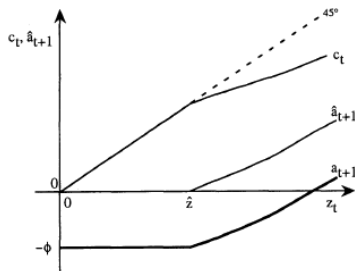# Aiyagari Paper: Uninsured Idiosyncratic Risk

Seyed Ali Madanizadeh
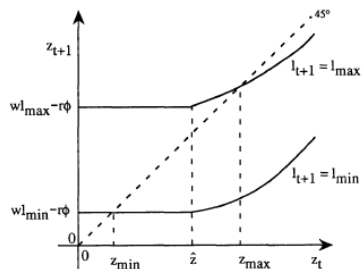
Sharif U.

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Introduction

FIGURE Ia
Consumption and Assets as Functions
of Total Resources

FIGURE Ib
Evolution of Total Resources

Introduction

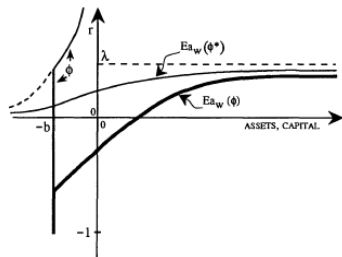- a goes to inifinity as r goes to ρ

FIGURE IIa
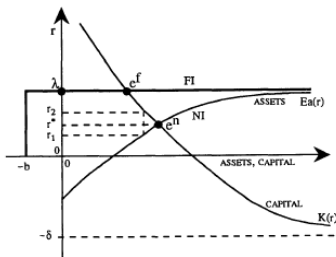Interest Rate versus Per Capita Assets

FIGURE IIb
Steady-State Determination

Introduction

- Ea_w increases with uncertainty (certainty=complete market)
- Ea_w decreases with ϕ (increases with $\underline{a}$)
- General Equilibrium: $Ea \equiv Ea_{w(r)} = K(r)$
  - What if there is no uncertainty (complete market)
  - Equilibrium Capital increases with uncertainty
  - Equilibrium Capital decreases with b, the exogenous borrowing constraint (consumption smootinig through borrowing)
  - Equilibrium Capital with natural borrowing $\phi = -wl_{\min}/r$
- Government debt

Results

- The quantitative results of this paper suggest that the contribution of uninsured idiosyncratic risk to aggregate saving is quite modest, at least for moderate and empirically plausible values of risk aversion, variability, and persistence in earning.
- The aggregate saving rate is higher by no more than three percentage points.
- However, for sufficiently high variability and persistence in earnings, the aggregate saving rate could be higher by as much as seven to fourteen percentage points.

Results

- In contrast to representative agent models (see Cochrane [1989]), it turns out that access to asset markets is quite important in enabling consumers to smooth out earnings fluctuations.
- In one example, by optimally accumulating and decumulating assets, an individual can cut consumption variability by about half and enjoy a welfare gain of about 14 percent of per capita consumption, or about 8 percent of per capita GNP, compared with a situation in which he had no access to asset market.

Results

- The model is also consistent, at least qualitatively, with certain features of income and wealth distributions.
- The distributions are positively skewed (median < mean), the wealth distribution is much more dispersed than the income distribution, and inequality as measured by the Gini coefficient is significantly higher for wealth than for income.