The demand for liquid assets with uncertain lumpy expenditures

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The literature (an outsider's view)

- Concerned with understanding the **details** of individual cash management practices
  - frequency/size of deposits/withdrawals and average cash holdings
- Empirical measurements from large micro datasets
- Theoretical interpretation based on Baumol-Tobin model (or some variant)
- Why do this?
- These details may matter for some questions (or so I am told)

The Baumol-Tobin model

- An exogenous consumption path that *must* be financed with cash
- Cash is dominated in (pecuniary) rate of return by an illiquid asset
- Illiquid asset is convertible to cash at a fixed cost
- Implies a portfolio allocation problem
  - solution is an optimal liquidation or redemption frequency
  - as a function of parameters (consumption path, opportunity cost of liquidity, liquidation cost, etc.)

Attanasio, Guiso and Jappelli (JPE 2002)

- A typical application...
- *The demand for money, financial innovation and the welfare cost of inflation: An analysis with household data*
- Estimate the parameters of a simple Baumol-Tobin model using Italian household data
  - n.b., simple BT model can be written on a napkin
- Welfare cost of "inflation" less than 0.1% of consumption

Alvarez and Lippi (Ecta 2009)

- Basic BT model inconsistent with some properties of the micro data
- In particular, individuals do not typically deplete their cash balances completely before replenishing
- Authors introduce stochastic opportunities to withdraw cash at zero cost
  - repairs some qualitative and quantitative deficiencies of the theory wrt data
- Quantify the benefit of ATM ownership (small) and the cost of inflation (even smaller than previous estimates)

Alvarez and Lippi (2011)

- Highlight new evidence (Austrian data) concerning the distribution of size of cash purchases
  - cash purchase size distribution: median $<$ mean
  - cash withdrawals are sometimes spent immediately
- To capture this property of the data, authors modify BT model to allow for large, but infrequent (and stochastic), consumption needs
  - an impressive technical achievement (model no longer fits on a napkin)

[P1] Model predicts that size of cash withdrawals relative to average cash holdings should be positively related to the relative importance of large/infrequent stochastic consumption events

- In the spirit of Alvarez and Lippi (2009), estimated model fits data better
  - not only along usual margins; but also
  - along new margins previously not studied
- In particular, model prediction [P1] consistent with (previously unavailable) evidence

Assessment

- Seems like a **lot** of work for the purpose of understanding a particular detail in the cash management practices of households
  - what justifies this attention to minutiae?
  - especially since technical demands are significant
- As usual, it likely depends on the question being addressed
- E.g., welfare implications of policy changes can frequently hinge on details of microstructure

Conclusion

- An impressive technical achievement in search of an application
- Am looking forward to this!