

**Deutsche Bundesbank's 9th Spring Conference:
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**Discussion of „Asset Demand and the Distribution of
Household Characteristics“
by Martin Schneider and Monika Piazzesi**

**Discussion of
Monika Piazzesi and Martin Schneider**

**Asset Demand and the Distribution of
Household Characteristics**

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Summary and Contribution

- **HH heterogeneity & asset demand / prices**
- **What HH heterogeneities need to be modeled?**
Can we abstract from some w/o getting it all ‘wrong’?
- **Rich model: heterogeneous agents (Kreps-Porteus)**
 - age cohorts**
 - portfolio: equity, housing, nominal bonds**
 - non-asset income (human wealth)**
 - uninsurable idiosyncratic risk: housing & labor income**
 - aggregate risk**
 - financial frictions: collateral constraint (housing),**
short-selling constraints, spread in bond markets
- **Impressive effort to match model to micro data: SCF 1989**
- **Can the model replicate observed asset choices? SCF 1995**

Summary and Contribution

- **Model successful: explains variations in the average portfolios across age cohorts**
 - asset accumulation and decumulation over life cycle
 - young households leverage: borrow & buy first houses, then equity
 - older households lend and reduce exposure to risk
- **Model as ‘truth’: what aspects of heterogeneity have to be modeled to get aggregate asset demand right?**
 - uninsurable risks: precautionary savings & risk taking
 - life cycle / age
- **Of little relevance appear:**
 - within cohort wealth & income heterogeneity
 - most HH in approx. linear part of asset demand functions,
 - replacing a cohort RA per cohort seems OK

Outline of Discussion

- (I) Temporary equilibrium approach to asset pricing**
- (II) Success in replicating asset portfolios: what is needed?**
- (III) The effects of heterogeneity & idiosyncratic risk**

What are the rules of the game?

- Temporary equilibrium approach (earlier work, Grandmont)
- Intertemporal equilibrium approach
 - solves stationary wealth distribution, portfolios, asset prices
 - compare model-implied distribution & prices to data
 - this is hard in the presence of aggregate and idiosyncratic shocks (Krueger&Lustig)
 - no such thing as a ‘stationary’ wealth distribution in data
aggregate shocks drive you away: baby boom, unexp. inflation
 - transition to **SS** may take long
 - ignore initial conditions not a good idea when seeking to explain behavior in the short-run

What are the rules of the game?

- **Temporary equilibrium approach**

HH asset demand function

$$\theta_t^d = d(\theta_{t-1}, p_t, r_{t+1}^e, \mathbf{V}_{t+1}^e, y_t, y_t^e)$$

micro data (SCF 1989) for θ_{t-1}, y_t, y_t^e (initial conditions / added info)

parameterize expectations: $r_{t+1}^e, \mathbf{V}_{t+1}^e$

parameterize model s.t. θ_t^d matches SCF 1995 at observed prices

What are the rules of the game?

Using the parameterized asset demand functions:

(I) Taking asset prices as given

- *does shutting down idiosyncratic risk affect asset demand? (across cohorts)*
- *does shutting down within cohort y & w heterogeneity affect demand?*

(II) Construct measures of asset supply & derive model-implied equilibrium prices

- *can model match equilibrium prices?*
- *same questions as before, but now w.r.t. effects on asset prices?*

Matching portfolios

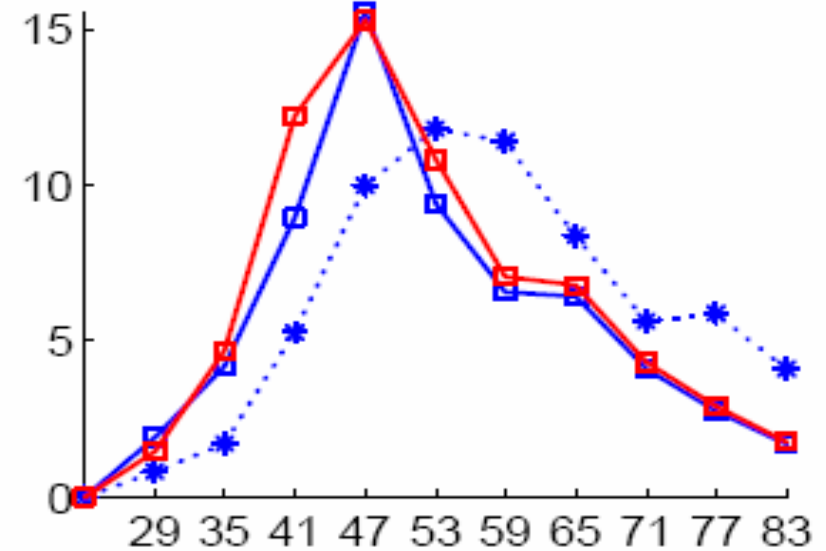
- **Astonishing success in qualitatively & quantitatively replicating SCF 1995 portfolios**
- **Natural difficulty: equity premium puzzle**

equity & houses strongly preferred to bonds: borrow & invest

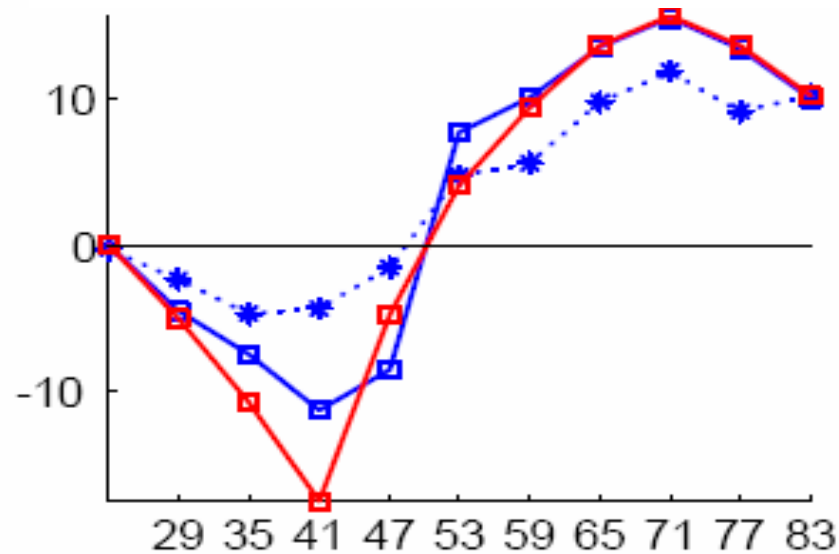
- **2% lending-borrowing spread on bond**
- **higher perceived risk: exp variance of returns times 3**
- **Kreps-Porteus preferences: potentially higher equity premium**
- **collateral constraints: limits the ability to leverage**
- **only houses qualify as collateral: makes them more attractive rel to equities**

Too much leverage by young HHs

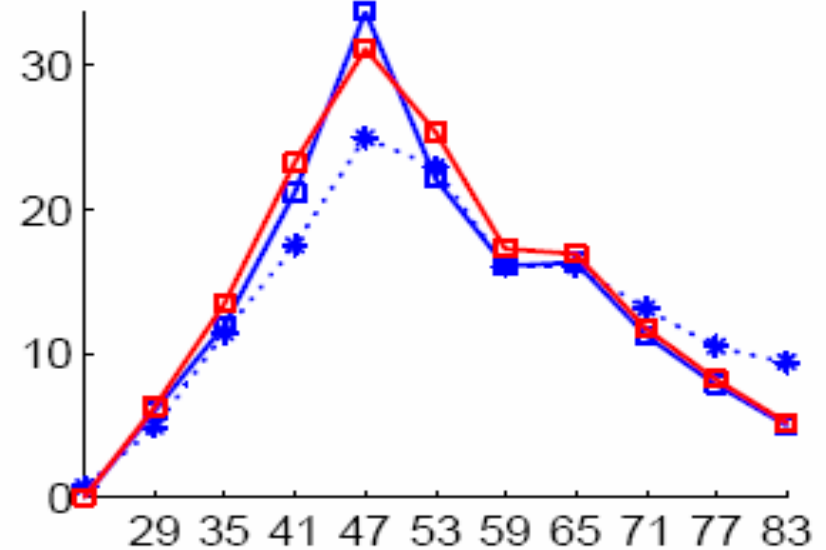
Equity Positions (% gdp)



Net Bond Positions (% gdp)



House Positions (% gdp)



Matching portfolios

What's the role of Kreps-Porteus preferences ?

Restoy & Weil (1998):

$$ER_i = -\text{Var}(r_i)/2 + \gamma \cdot \text{Cov}(r_i, \Delta c) + (\gamma - 1/\sigma) \cdot \text{Cov}(r_i, h)$$

γ : risk aversion

σ : elasticity of substitution

h : news tomorrow about consumption growth thereafter

- Returns are iid: asset wealth (w) & labor income (y)
- Consumption functions (approx) linear in w/y (iid) $\Rightarrow \text{Cov}(r_i, h) = 0$
- No equity premium....
- No portfolio implications from $\gamma \neq 1/\sigma$ (under RE)
- Use standard preferences & discount factor to fix risk-free rate?

Heterogeneity & Idiosyncratic Risk

	NW/GDP	portfolio weights			credit/GDP		pd ratios		nominal rate (%)
		bonds	housing	stocks	+	-	housing	stocks	
Data	2.51	15	59	26	70	31	20.4	23.9	6.1
Model	2.51	15	60	25	70	31	20.8	22.7	6.1

No heterogeneity within age cohorts

2.60	15	60	25	73	35	21.5	24.6	6.3
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No heterogeneity within age cohorts, no idiosyncratic income shocks

1.20	32	46	22	45	09	7.6	10.0	8.6
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Idiosyncratic Risk

- Reduce precautionary savings & strong desire to consume
- Endowment economy
 - => price of consumption rises / real price of assets falls
 - => dividend yield of equity increases from 4% to 10% per year
 - => upward adjustments of return expectations on equity?
 - limit the fall in equity/house prices
- Taking expectations as given may be crucial for result:
depending on sensitivity of asset demand on expected returns
prices & portfolio could be much closer to target distribution
- Can say what aspects of heterogeneity do **NOT** matter
Much harder to say what DOES matter

Conclusions

- **Very interesting & very innovative paper:**
 - new framework allowing to study asset pricing implications of micro heterogeneity**
- **‘Easy’ to import information from micro data sets**
- **Allows to study many important questions:**
 - What are the micro/distributional implications of**
 - demographic developments (immigration etc.)?**
 - increased asset supply from abroad (savings glut)?**