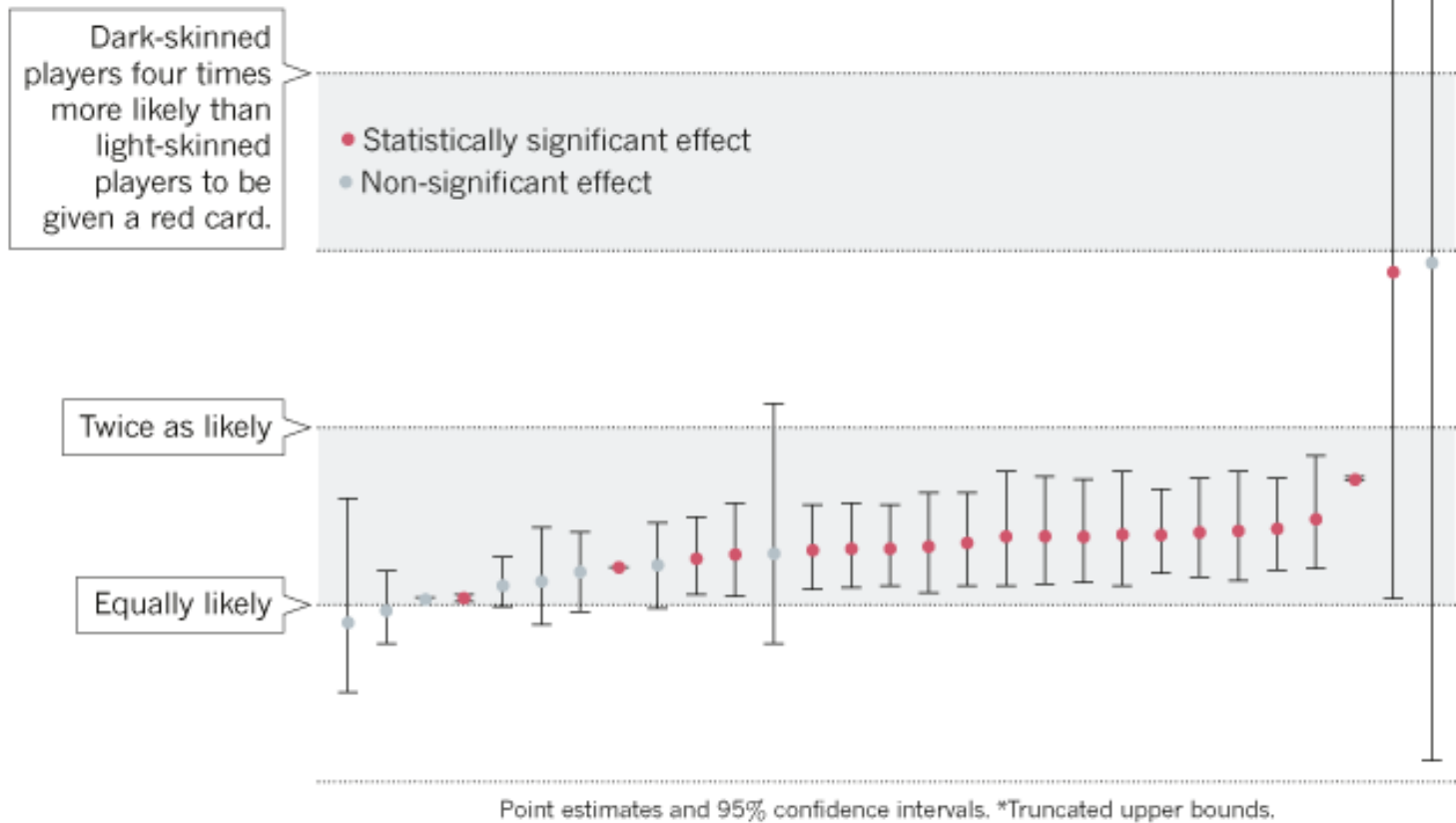
economisting (e kon'o mist'ing) 1. The act or process of converting limited evidence into grand claims by means of punning, multiplicity of meaning, and over-reaching. 2. The belief or practice that empirical evidence can only confirm and never disconfirm a favored theory. 3. Conclusions that are theory-driven, not evidence-based. See also *confirmation bias, painting with a broad brush, Iraqi weapons of mass destruction, marketing, post-modern critical theory, German meaning of "mist"*.

Tufte (2006, 149)

An idea for moving on: Crowdsourced research

ONE DATA SET, MANY ANALYSTS

Twenty-nine research teams reached a wide variety of conclusions using different methods on the same data set to answer the same question (about football players' skin colour and red cards).

Dark-skinned players four times more likely than light-skinned players to be given a red card.

● Statistically significant effect
● Non-significant effect

78.7*
11.5*

Twice as likely

Equally likely

Point estimates and 95% confidence intervals. *Truncated upper bounds.

http://www.nature.com/news/crowdsourced-research-many-hands-make-tight-work-1.18508

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