A Distributional Theory of Household Sentiment

Marco Bellifemine
LSE

Adrien Couturier
LSE

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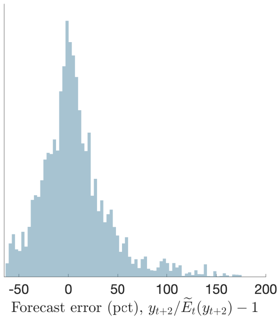

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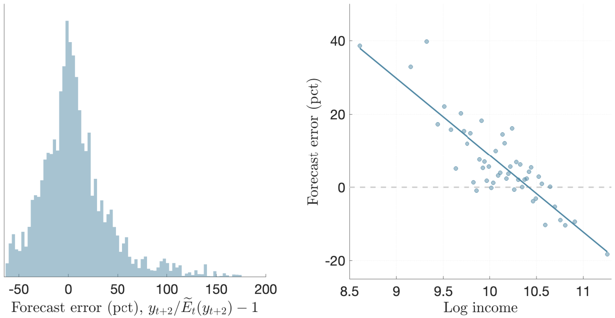

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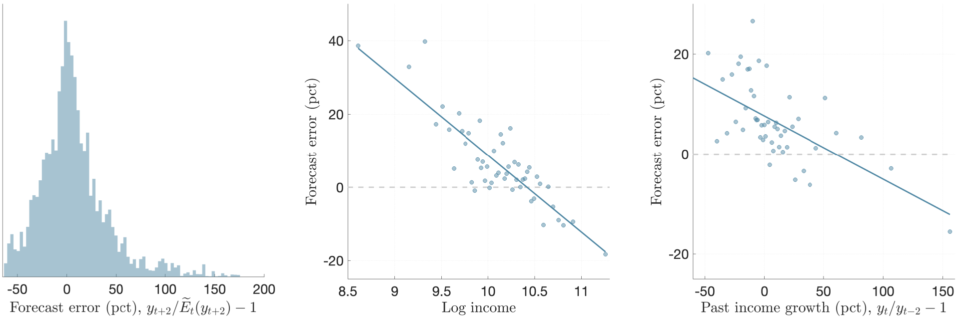

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- **Diagnostic Expectations**: overweight recent news
  - ◇ Strong evidence for firms and investors
  - ◇ What about households' expectations of idiosyncratic variables?
  - ◇ Is sentiment a latent factor?

- Expectations biased by recent income shocks

$$dy_t = -\mu y_t \, dt + \underbrace{dN_t}_{\text{jump shocks}} \quad v.s. \quad \widetilde{dy_t} = \Big(- \mu y_t + \mathcal{S}_t \Big) dt + dN_t$$

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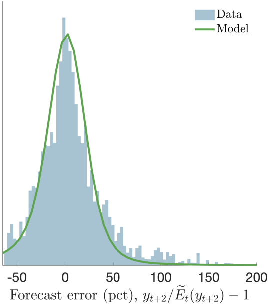

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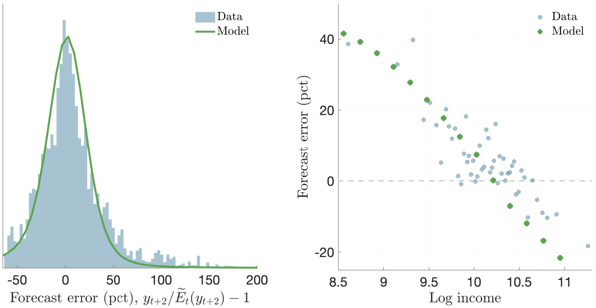

Incomplete markets with diagnostic expectations

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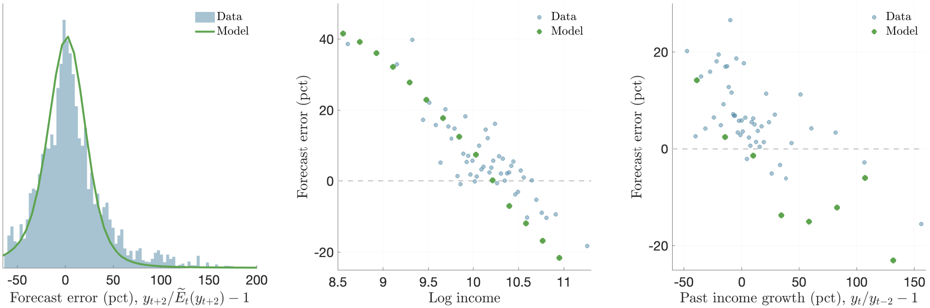

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- Embed within an B-H-A model

$$\max_{\{c_t\}_{t\geq 0}} \widetilde{\mathbb{E}}_0 \int_0^\infty e^{-\rho t} u(c_t) dt, \quad s.t. \quad \dot{a}_t = ra_t + we^{y_t} - c_t, \quad a \geq \underline{a}$$

Consumption Dynamics

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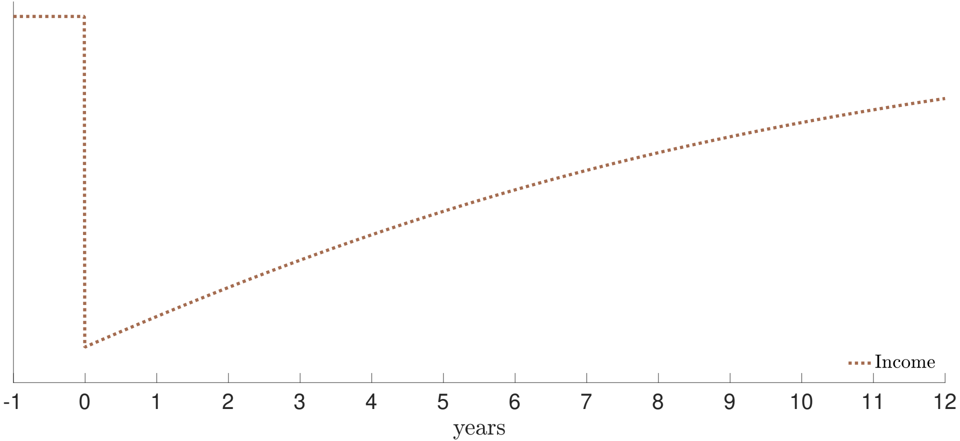

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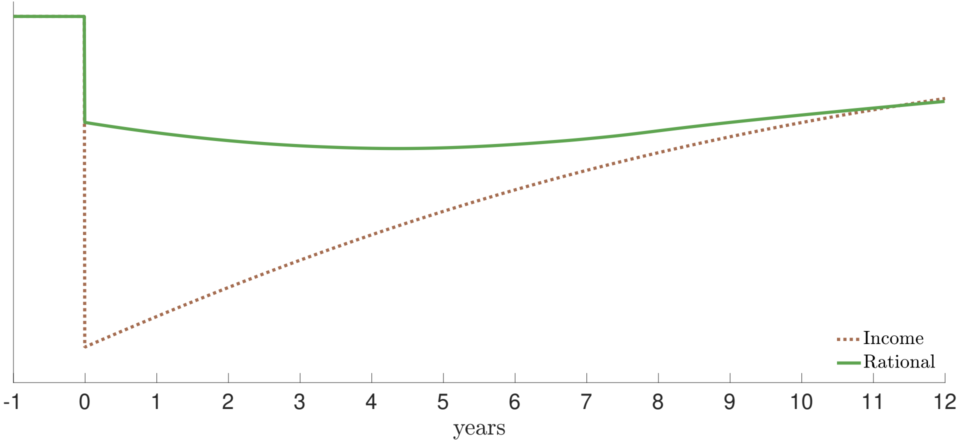

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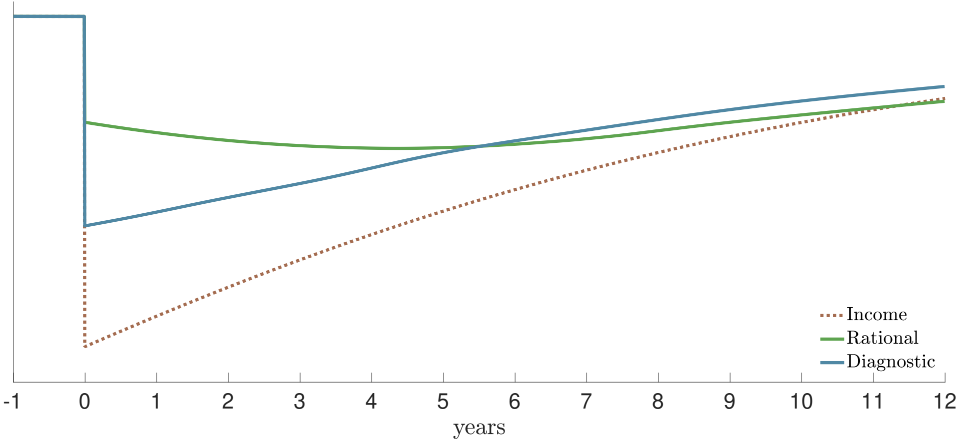

- Consumption response out of income shocks:

$$\eta(a, y, \mathcal{S}) \equiv \frac{\partial \log c(a, y, \mathcal{S})}{\partial y} + \frac{\partial \log c(a, y, \mathcal{S})}{\partial \mathcal{S}}$$

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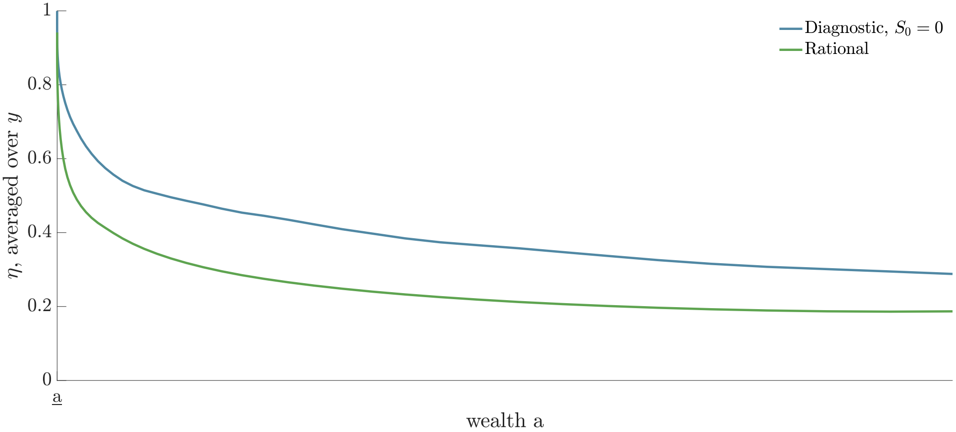

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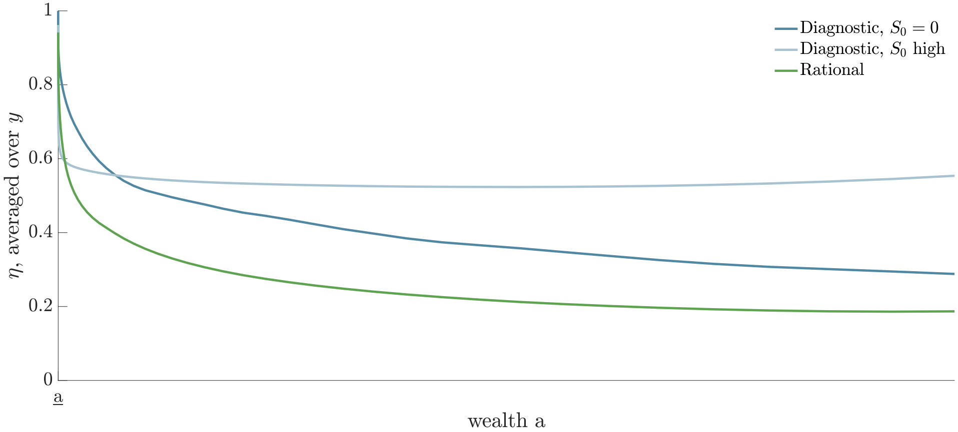

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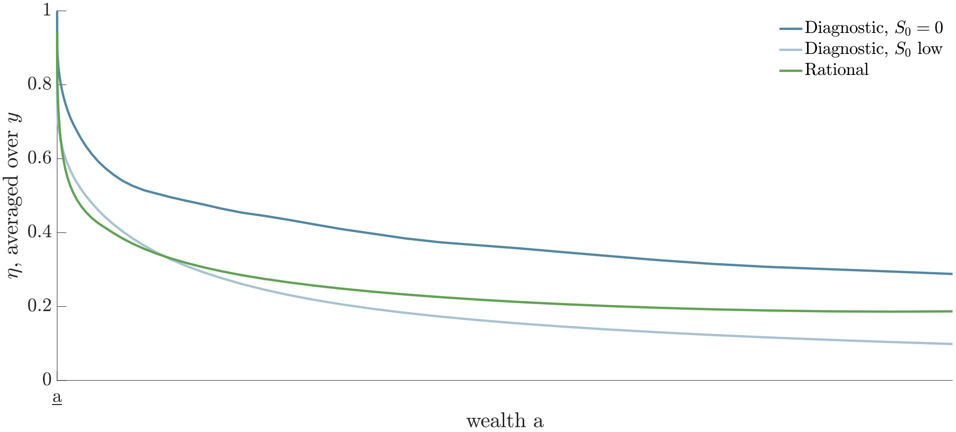

PROPOSITION

Euler equation distortion as a wealth tax: *Sentiment* × *Income elasticity of consumption*

$$\mathbb{E}_t \quad \frac{du'(c_t)/dt}{u'(c_t)} = \rho - \left[r - \frac{\mathcal{S}_t \cdot \phi(x_t)}{IES} \right], \qquad \phi(\boldsymbol{x}) \equiv \frac{\partial \log c(\boldsymbol{x})}{\partial y}, \qquad \boldsymbol{x} \equiv (a, y, \dots)$$

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Sentiment distortions are state dependent, depend on the income elasticity of consumption

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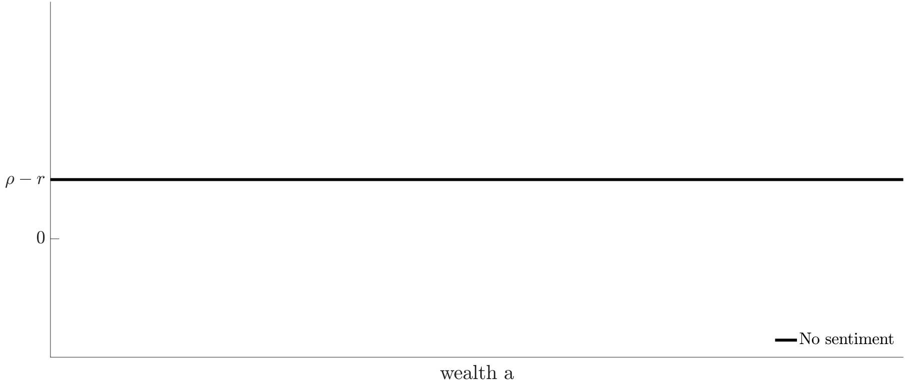

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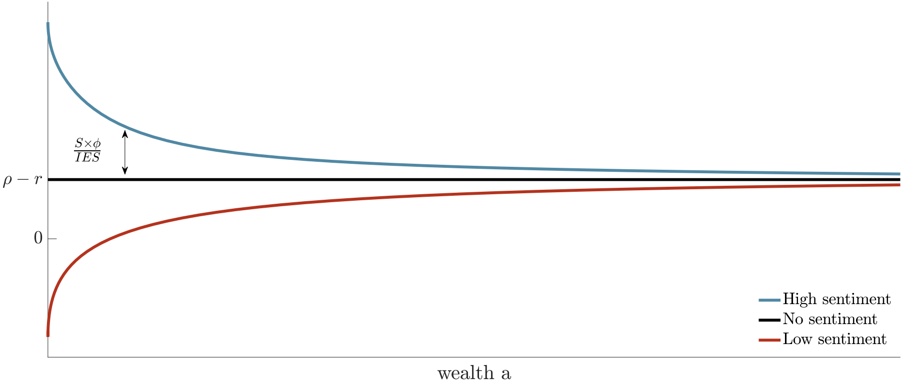

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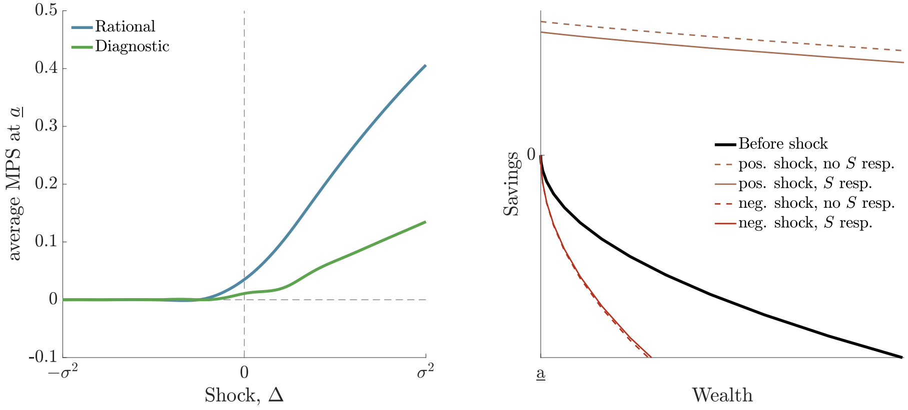
$$MPS = 1 - \mathfrak{m}(\Delta; a, y, \mathcal{S}) = 1 - \frac{c(a, y+\Delta, \mathcal{S}+\Delta) - c(a, y, \mathcal{S})}{\Delta}$$



Distributed welfare cost

- **Welfare cost**: consumption tax $\tau(a,y)$ equating expected welfare:

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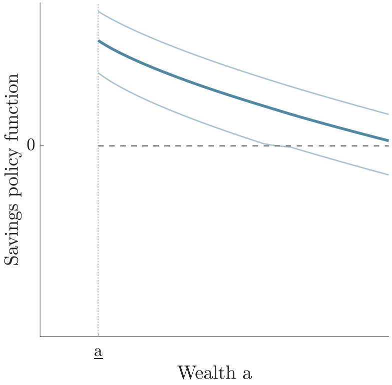

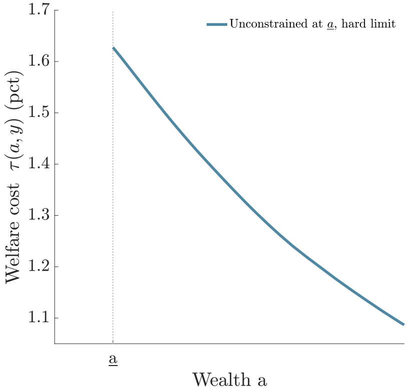

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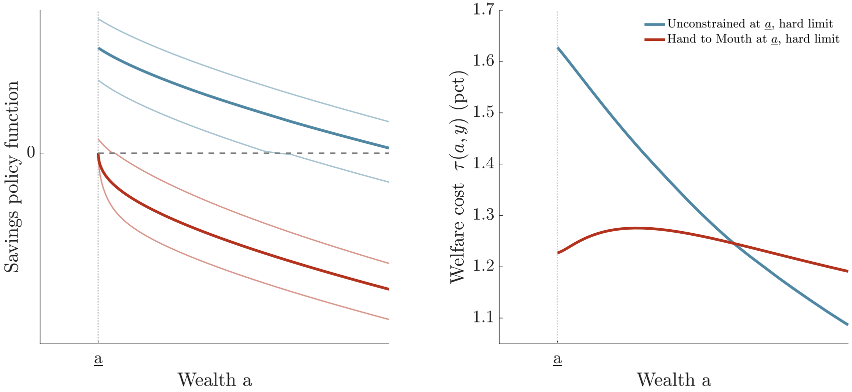

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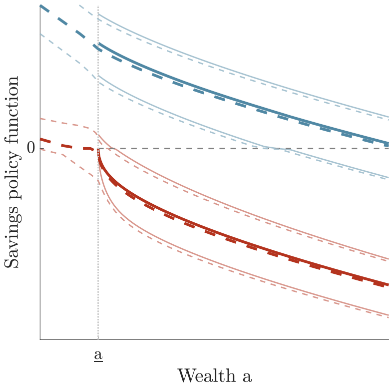

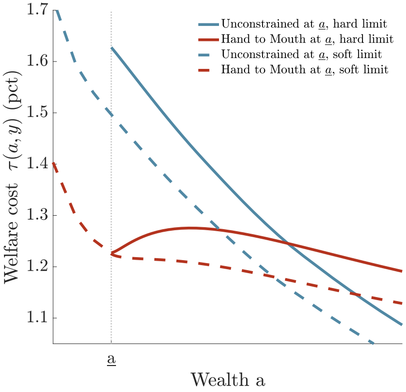

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