

Precautionary savings and self-selection: Evidence from the German reunification "experiment"

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Paper objective

- 1 **Test the precautionary savings theory.**
- 2 Show the importance of the **self-selection bias**.
 - ▶ ex: high-risk averse HH \rightarrow low-risk occ. \rightarrow lower precautionary motive



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- risk-aversion is unobserved.
- Difficult to find labor income risk measure.
- Identification problem: need high variability in labor income risk.



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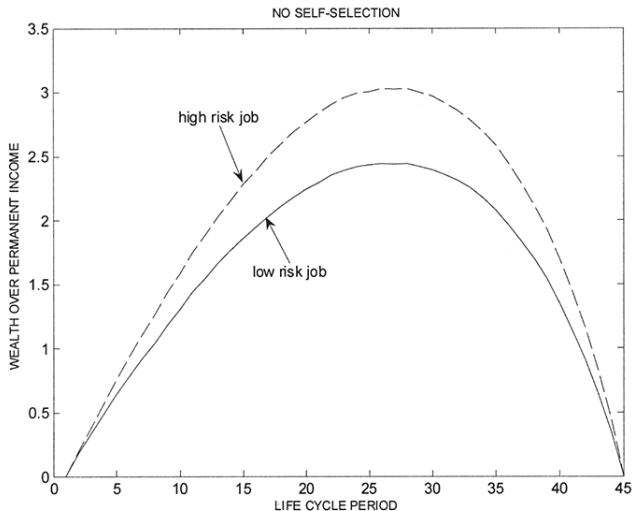
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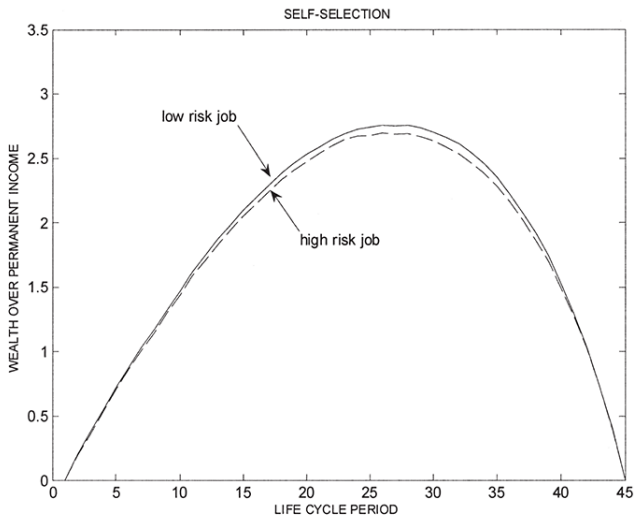
Their approach:

- use "natural experiment" from the German reunification
- add a **new measure of income risk** (low vs high risk occupation)

Self-selection problem



Self-selection problem



Self-selection: generates downward bias (\downarrow precautionary savings)

German economy before the reunification

- East: "communist" regime → extremely egalitarian
- West: "liberal" regime → higher labor inc. inequalities

Table: East / West labor income risk differences

	Unemploy.	Inc. Gini	Diff inc. C / no-C degree	Occ. choice
East	0	0.17	15%	Constrained
West	9.8	>0.3	70%	Free

Assumption for East: no labor income risk + legal constraints
→ no self-selection in occ

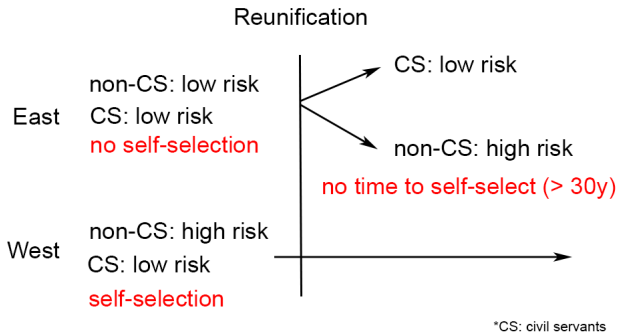
Natural experiment: German reunification

Idea: exploit German reunification + institutional laws in W applied to E.

Civil-servant occupation:

- Protected against unemployment risk
- Perfect information about income evolution

Non-civil servant occ.: used to measure labor income risk



Data: the German Socio-Economic Panel

Use data from 1998 to 2000 (after reunification):

- 1998: new refreshment sample
- Wealth effect takes time
- Review process (3y) to grant the civil servant status to East Germans

Divide data into two samples: "East" and "West".

- Residence before reunification
- Refreshment sample: education degree (East or West type)

Run the estimation for the two samples.

Regression specification

$$\log(\text{Wealth}) = \beta_0 + \beta_1 \text{risk} + \beta_2 \log(P) + \delta' Z + \epsilon \quad (1)$$

- *risk*: civil servant dummy
- *P*: permanent income
- *Z*: control variables

Table: Estimation results (without / with zero wealth observations)

	West sample	East sample	Chow test
civil servant (dummy)	- 0.138 (0.068)	-0.249 (0.143)	reject diff.
civil servant (dummy)	0.028 (0.150)	-1.147 (0.360)	accept diff.

- **Precautionary motive:** risk has a positive effect on wealth.
- **Self-selection:** reduce the precautionary savings motive.

Quantify Precautionary Wealth

- 1 Construct **predicted wealth** of all non-CS HH in East and West.
- 2 **Counterfactual wealth:** predict how much non-CS would accumulated if $risk = 1$ (low risk)

$$\text{Precautionary wealth} = \frac{\text{Predicted wealth} - \text{Counterfactual wealth}}{\text{Predicted wealth}}$$

Quantify Precautionary Wealth (2)

Table: Precautionary wealth (without / with zero wealth observations)

	West sample	East sample
Precautionary wealth (% of wealth)	12.9%	22.1%
Precautionary wealth (% of wealth)	0%	68%

Self-selection: influence a lot the results.

Robustness Checks

Four sensitivity analysis

- 1 Incorporate housing wealth → increases self-selection (not so much)
- 2 Take only older inc. earners ($>35y$) → decreases self-selection in East
- 3 Include self-employment occupation. → no clear effect
- 4 Alternative risk measure (variance of inc.) → main results unchanged

Discussion: other possible explanations

- Unemploy. rate in East is different → lower wealth holding.
- East-West difference in labor inc. risk
 - ▶ Income risk (for non-CS and CS) is lower in East
 - ▶ Risk difference between CS and non-CS is smaller in East than West.
- East Germans are more prudent → implausible
- Credit access differences → similar in the data

They argue that these issues are small.

Conclusion

Use a natural experiment: "German reunification" + novel risk measure (CS / non-CS occ.)

Main assumption:

Occupational choice is not correlated with risk aversion in East.

- occ. choice is controlled by institutional features
- "communist" regime (low overall inc. risk)

What do they find?

- 1 Evidence for precautionary savings
- 2 Quantify the importance of self-selection issue in estimating precautionary motive.