

A structured approach to testing the stability of individual preferences

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Research Question

Individual preferences:

- Economic preference parameters (e.g., risk aversion, time discounting)
- Personality traits (e.g., Big Five, locus of control)

How can we test if individual preferences are stable over time?

Why is this Important?

- Confirm or reject assumptions underlying most economic models (theoretical and empirical)
- Explore regularities in stability across subgroups
- Aid interpretation of previous empirical findings
- Choose between competing preference measures

Model

$$P_{it}^* = \alpha P_{i,t-1}^* + g(X_{it}) + \eta_{it} \quad (1)$$

$$P_{it} = P_{it}^* + \varepsilon_{it} \quad (2)$$

$P_{it}^* \equiv$ latent preference

$\alpha \equiv$ Similarity parameter

$g(X_{it}) \equiv$ background controls

$\eta_{it} \equiv$ idiosyncratic shocks to preferences

$P_{it} \equiv$ observed preference

$\varepsilon_{it} \equiv$ measurement error

Two-Step Estimation

GMM:

$$P_{it} = \alpha P_{i,t-1} + g(X_{it}) + e_{it};$$

Instruments: $P_{i,t-j}$, for all $j \geq 2$

NLS:

$$\text{Var}(\tilde{P}_{i,t+k} - (\hat{\alpha}^k) \tilde{P}_{it}) = e^{\ln(\sigma_\eta^2)} \sum_{j=0}^k \hat{\alpha}^{2j} + e^{\ln(\sigma_\varepsilon^2)} (\hat{\alpha}^{2k} + 1) + v_k;$$

$$k = 1, \dots, K$$

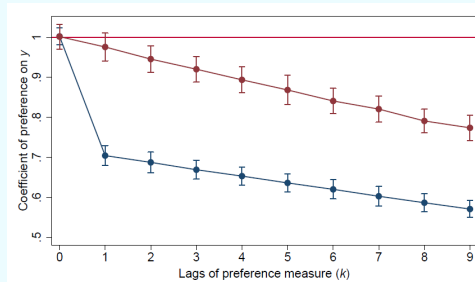
Empirical Results

- Dutch panel data on risk aversion, patience and Conscientiousness
- Multi-item measures; transformed into continuous indices

	(1) Risk aversion	(2) Patience	(3) Conscientiousness
α	0.971*** (0.011)	0.978*** (0.026)	0.985*** (0.013)
σ_η^2	0.031	0.196	0.029
σ_ε^2	0.244	0.218	0.194
Noise-to-signal ratio ($s = \frac{\sigma_\varepsilon^2}{\sigma_\eta^2}$)	0.323	0.279	0.241
$g(X_{it})$	Yes	Yes	Yes
Observations	3,451	1,159	2,352
Individuals	1,092	556	873
R^2	0.464	0.294	0.544

Simulation: "Staleness bias"

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Extensions and Additions

- Heterogeneity between groups (Married vs Single; Kids vs No kids)
- Non-linear effects of X
- Additional test based on second moments of differences
- Additional IV options and robustness

Conclusion

- Develop a general and simple-to-estimate model to test the stability of individual preferences (α) and the heterogeneity in preference stability (σ_η), while accounting for the variation predicted by other factors ($g(X)$) and for measurement error (ε).
- I test the model using Dutch panel data on risk aversion, patience and Big Five Conscientiousness and find that:
 - All preferences seem quite stable, but risk aversion does change slowly over time!
 - Stability in patience is substantially more heterogeneous across the sample
 - All preferences, especially risk aversion, are measured with substantial noise

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