The Effects of Income Transparency on Well–Being

Evidence from a Natural Experiment

Ricardo Perez–Truglia

University of California, Los Angeles

March 6, 2019

Outline

Introduction

- What happens income data becomes more transparent?
  - Relevant for policy–makers (e.g., U.S. Equal Employment Opportunity Commission).
  - Widely discussed in media (e.g., Panama papers, Trump taxes).
- State of the literature: more transparency seems desirable.
  - Help the poor find better jobs (e.g., Card, Mas, Moreti and Saez, 2012; Rege and Solli, 2016).
  - Reduces tax evasion (Bø, Slemrod and Thoresen, 2015; Perez–Truglia and Troiano, 2015).

My Contribution

- Beware: humans are prone to social comparisons.
  - Rich more likely to gain from social comparisons.
  - **Hypothesis: transparency increases happiness–income gradient.**
- Test this hypothesis using Norwegian natural experiment.
  - Incomes became easily accessible online.

Preview of Findings

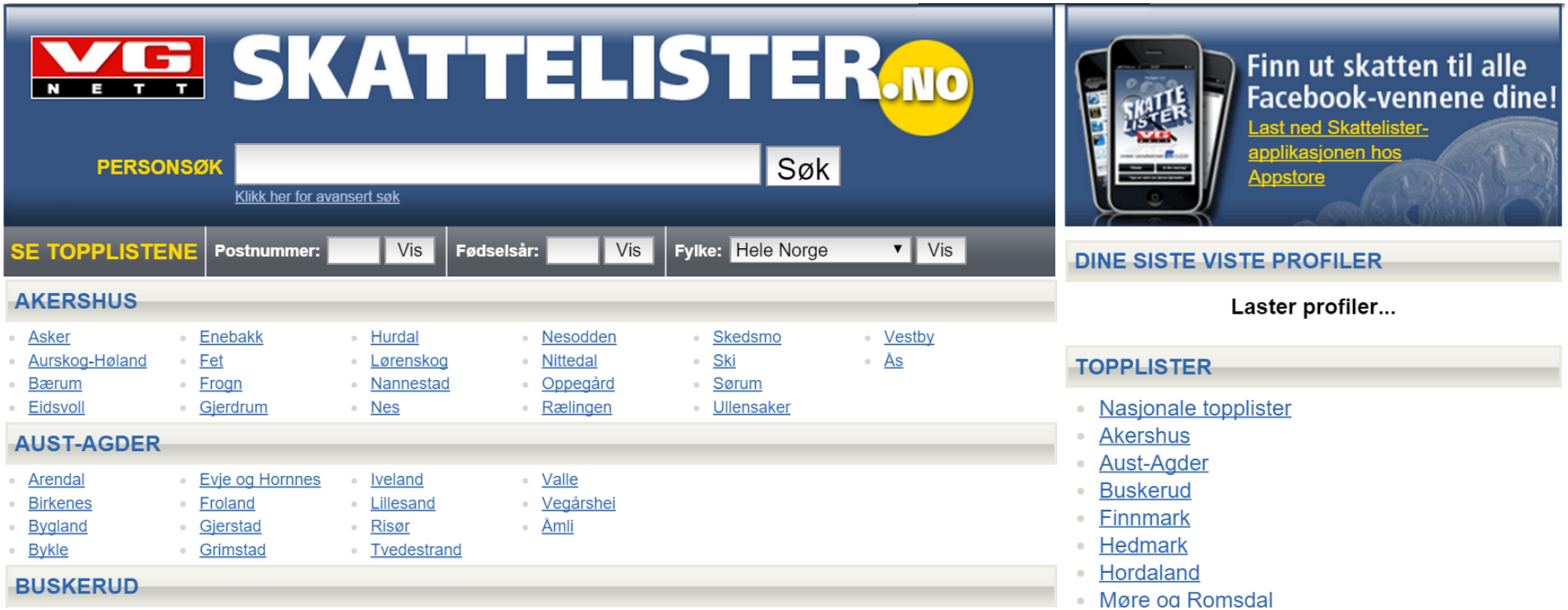
- The Norwegian increase in income transparency caused:
  - A 29% increase in the happiness–income gradient.
  - A 21% increase in the life satisfaction–income gradient.
  - Improved accuracy of self–perceived income rank (by 8.5%).
- Back-of-the-envelope calculation: at least 22% of the effect of income on happiness operates through income comparisons.

Outline

Timeline of Events

- 1800–2001: tax records publicly available but costly to access.
- Fall 2001: unexpectedly, a newspaper publishes tax records online.
  - Instant hit! Followed by every other major newspaper.
- 2001–2013: visibility remained high.
  - Forces towards slightly higher or lower visibility, but nothing major (see paper for details).

Sample Website

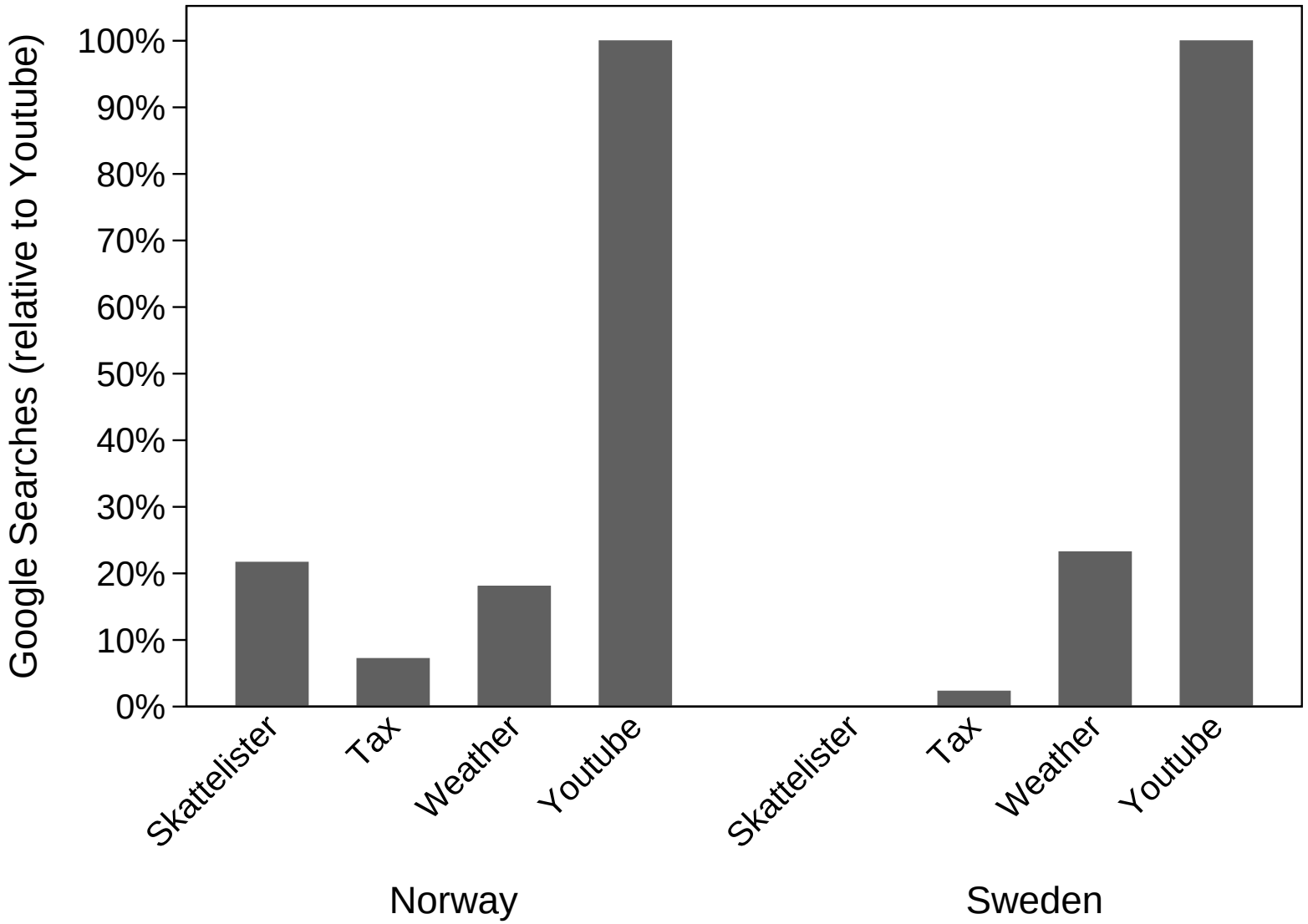


Sample Search Result

Popularity of Search Tool

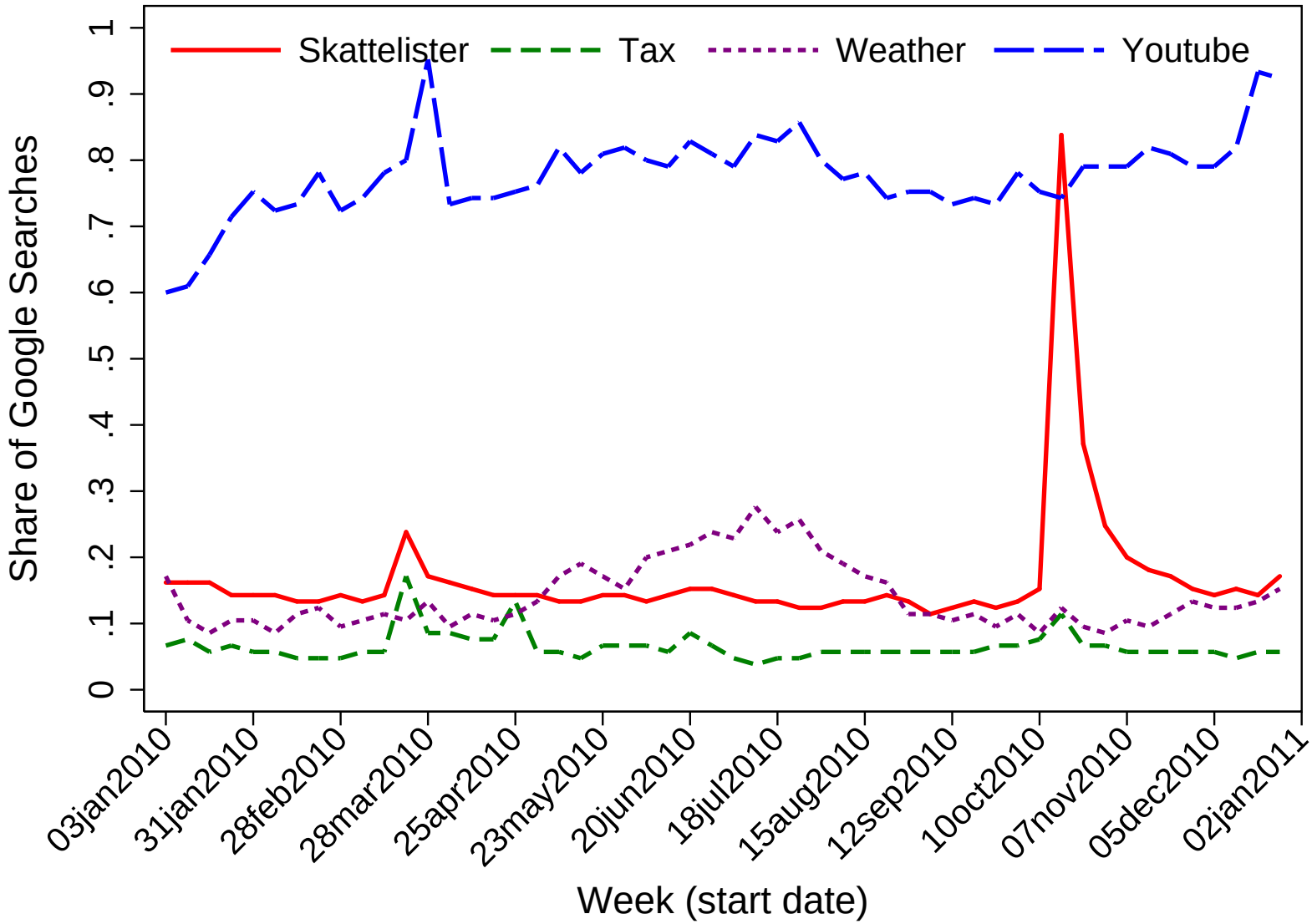
- Since 2001, consistently reported as most popular websites in the country.
  - Media dubbed it "tax porn."
- According to 2007 survey conducted by Synovate, around 40% of Norwegians reported to have used the online search tools (Skatte Betaleren, 2008).
- In 2007, one website reported 29.4 million searches (VG, 2008).
  - Implies 7.5 searches per capita.
  - This is just traffic to ONE website, but there were several websites.

Popularity of Search Tool



Source: Google Trends for 2010.

Popularity of Search Tool

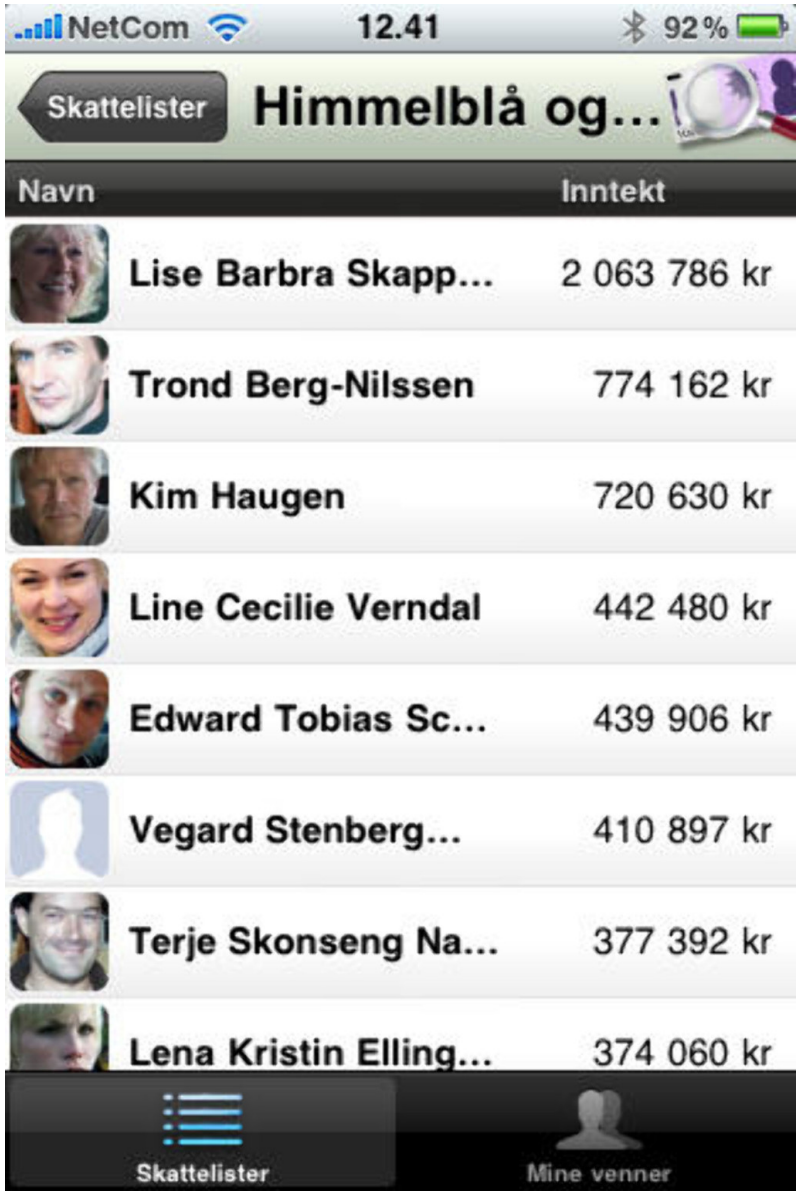


Source: Google Trends for 2010.

Uses of the Search Tool

- What were Norwegians using the tax records for?
- Survey data suggests snooping:
  - 61% reported searching for close relatives, 53% for themselves, 42% for friends, 26% for work colleagues, 25% for other relatives, 23% for neighbors, 18% for celebrities, and 6% for politicians (Skatte Betaleren, 2008).
  - Around 77% of respondents used the tax records for curiosity (Skatte Betaleren, 2008).
  - Only 15% of respondents believed that the tax lists provided useful information (Sunnmørsposten, 2011).
- Patterns also consistent with proprietary Internet browsing data (see paper).

Facebook App



Location App

Uses of the Search Tool

- Best evidence comes from the 2014 policy change.
- Searches stopped being anonymous: any individual could use the same website to identify who searched for their tax records.
- The number of searches dropped by 88% after the removal of anonymity.
- The number of users logging in to the system did not decrease much, but instead of searching for others' incomes, most users logged in to find out who searched for them.
- Consistent with hypothesis that individuals were using the tax records for snooping, and stopped due to the threat of social sanctions.

Outline

Norwegian Monitor Survey

- Collected by market research institute Ipsos MMI.
- Conducted every second year since 1985.
- Representative of Norwegian population (Hellevik, 2015).
- Survey collected during October–November.
  - Tax records are more salient, probably over-estimates effect for rest of the year.

Subjective Well–Being

- Two questions included in survey:
  - **Happiness** (1985–2013): *Will you mostly describe yourself as...? [Very happy; Quite happy; Not particularly happy; Not at all happy].*
  - **Life Satisfaction** (1999–2013): *How satisfied are you with your life? [Very satisfied; Somewhat Satisfied; Neither satisfied nor dissatisfied; Slightly dissatisfied; Very dissatisfied].*
- Happen to be two of the most widely–used questions in well–being literature.

Subjective Well–Being

- What does this question measure?
- Certainly not perfectly (e.g., imperfect test–retest).
- Highly correlated to:
  - More "objective" measures of well–being: e.g., suicide rates (Di Tella, MacCulloch and Oswald, 2003), emotional expressions (Sandvik et al., 1993), brain activity (Urry et al., 2004).
  - Decision utility: e.g., Benjamin et al. (2012), Perez–Truglia (2015).

Other Outcomes of Interest

- **Perceived Rank** (1993–2013): *In comparison to other Norwegians, would you say that your economic situation is...? Much worse than average; Slightly worse than average; Average; Slightly better than average; Much better than average].*
- **Income Adequacy** (1993–2013): *How do you feel about your economic situation? You need more money than you have to be able to live a satisfying life; You manage with your current income; You would be able to cope with less income if you had to.*

Outline

Baseline Specification

- Basic specification:

$$SWB_{i,t} = \alpha_1 \cdot IncomeRank_{i,t} + \alpha_2 \cdot IncomeRank_{i,t} \cdot I_{t \geq 2001} + X_{i,t}\beta + \delta_t + \epsilon_{i,t}$$

- α_1: SWB–income gradient in 1985–2000.
- α_2: absolute change in gradient after 2001.

Baseline Specification

	(1) Happiness
Inc. Rank	0.311***
	(0.028)
Inc. Rank * I{2001-2013}	0.090***
	(0.032)
Inc. Rank * I{2001-2013} * I{Internet}	
Inc. Rank * (Year-1985)	
Inc. Rank * I{1997-2000}	
Country	Norway
Period	85-13
Observations	48,570

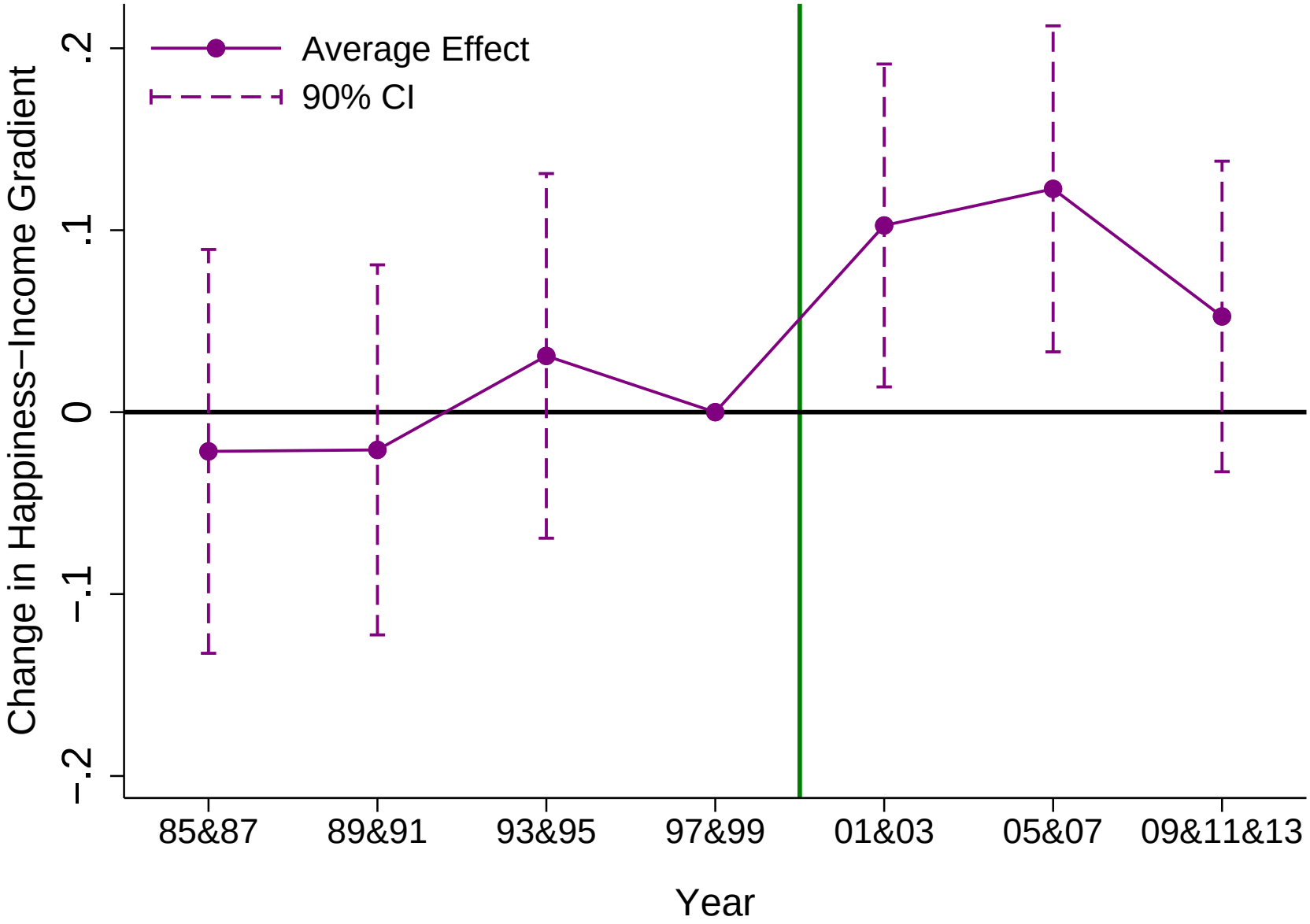
Linear Trend

	(1) Happiness	(2) Happiness
Inc. Rank	0.311***	0.315***
	(0.028)	(0.040)
Inc. Rank * I{2001-2013}	0.090***	0.098*
	(0.032)	(0.059)
Inc. Rank * I{2001-2013} * I{Internet}		
Inc. Rank * (Year-1985)		-0.001
		(0.004)
Inc. Rank * I{1997-2000}		
Country	Norway	Norway
Period	85-13	85-13
Observations	48,570	48,570

Fake Treatment

	(1) Happiness	(2) Happiness	(3) Happiness
Inc. Rank	0.311***	0.315***	0.310***
	(0.028)	(0.040)	(0.032)
Inc. Rank * I{2001-2013}	0.090***	0.098*	0.090**
	(0.032)	(0.059)	(0.037)
Inc. Rank * I{2001-2013} * I{Internet}			
Inc. Rank * (Year-1985)		-0.001	
		(0.004)	
Inc. Rank * I{1997-2000}			0.001
			(0.048)
Country	Norway	Norway	Norway
Period	85-13	85-13	85-13
Observations	48,570	48,570	48,570

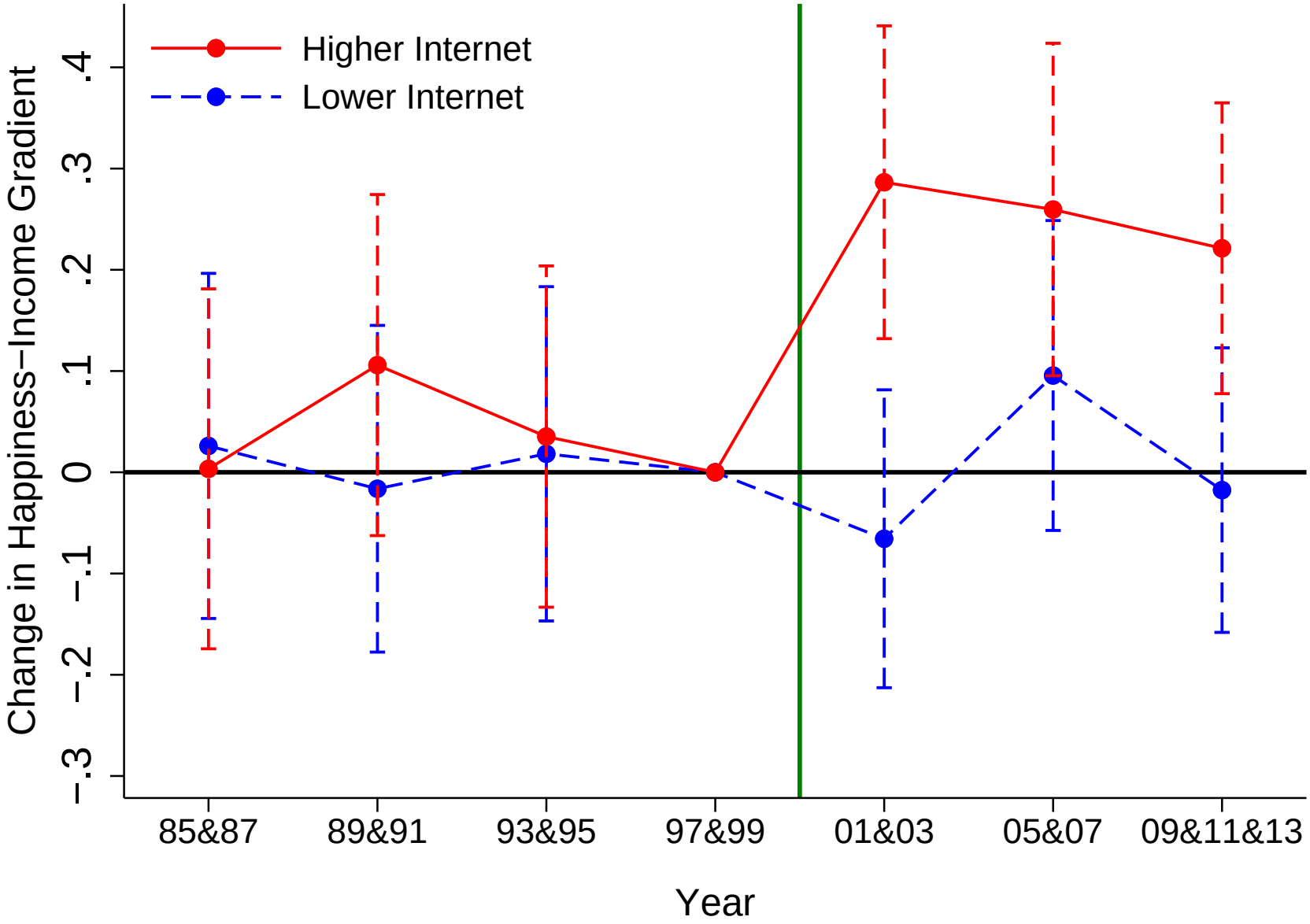
Event–Study Analysis



Triple–Differences

	(1) Happiness	(2) Happiness	(3) Happiness	(4) Happiness
Inc. Rank	0.311***	0.315***	0.310***	0.331***
	(0.028)	(0.040)	(0.032)	(0.040)
Inc. Rank * I{2001-2013}	0.090***	0.098*	0.090**	-0.004
	(0.032)	(0.059)	(0.037)	(0.051)
Inc. Rank * I{2001-2013} * I{Internet}				0.217***
				(0.073)
Inc. Rank * (Year-1985)		-0.001		
		(0.004)		
Inc. Rank * I{1997-2000}			0.001	
			(0.048)	
Country	Norway	Norway	Norway	Norway
Period	85-13	85-13	85-13	85-13
Observations	48,570	48,570	48,570	48,570

Triple–Differences



Robustness: Life Satisfaction

	(1)	(2)
	Happiness	Happiness
Inc. Rank	0.311***	0.331***
	(0.028)	(0.040)
Inc. Rank * I{2001-2013}$^{(i)}$	0.090***	-0.004
	(0.032)	(0.051)
Inc. Rank * I{2001-2013} * I{Internet}		0.217***
		(0.073)
Country	Norway	Norway
Period	85-13	85-13
Observations	48,570	48,570

Robustness: Life Satisfaction

	(1) Happiness	(2) Happiness	(3) Life Satisf.	(4) Life Satisf.
Inc. Rank	0.311***	0.331***	0.585***	0.526***
	(0.028)	(0.040)	(0.056)	(0.085)
Inc. Rank * I{2001-2013}$^{(i)}$	0.090***	-0.004	0.122**	0.050
	(0.032)	(0.051)	(0.055)	(0.088)
Inc. Rank * I{2001-2013} * I{Internet}		0.217***		0.169
		(0.073)		(0.131)
Country	Norway	Norway	Norway	Norway
Period	85-13	85-13	99-13	99-13
Observations	48,570	48,570	29,655	29,655

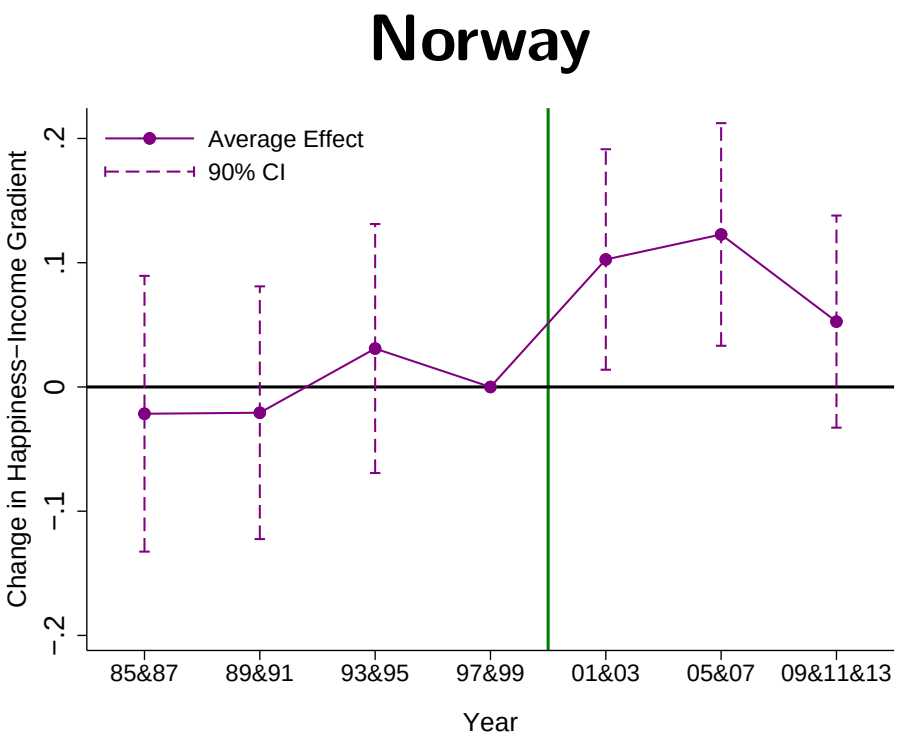
German Placebo

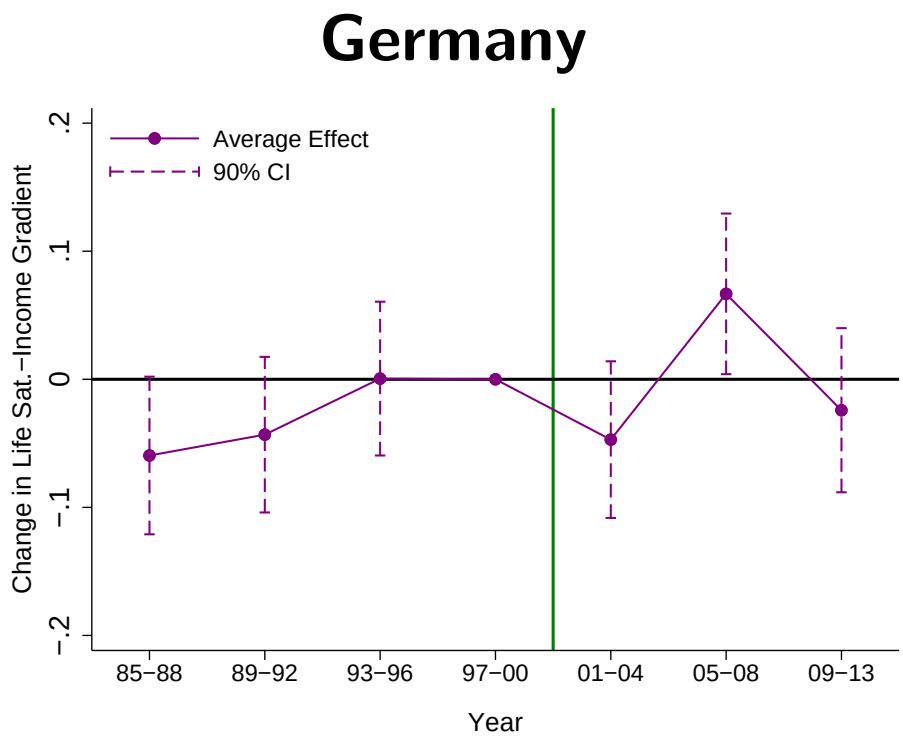
	(1)	(2)
	Happiness	Happiness
Inc. Rank	0.311***	0.331***
	(0.028)	(0.040)
Inc. Rank * I{2001-2013}$^{(i)}$	0.090***	-0.004
	(0.032)	(0.051)
Inc. Rank * I{2001-2013} * I{Internet}		0.217***
		(0.073)
Country	Norway	Norway
Period	85-13	85-13
Observations	48,570	48,570

German Placebo

	(1)	(2)	(3)
	Happiness	Happiness	Life Satisf.
Inc. Rank	0.311***	0.331***	0.496***
	(0.028)	(0.040)	(0.017)
Inc. Rank * I{2001-2013}$^{(i)}$	0.090***	-0.004	0.024
	(0.032)	(0.051)	(0.021)
Inc. Rank * I{2001-2013} * I{Internet}		0.217***	
		(0.073)	
Country	Norway	Norway	Germany
Period	85-13	85-13	85-13
Observations	48,570	48,570	107,906

German Placebo

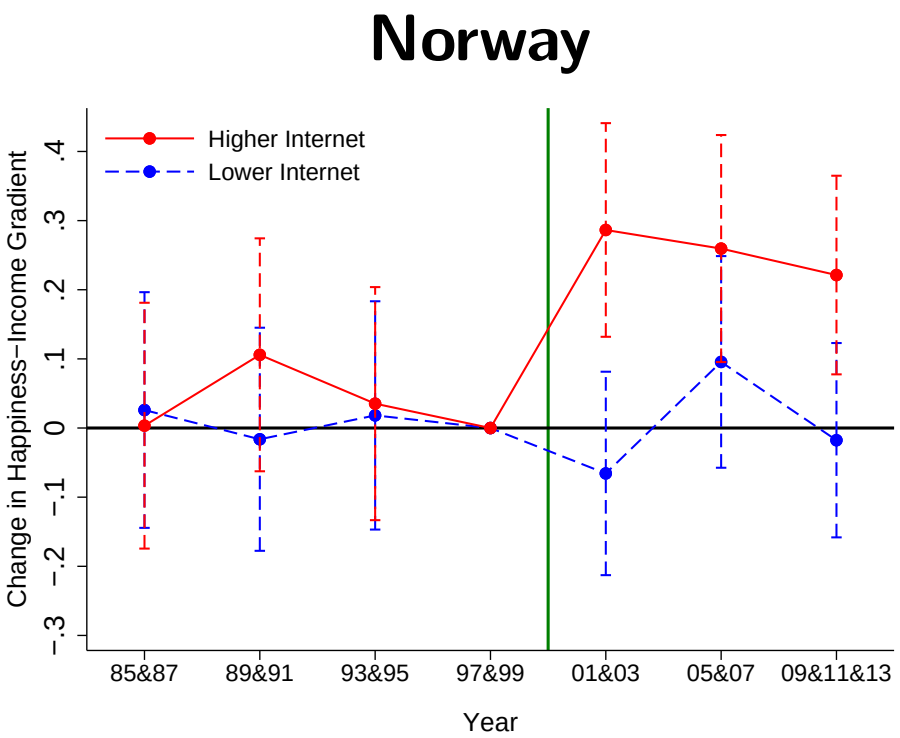


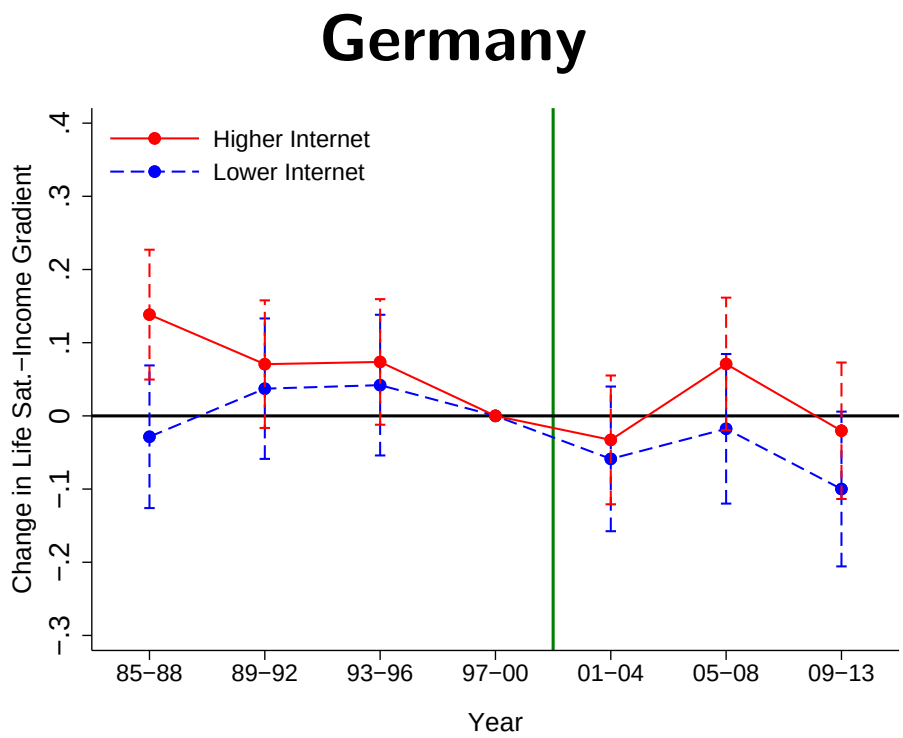


German Placebo

	(1) Happiness	(2) Happiness	(3) Life Satisf.	(4) Life Satisf.
Inc. Rank	0.311***	0.331***	0.496***	0.561***
	(0.028)	(0.040)	(0.017)	(0.024)
Inc. Rank * I{2001-2013}$^{(i)}$	0.090***	-0.004	0.024	-0.052
	(0.032)	(0.051)	(0.021)	(0.034)
Inc. Rank * I{2001-2013} * I{Internet}		0.217***		-0.001
		(0.073)		(0.045)
Country	Norway	Norway	Germany	Germany
Period	85-13	85-13	85-13	85-13
Observations	48,570	48,570	107,906	107,906

German Placebo





Self-Perceptions Channel

	(1)
	Happiness
Income Rank	0.310***
	(0.032)
Income Rank * I{2001-2013}$^{(i)}$	0.090**
	(0.037)
Income Rank * I{1997-2000}$^{(ii)}$	0.001
	(0.048)
Country	Norway
Period	85-13
Observations	48,570

Self-Perceptions Channel

	(1) Happiness	(2) Perc. Rank
Income Rank	0.310***	2.130***
	(0.032)	(0.047)
Income Rank * I{2001-2013}$^{(i)}$	0.090**	0.228***
	(0.037)	(0.047)
Income Rank * I{1997-2000}$^{(ii)}$	0.001	0.069
	(0.048)	(0.055)
Country	Norway	Norway
Period	85-13	93-13
Observations	48,570	38,938

Self-Perceptions Channel

	(1) Happiness	(2) Perc. Rank	(3) Income Adequacy
Income Rank	0.310***	2.130***	1.249***
	(0.032)	(0.047)	(0.050)
Income Rank * I{2001-2013}$^{(i)}$	0.090**	0.228***	0.101**
	(0.037)	(0.047)	(0.050)
Income Rank * I{1997-2000}$^{(ii)}$	0.001	0.069	0.066
	(0.048)	(0.055)	(0.059)
Country	Norway	Norway	Norway
Period	85-13	93-13	93-13
Observations	48,570	38,938	38,950

Back-of-the-Envelope Calculations

- What fraction X of the effect of income on utility comes from income comparisons (vs. intrinsic utility)?
- Assumption 1: entire pre–2001 gradient was due to intrinsic utility.
- Assumption 2: the entire 2001–increase (29%) was due to income comparisons.
- Lower bound for X, post–2001: $\underline{X} = \frac{0.29}{1+0.29} = 22\%$.
  - Consistent with estimates from other studies ($X \in [35\%, 82\%]$).

Outline

Conclusions

- Income transparency redistributed well–being from poor to rich.
  - Consistent with media accounts.
  - Consistent with support/opposition for the policy.
- Policy implications: unintended effects of transparency.
  - Disclosure of sensitive data may have a direct effect on well-being of individuals whose data is being disclosed.
- Broader Implications: income comparisons are important for well-being.