BANCO DE ESPAÑA

Down or Out: Assessing the Welfare Costs of Household Investment Mistakes

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A FAT DATASET

- **Every household *h* in Sweden**
- **Entire financial portfolio** of *h*, except:
  - ***Pensions not included***
  - ***Insurance and small bank accounts missing***
  - ***Tax evasion issues***
- **Panel** 1999-2002
- Also income, demographic data (from 1983)
- Secondary dataset: Monthly returns on every financial asset *n* held in Sweden (1983-2004)

A FAT PAPER

1. Introduction
2. Data summary
3. **Asset distribution**
   - **cross-section** stats
   - who **participates** in risky asset markets
4. **Household portfolios**
   - **risk = systematic + idiosyncratic**
   - **idiosyncratic = volat+concent+correl**
   - **mean** return: CAPM
   - **return loss**
   - **utility loss**
5. **Who is undiversified**
6. Changes over time
7. Conclusion

What’s a “MISTAKE”?

1. **“Weak” sense:** assuming **no transaction fees** and **no cognitive costs**, household could **improve its portfolio**
2. Assuming **no cognitive costs**, household could **improve its portfolio** enough to offset any resulting **transaction fees**
3. **“Strong” sense:** Household could **improve its portfolio** enough to offset any resulting **transaction fees** and **cognitive costs**

What's a "MISTAKE"?

1. **"Weak" sense:** assuming **no transaction fees** and **no cognitive costs**, household could **improve its portfolio**
   - **This is the usual meaning of "mistake" in this paper.**
   - Misnomer? Does **not** imply individuals are making irrational choices.
   - Finding mistakes in the "weak" sense of the word really points to **potential innovations** in financial instruments or financial education.

3. Cross-sectional asset distribution

Asset distribution

- **Average household:**
  - Gross wealth: $98000
    - **Financial: $27000**
    - Real estate $71000
  - Debt $30000
  - Net wealth $68000
- **There are four kinds of households:**
  - small **cash** savings only
  - larger savings, **including equity**, to buy house
  - own a **house**, few financial assets
  - own a house and **large financial wealth**

4. Household Portfolios

Asset returns

Observed asset risk:

$$\underset{NxN}{\Sigma}$$ = Covariance matrix of N asset returns, 1994-2004 (monthly)

Model excess returns (CAPM):

$$r^e_{n,t} = \beta_n r^e_{m,t} + \varepsilon_{n,t}$$

asset *n* market

•*(would be nice to graph **observed** excess returns too)*

Household portfolio returns

Household portfolio weights: $\underset{Nx1}{\omega_h}$

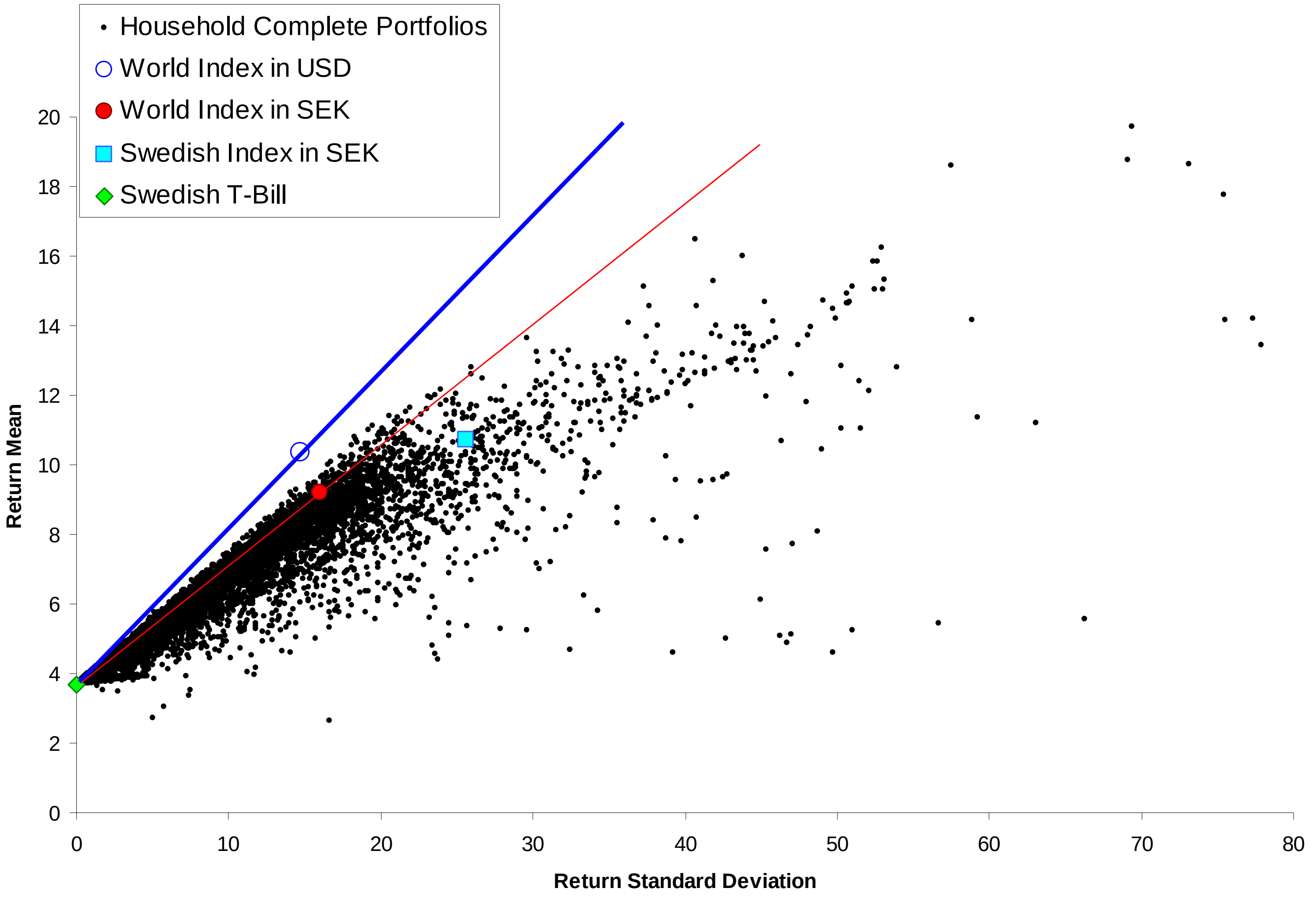
Decompose: risk = systematic+idiosyncratic

$$r^e_{h,t} = \alpha_h + \beta_h r^e_{m,t} + \varepsilon_{h,t}$$

household return market benchmark

where: $\beta_h = \omega_h ' \beta$ and $\varepsilon_{h,t} = \omega_h ' \varepsilon_t$

B. Complete Portfolios



MOST HOUSEHOLDS DIVERSIFY WELL.

- Many **outperform Swedish index.**
  - because they diversify internationally (mutual funds)
- Many on **unhedged M-V frontier**
  - but only if analysis includes mutual funds!
- **Nobody on currency-hedged M-V frontier.**
  - diversifying, but not hedging currency risk

  - **Note: previous studies ignored mutual funds!**
  - **Note: mutual funds should offer currency-hedged funds!**

Some nontrivial return losses.

- Some losses due to investment in **big, famous** Swedish firms.
- Most losses associated with **riskiest portfolios.**
  – But, do we really **believe the CAPM?** (Black 1972)
  – That is, is it **possible to invest on margin?**

- If not, then **overestimating biggest losses.**
  – if purpose is to **identify market opportunties**, then M-V frontier is reasonable benchmark.
  – if purpose is to **check investor rationality,** then M-V frontier may **not** be reasonable benchmark.

5. Who takes risks?

Who diversifies?

Explaining portfolios

- **Confirming previous results** (and theory):
  - Higher **wealth:** hold **riskier** portfolio
  - More **background risk:** hold **less risky** portfolio

- **Financial sophistication** (wealth, education) **predicts risky investment.**
  - predicts **more risk taking**
  - predicts **higher average returns**

Net effect: Bigger return losses.

Who avoids risk?

- Maybe nonparticipants **know they are unskilled investors... stay “out” instead of “down”.**
  - Assuming stock market participation is efficient **exaggerates cost of nonparticipation**
  - Impute investment skill of nonparticipants: lower loss
  - Impute risk aversion of nonparticipants: lower loss

CONCLUSIONS

- "Weak" mistakes exist.
  - Somebody should sell currency-hedged mutual funds!!

- "Strong" mistakes appear rare.
  - Those Swedes are doing a good job!

James Costain

GRACIAS POR SU ATENCIÓN

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