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)
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: $98,000
  - Debt $30,000
  - Net wealth $68,000

- **Financial:** $27,000
  - Real estate $71,000

- **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:**

\[ \sum_{N \times N} \Sigma_{t_n e t_m n} = \text{Covariance matrix of N asset returns, 1994-2004 (monthly)} \]

**Model excess returns (CAPM):**

\[ r_{n,t}^e = \beta_n r_{m,t}^e + \epsilon_{n,t} \]

- Asset \( n \)
- Market

*(would be nice to graph observed excess returns too)*
Household portfolio weights: \( \omega_h \in \mathbb{R}^{N \times 1} \)

Decompose: risk = systematic + idiosyncratic

\[
\begin{align*}
    r_{h,t}^e &= \alpha_h + \beta_h r_{m,t}^e + \epsilon_{h,t} \\
\end{align*}
\]

where: \( \beta_h = \omega_h' \beta \) and \( \epsilon_{h,t} = \omega_h' \epsilon_t \)
B. Complete Portfolios

- Household Complete Portfolios
- World Index in USD
- World Index in SEK
- Swedish Index in SEK
- Swedish T-Bill
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 opportunities, 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* → Net effect: Bigger return
  - 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!
GRACIAS POR SU ATENCIÓN