

Sampling the Rich – Results from a Pilot

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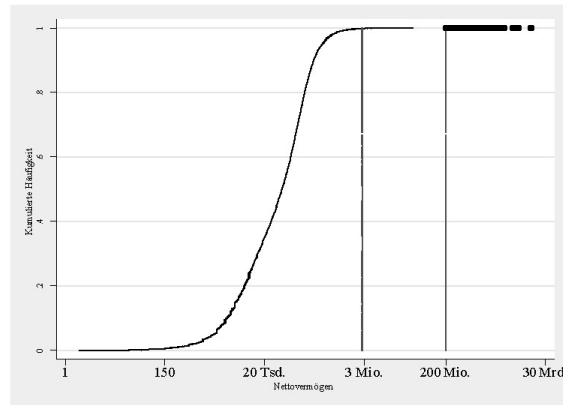


Motivation

Scientific surveys in Germany and many other countries: Top-wealth quantile is unobserved.



Size of the data gap



Note: Net worth in Euro. Solid line: individual net worth (≥ 0) from SOEP 2012; Dots: single persons from top-500 according to Manager-Magazin 2014. Log-scale.

Abbildung: Empirical density of net worth SOEP vs. Manager-Magazin

⇒ Basically no SOEP observations with net worth ≥ 3 Mio. €.

Motivation

⇒ Data gap on levels of wealth at the top, its origins, wealth transmission to next generation, personality traits of the rich, etc.

Aims of the project

Empirical testing of a new sampling design to close the data gap:

- ▶ Pinpoint identification of high-worth individuals.
- ▶ Random sampling of high-worth individuals.
- ▶ Conducting interviews with the standard SOEP questionnaire.

Basic idea of the sampling strategy

Empirical regularity:

- ▶ Vast majority of high-wealth individuals are invested in firms:
According to HFCS, more than 80% of the top 1% percent hold firm shares.
- ⇒ Target population: People with considerable company shares.
 - ⇒ We “only” need names and addresses of shareholders.

Basic working steps

1. Construction of shareholder database

Name	Address	Shareholding in €
Meyer, Rosi	Dorfstr. 3, 4711 Klein	3.000.000
Doller, Dirk	Stadtstr. 8, 8712 Kleckers	1.000.000
.	.	.
.	.	.
.	.	.
Koller, Isa	Seestr. 5, 6712 Dorf	2.000.000

Constructing the shareholder database

Empirical basis: “Orbis” – Company database of Bureau van Dijk (BvD)

- Detailed firm data of about 270 Mio. companies worldwide.
 1. Balance sheets
 2. Names and addresses of shareholder with considerable investments in the firms (“considerable”: $\geq 0.01\%$ of a company’s shares)

Constructing the shareholder database

Transforming the Orbis-*company* in an -*shareholder* database

1. Export of all shareholders resident in Germany invested in at least one firm around the globe.
2. Valuation of their share holdings.
 -) Provided in Orbis: Shareholdings in %.
 -) Required: Value in €
 - ⇒ Proxying the value of shareholdings by turnover (analogously to simplified capitalised earnings method).
3. Cumulating proxy if a shareholder has several investments.
 - ⇒ *Cumulated value of investment*

Constructing the shareholder database

Result: Database with

- ▶ first and second names,
- ▶ addresses, and
- ▶ cumulated values of investments

for about 1.5 Mio. shareholders resident in Germany invested in at least one company around the world.

Basic working steps

2. Stratification according to cumulated value of shareholdings in 5 pretest regions.

Name	Address	Shareholding in €
.	.	low
.	.	low
.	.	low
.	.	intermediate
.	.	intermediate
.	.	intermediate
.	.	high
.	.	high
.	.	high
.	.	high

.	.	low
.	.	low
.	.	low
.	.	intermediate
.	.	intermediate
.	.	intermediate
.	.	high
.	.	high
.	.	high
.	.	high

Basic working steps

3. Interviewing a random stratified sample using SOEP questionnaire (incl. wealth module).

Name	Address	Shareholding in €	Sampled
.	.	niedrig	no
.	.	niedrig	yes
.	.	niedrig	no
.	.	mittel	yes
.	.	mittel	no
.	.	mittel	yes
.	.	hoch	yes
.	.	hoch	yes
.	.	hoch	no
.	.	hoch	yes

.	.	niedrig	no
.	.	niedrig	yes
.	.	niedrig	no
.	.	mittel	yes
.	.	mittel	no
.	.	mittel	yes
.	.	hoch	yes
.	.	hoch	yes
.	.	hoch	no
.	.	hoch	yes

Basic working steps

Field phase of the pretest

- ▶ Stratified random sample of 2.000 shareholders provided to field institute (Kantar Public).
 - ▶ Survey period: Nov. 2017 - Jan. 2018.
 - ▶ Field institute contacted 532 persons and interviewed 124.
⇒ 23% of the contacted persons participated (7% of random sample of 2.000).
 - ▶ Thereafter, field was closed.
- ⇒ Base population in shareholder database should be sufficiently large for large-scale survey.

Requirements for suitability of sampling strategy

3 central requirements:

1. Completeness. Shareholder database should cover (entire) rich population.
⇒ Test: Can we find the rich from Manager-Magazin (MM) in our shareholder database?

Requirements for suitability of sampling strategy

Completeness

► Test procedure

- MM provides names but no addresses of “rich Germans”.
- We identify those people using publicly available data, focusing on MM 2014 Top-100.

Requirements for suitability of sampling strategy

Completeness

All households heads of MM 2014 Top 100 resident in Germany and numerous family members are included in our shareholder database.

Requirements for suitability of sampling strategy

3 central requirements:

1. Completeness. ✓
2. Suitability of cumulated shareholdings for stratification. Does having high shareholdings mean being rich?

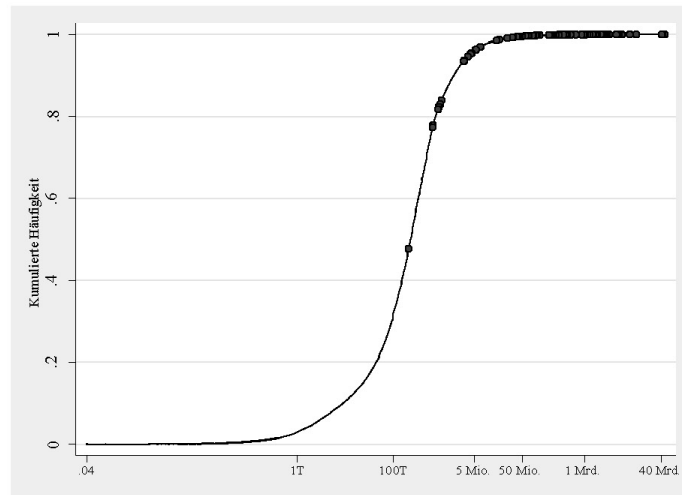
Requirements for suitability of sampling strategy

Suitability of cumulated shareholdings

- ▶ Test procedure
 - ▶ Test: MM-Top-100 should belong to the top percentiles of the distribution of cumulated shareholdings.

Requirements for suitability of sampling strategy

Suitability of cumulated shareholdings
Test: MM-Top-100 persons and families

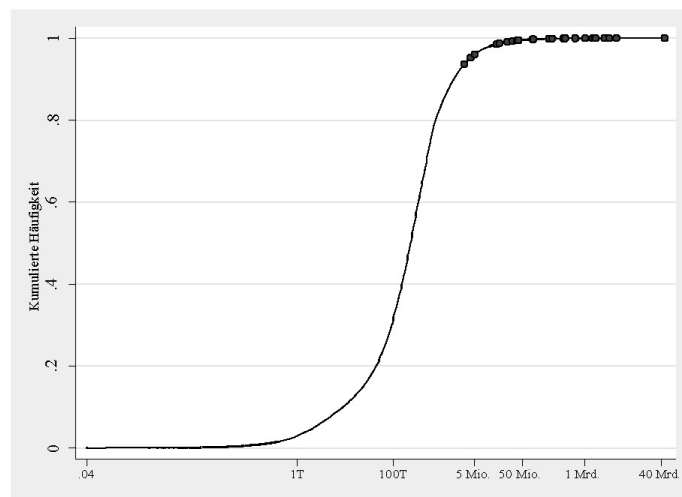


Note: Abscissa. Cumulated shareholdings in Euro (Orbis). Red dots: MM-Top-100.

Navigation icons: back, forward, search, etc.

Requirements for suitability of sampling strategy

Suitability of cumulated shareholdings
Test: MM-Top-100 persons



Anmerkung: Abscissa. Cumulated shareholdings in Euro (Orbis). Red dots: MM-Top-100.

Navigation icons: back, forward, search, etc.

Requirements for suitability of sampling strategy

1. Completeness. ✓
2. Suitability of cumulated shareholdings for stratification. ✓
3. Surveyed net worth should fall in the data gap.



Requirements for suitability of sampling strategy

Individual net worth in Mio. Euro – SOEP vs Pretest.

	SOEP	Pretest			
		Strata 1-3	Stratum 1	Stratum 2	Stratum 3
Mean	0.09	10.3	4.2	3.3	17.4
Percentile					
25	0	0.7	0.5	0.5	1.5
50	0.02	2.3	2	1.1	3.6
75	0.1	6.6	6	3.3	16.2
90	0.2	23.4	10.8	7.6	52.7
95	0.3	42.6	16.8	11.8	89
99	0.8	156.6	19.4	28.9	207
Maximum	39.3	207	19.4	28.9	207
N	25,803	124	23	41	60

Note: Own calculations using SOEP 2012 (weighted) and data from pretest.



Requirements for suitability of sampling strategy

- ⇒ Average net worth ratio pretest to SOEP: 100 : 1.
- ⇒ All pretest percentiles are markedly higher than SOEP percentiles.
- ⇒ Richest pretest respondent reaches lower bound of MM-Top 100.
- ⇒ Wealth for Stratum 3 is far above value for Strata 1 and 2.

Requirements for suitability of sampling strategy

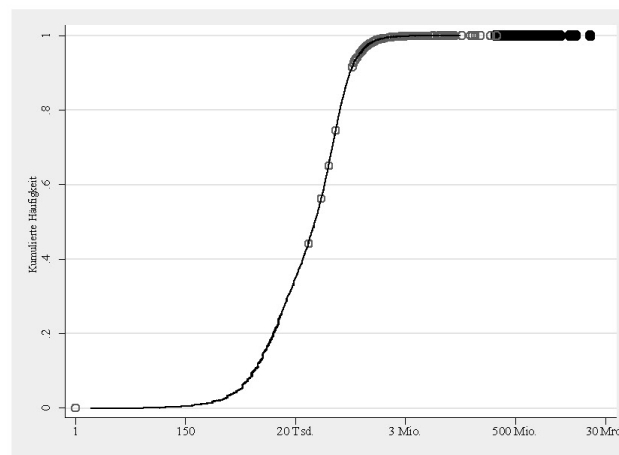


Abbildung: Emp. Verteilung Nettoverm. SOEP, Manager-Magazin, Pretest

Wealth in pretest clumps in and around data gap. Positive signal!

Requirements for suitability of sampling strategy

1. Completeness. ✓
2. Suitability of cumulated shareholdings for stratification. ✓
3. Surveyed net worth should fall in the data gap. ✓



Conclusion

Sampling concept seems to work:

- ▶ Targeted sampling of wealthy people.
- ▶ Randomized sampling allows inference.
- ▶ Contrary to popular belief, rich are willing to participate in surveys.



Appendix - effect of stratum

	I	II	III	IV
Pretest	4.121*** (0.194)		1.652*** (0.187)	
<i>Stratum</i>				
1		4.037*** (0.339)		1.869*** (0.332)
2		3.291*** (0.401)		1.322*** (0.379)
3		4.72*** (0.224)		1.828*** (0.224)
Soziodem	no	yes	no	yes
<i>N</i>	19102	19102	19101	19101
Adj. <i>R</i> ²	0.032	0.033	0.374	0,374

Anmerkungen: Daten aus SOEP v.33 und Pretest

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$