

Understanding the relationship between firms' ESG performance and financial performance

Webinar

Prof. Dr. Thomas Günther, Technische Universität Dresden, Germany

Agenda

1. Does it pay to be green?
2. Empirical evidence on the CEP – CFP relationship
3. Measurement and form of relationship
4. Results for a non-linear CEP – CFP relationship
5. Conclusions

Underlying research question

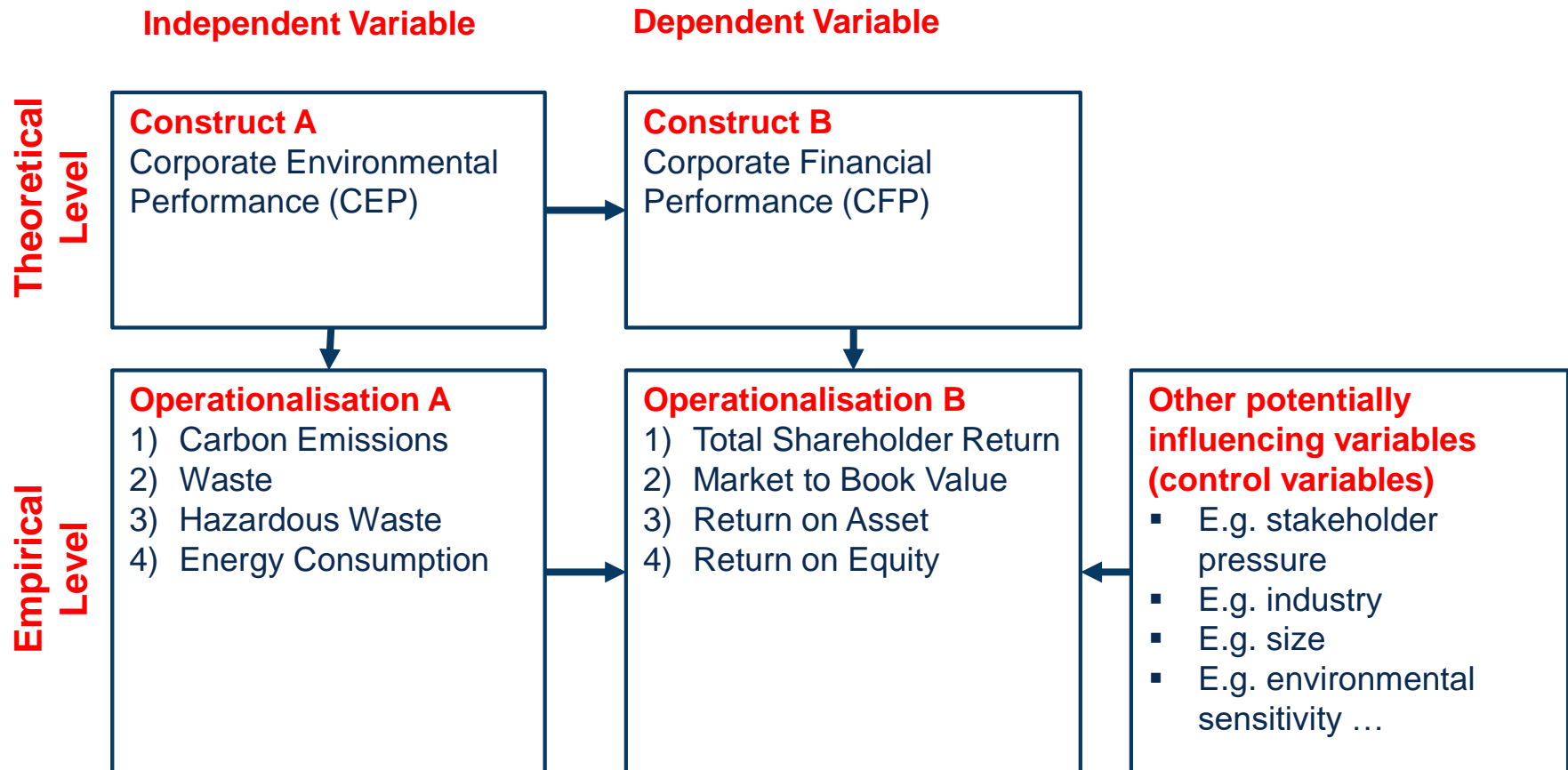
Research question: **Does it pay to be green?**

→ Positive Relationship of **C**orporate **E**nvironmental **P**erformance (**CEP**)
and **C**orporate **F**inancial **P**erformance (**CFP**)

→ More general: **Does it pay to be sustainable?**

Positive Relationship of **E**nvironmental **S**ocial and **G**overnance
Performance (**ESG**) and **C**orporate **F**inancial **P**erformance (**CFP**)

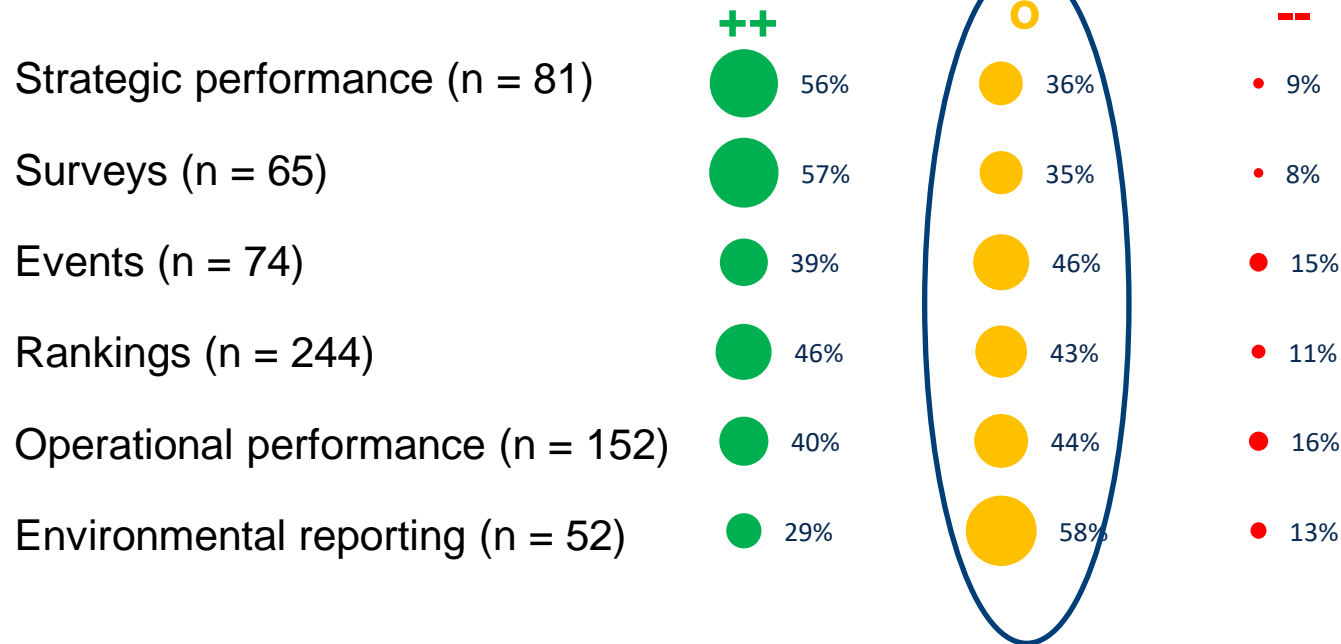
Predictive Validity Framework (Libby Box)



Source: Libby, R., Bloomfield, R., & Nelson, M. (2002). Experimental research in Financial accounting. *Accounting, Organizations and Society*, 27(8), S. 795.

Vote Counting for CEP – CFP relationship

Percentage of studies with positive (++)
negative (--), no significant relationship (o)



➔ Almost no negative relationships

➔ **Either positive or no significant relationship**

Source: Günther, E., Hoppe, H., & Endrikat, J. 2011. Corporate financial performance and corporate environmental performance. A perfect match? Zeitschrift für Umweltpolitik und Umweltrecht, 34(3/2011): 279-296

Meta Analysis for the CEP – CFP relationship (245 studies with N=201,511 observations)

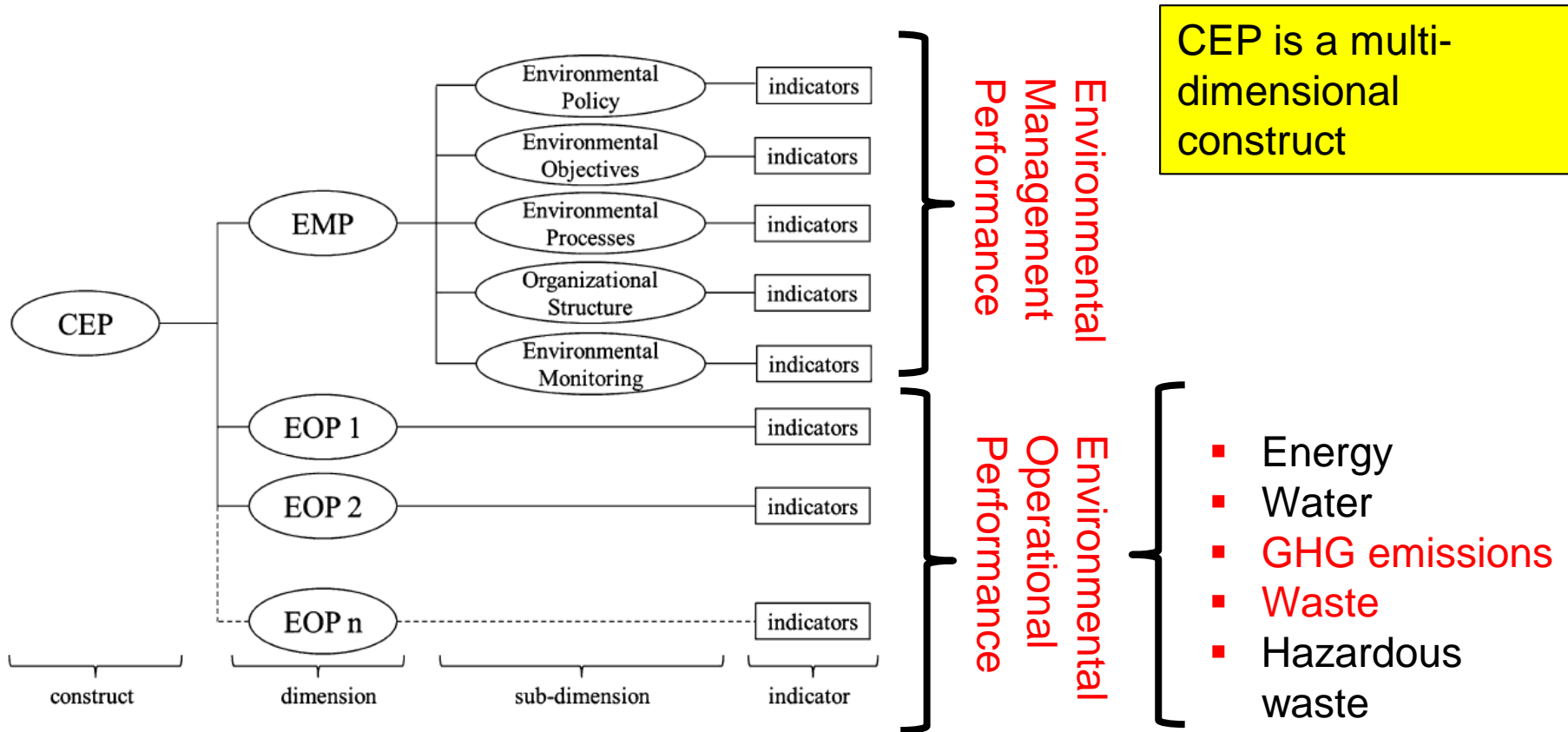
Relationships	k	N	r	k	N	r
Overall CEP → Overall CFP	245	201,511	.102*			
<i>CEP and subsequent CFP</i>		Process-based		Outcome-based		
CEP → CFP _{market}	27	25,350	.007	17	22,789	.096**
CEP → CFP _{accounting}	23	16,970	.085**	20	16,606	.051*
<i>CEP and prior CFP</i>		Process-based		Outcome-based		
CFP _{market} → CEP	4	1,503	.066	5	4,671	.080
CFP _{accounting} → CEP	12	5,716	.124*	8	5,303	.026
<i>CEP and concurrent CFP</i>		Process-based		Outcome-based		
CEP → CFP _{market}	24	28,599	.095**	21	15,200	.167***
CEP → CFP _{accounting}	55	43,215	.130***	29	15,589	.194***
Proactive CEP → CFP	72	54,361	.138***	72	54,361	.138 ***
Reactive CEP → CFP	48	44,170	.072**	48	44,170	.072 **

,k = number of effect sizes, N = total sample size, r = mean product-moment correlation

- ➔ Many studies on the CEP-CFP relationship
- ➔ Overall significant **positive relationship** when statistically aggregated

Source: Endrikat, J., Guenther, E., & Hoppe, H. 2014. Making sense of conflicting empirical findings: A meta-analytic review of the relationship between corporate environmental and financial performance. European Management Journal. Volume 32, Issue 5, October 2014, 735–751

Measurement of CEP



Source: Trumpp, C., Endrikat, J., Zopf, C., & Guenther, E. (2015). Definition, conceptualization, and measurement of corporate environmental performance: A critical examination of a multidimensional construct. *Journal of Business Ethics*, 126(2), 185-204.

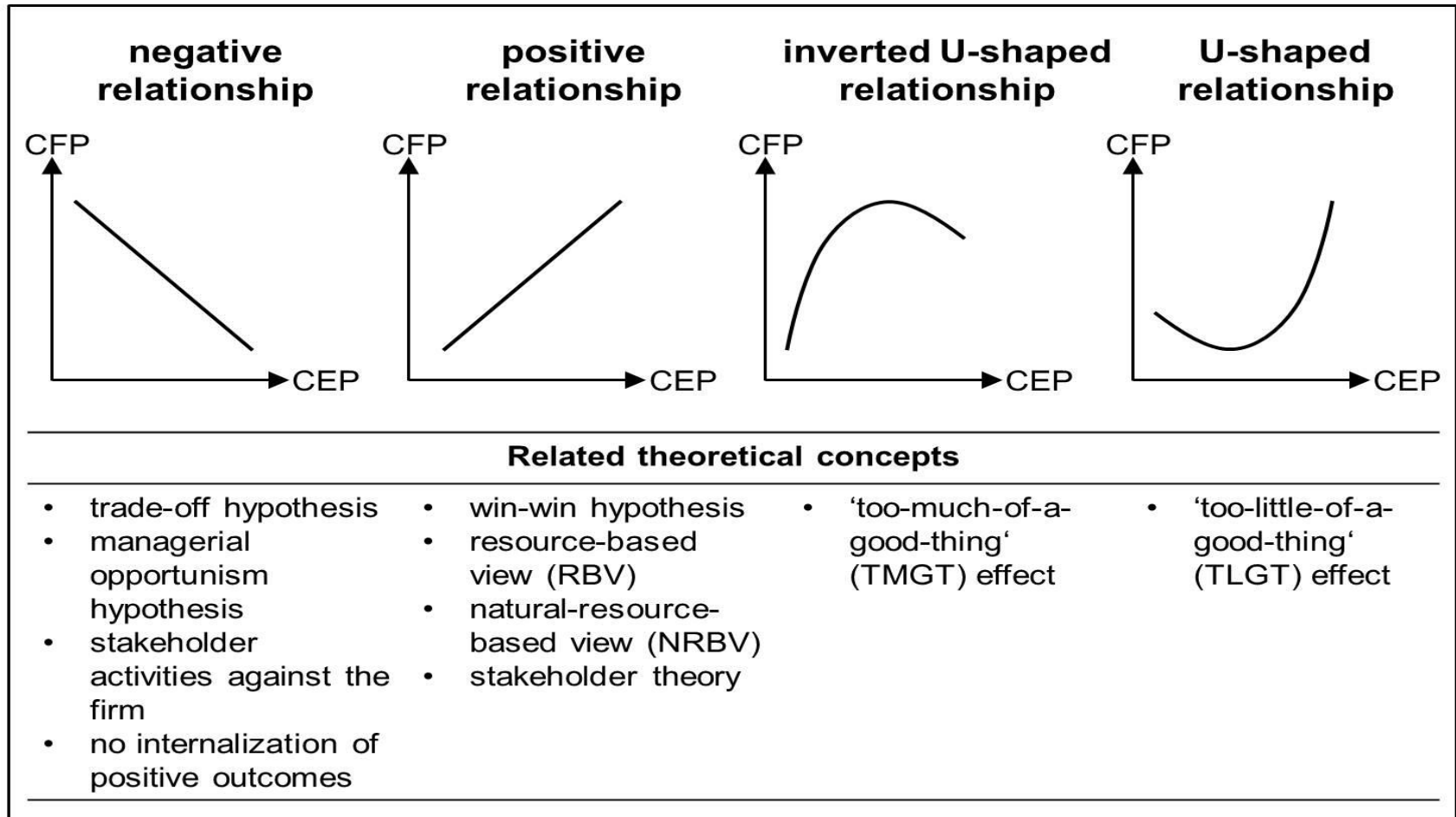
Measurement of CFP

CFP is also a multi-dimensional construct

Variable	Liquidity	Profitability	Growth	Stock Market Performance
	Item reliability (> .40) ^a			
Cash flow return per employee	.648***			
Cash flow return on sales	.692***			
Cash flow return on assets	.692***			
Return per employee		.791***		
Return on sales		.687***		
Return on assets		.748***		
Employment growth			.472***	
Sales growth			.440***	
Assets growth			.638***	
Total shareholder return				.960***
Sharpe ratio				.723***
Jensen's alpha				.695***
Treynor ratio				.777***

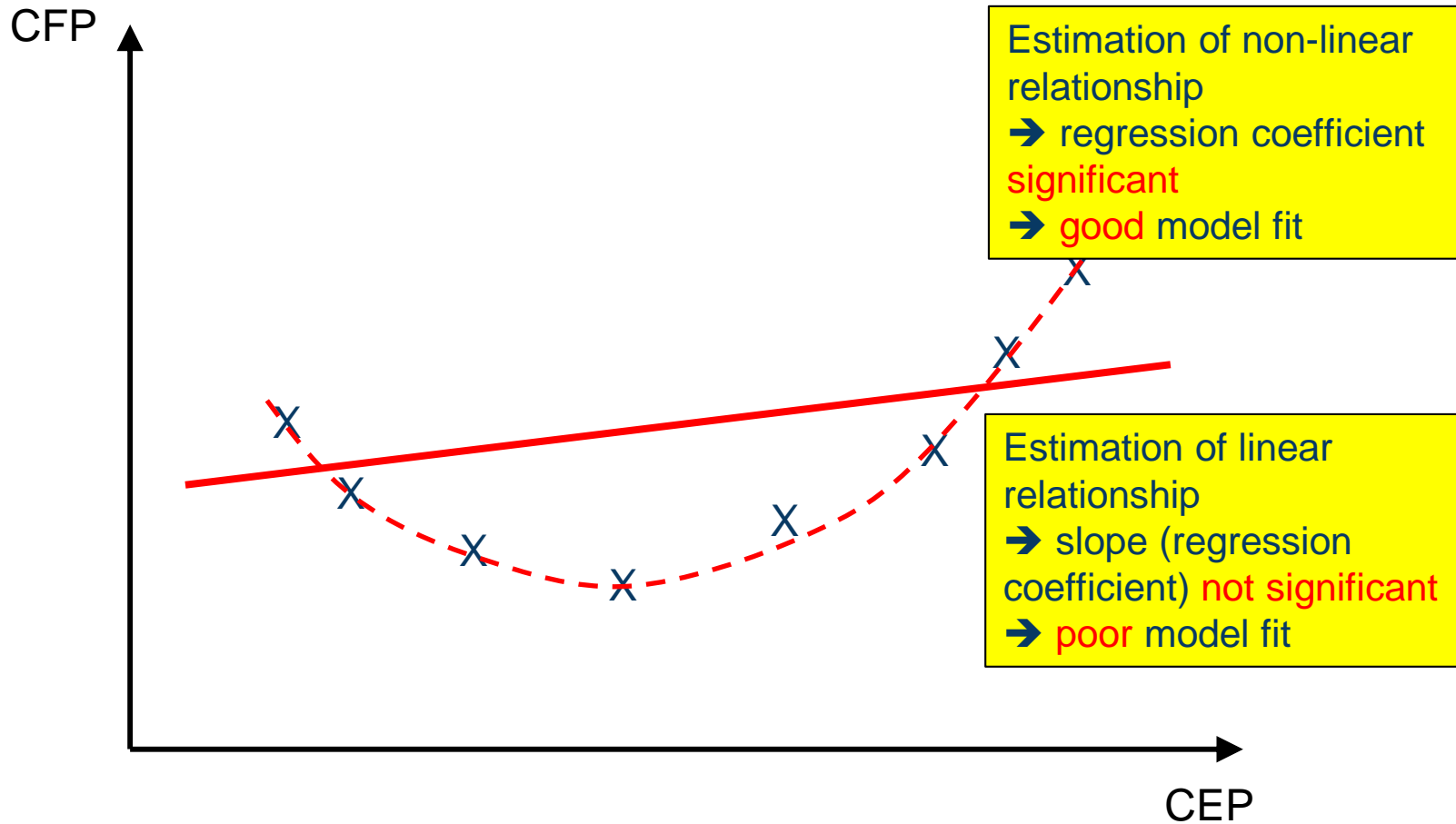
Source: Hamann, P. M., Schiemann, F., Bellora, L., & Guenther, T. W. (2013). Exploring the dimensions of organizational performance: A construct validity study. *Organizational Research Methods*, 16(1), 67-87.

Direction and form of the CEP-CFP relationship



Source: Trumpp, C., & Guenther, T. (2017). Too little or too much? Exploring U-shaped relationships between corporate environmental performance and corporate financial performance. *Business Strategy and the Environment*, 26(1), 49-68.

Linear or Non-linear relationship



Sample selection and methodology

Sample selection:

- International sample from CDP Global 500, S&P 500 or FTSE 350 for 2008 to 2012
- 2361 firm-years in 696 firms, 1182 firm-years from manufacturing industries and 1179 firm-years from service industries
- Thomson Reuters and Asset4 data

Methodology:

- Multivariate panel regression modelling
- Time lag of one to three years for CEP
- Controls for R&D, Capital Intensity, Leverage, Growth, Cash Flow, Size, Legal Origin, Industry, Years

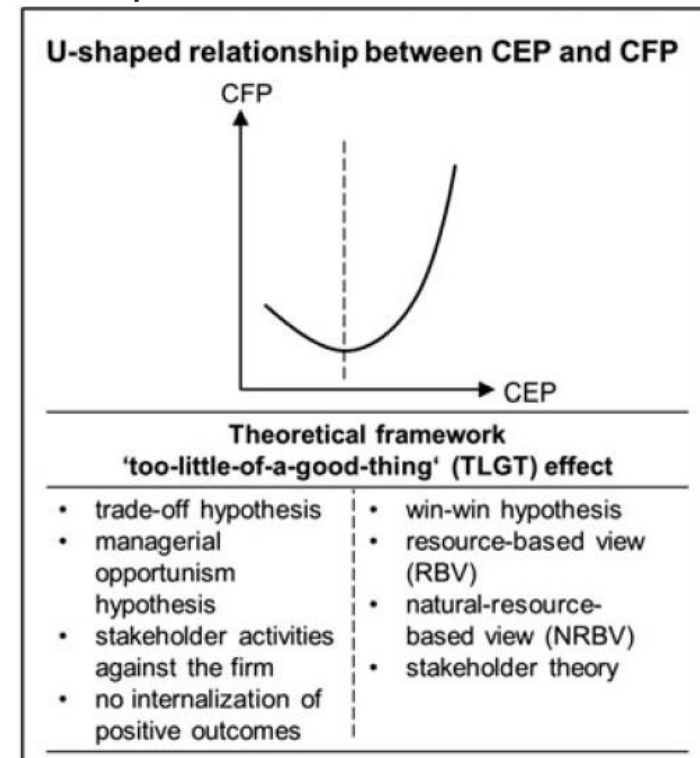
$$\begin{aligned}
 CFP_{it} = & \beta_{1,0} + \beta_{1,1} CEP_{it-n} + \beta_{1,2} (CEP_{it-n})^2 \\
 & + \beta_{1,3} R\&D_{it} + \beta_{1,4} CAPIN_{it} + \beta_{1,5} LEV_{it} + \beta_{1,6} GRO_{it} + \beta_{1,7} CF_{it} \\
 & + \beta_{1,8} SIZE_{it} + \beta_{1,9} LEGOR + INDUSTRY_Controls \\
 & + YEAR_Controls + \varepsilon_1
 \end{aligned}$$

Major findings

- U-shaped relationship of carbon performance with RoA and TSR
- U-shaped relationship of waste intensity with RoA, but not TSR
 - ➔ **Measurement of CFP crucial**

- For service industry, U-shaped relationship of carbon performance and waste intensity with RoA, but not with TSR
 - ➔ **Differences between industries**

- U-shaped relationship with better fit than linear relationship
 - ➔ **Too little of a good thing effect**
 - ➔ **It finally pays when we invest enough**



Source: Trumpp, C., & Guenther, T. (2017). Too little or too much? Exploring U-shaped relationships between corporate environmental performance and corporate financial performance. *Business Strategy and the Environment*, 26(1), 49-68.

Conclusions for research and practice

For research:

- Confirms prior research on **positive relationship of CEP and CFP**
- Extends prior research to **use non-linear (quadratic) models**
 - ➔ **form of relationship is crucial**
 - ➔ **theoretical explanations overlap**
 - ➔ **non-significant findings may be due to inadequate model choice**

For practice:

- trade-off between positive and negative effects of environmental management
 - ➔ **minimum investment required**
 - ➔ **research cannot calculate minimum**
 - ➔ **it pays to be green definitely**
 - ➔ **more interesting: how does it pay to be green?**
 - ➔ **green business models**

Source: Trumpp, C., & Guenther, T. (2017). Too little or too much? Exploring U-shaped relationships between corporate environmental performance and corporate financial performance. *Business Strategy and the Environment*, 26(1), 49-68.