Week 6: Household Finance
Empirical Asset Pricing

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Asset Pricing, Corporate Finance, and Household Finance

- From Campbell (2006), AFA Presidential Address
  - **Asset Pricing**: How asset prices are determined in capital markets and how average asset returns reflect risk.
  - **Corporate Finance**: How business enterprises use financial instruments to further the interests of their owners, and resolve agency problems.
  - **Household Finance**: How households use financial instruments to attain objectives.
- Issues unique to Household Finance:
  - Horizon matters: long but finite investment horizons with life-cycle aspects.
  - Wealth matters: stark difference between the wealthy and poor households.
  - Non-financial risks: human capital and housing (illiquid and non-divisible).
  - Borrowing constraints: mortgage loans, consumer loans, payday lending.
  - Taxation: retirement accounts, capital gains tax and its basis, etc.
  - Financial inclusion, financial advisory and education.

Normative Household Finance: Financial Theories

- On optimal portfolio choice and consumption:
  - ▶ Mean-variance: Markowitz (1952) and Tobin (1958).
  - ▶ Dynamic continuous-time models: Merton (1969, 1971).
- Fundamental insights from Merton's portfolio problem,
  - ▶ The link between the optimal portfolio weight w^i and risk-aversion γ^i

$$w^i = \frac{1}{\gamma^i} \frac{\mu - r}{\sigma_R^2} \, .$$

  - ▶ The link between the optimal consumption volatility σ_c^i and risk-aversion γ^i:

$$\sigma_c^i = \sigma_w^i = w^i \sigma_R = \frac{1}{\gamma^i} \frac{\mu - r}{\sigma_R}$$

- Beyond Merton: alternative specifications of household utility; stochastic interest rates; time-varying risk premiums.

Positive Household Finance: Data on Household Financial Decisions

- The ideal data set according to Campbell (2006),
  - Representative of the population (e.g., age and wealth).
  - Household-level wealth: total and breakdown into finer categories.
  - Household-level investments: breakdown into asset classes.
  - Data quality: reported with a high level of accuracy.
  - Panel data following the households over time.

- On participation and asset allocation, most work relies on survey data via SCF,
  - The standing puzzle: Limited participation in the equity market.
  - Wealth Effects: Equity participation and weights vary significantly with wealth.
  - Demographics: Income, age, race, education, and self-reported attitudes to risk.
  - Aggregate statistics: dominated by wealthy households, not representative of a typical household.

Alternative Data on Household Holdings and Transactions

- Brokerage accounts:
  - **Schlarbaum, Lewellen, and Lease (1978)**: 3,000 retail brokerage accounts.
  - **Odean (1998, 1999)**: 10,000 discount brokerage accounts held during the 1990s. **Barber and Odean (2000)**: Expand the sample to 78,000 accounts.

- Centralized registers of share ownership:
  - **Grinblatt and Keloharju (2000, 2001)**: Finnish equity transactions and holdings.

- Government tax records:
  - **Blume and Friend (1975)**: Dividend payments reported via US income tax.
  - **Blume and Friend (1978)** and **Kopczuk and Saez (2004)**: US estate tax.
  - **Calvet, Campbell, and Sodini (2007, 2009a, 2009b):** Income, wealth, demographics, education, and location for the entire population of Sweden (5 million).

Household Mortgage Decisions: FRM vs ARM

- In the US, FRMs predominate, most with 30-year maturities at originations.
- Refinancing: at the borrower's discretion without penalty at any time.
- Campbell and Cocco (2003): Optimal mortgage contract.
- Explaining the time-series variation of the FRM fraction in the US.
- What are the cross-country evidences? What about China?

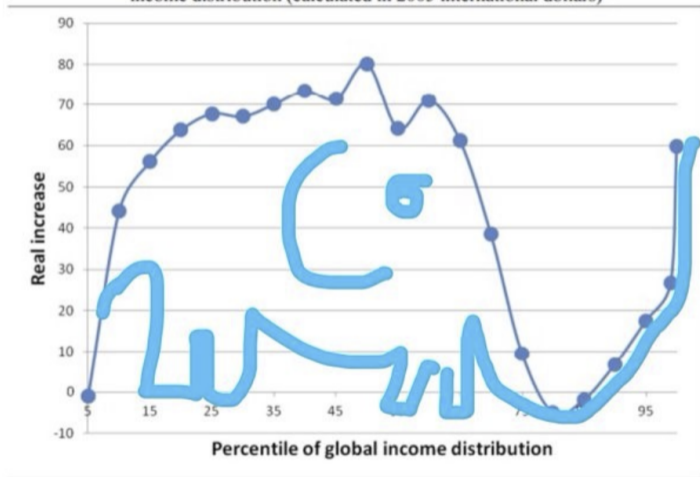# Recent Papers on Household Finance

- Barber, Huang, Odean, and Schwarz (2020): Robinhood investors.
- Hong, Lu, and Pan (2020): FinTech adoption and household risk-taking.
- Di Maggio, Ma, and Williams (2020): overdrafts, payday lending, and the underbanked.

Finance and Income Inequality

- Wealth inequality and returns to wealth.
- Financial structure and income inequality.
- Quantitative easing and income inequality.
- FinTech and financial inclusion.
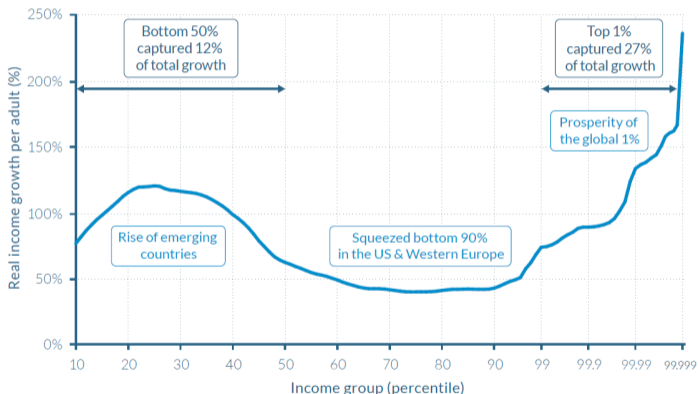
The Elephant Curve, Lakner and Milanovic (2013)

Figure 4. Change in real income between 1988 and 2008 at various percentiles of global income distribution (calculated in 2005 international dollars)

Figure E4

The elephant curve of global inequality and growth, 1980–2016

Bottom 50% captured 12% of total growth

Top 1% captured 27% of total growth

Prosperity of the global 1%

Rise of emerging countries

Squeezed bottom 90% in the US & Western Europe

Source: WID.world (2017). See wir2018.wid.world for more details.

Alvaredo, Chancel, Piketty, Saez, and Zucman (2018)

Share of the population living in extreme poverty, by world region

Extreme poverty is defined as living with per capita household consumption below 1.90 international dollars per day (in 2011 PPP prices). International dollars are adjusted for inflation and for price differences across countries.
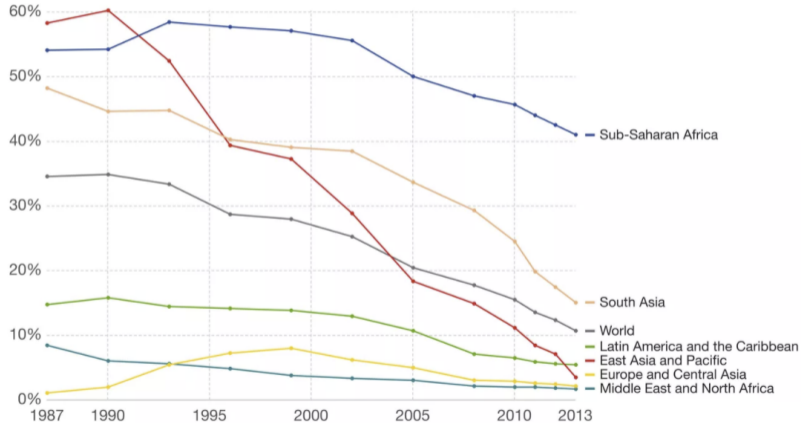
Global income distribution in 1800, 1975, and 2015

Income is measured by adjusting for price changes over time (inflation) and
for price differences between countries (purchasing power parity (PPP) adjustment).
These estimates are based on reconstructed National Accounts and within-country inequality measures.
Non-market income (e.g. through home production such as subsistence farming) is taken into account.
The *International Poverty Line* is set by the *United Nations* and is the poverty line that defines extreme poverty.