Inequality, Stock Market Participation, and the Equity Premium
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Discussed by Urban Jermann

Contribution

- Build a model that matches mean and std of returns on stocks and risk free bonds, limited stock market participation and some features of the wealth distribution

- An explanation for some changes seen in the last 25 years:

  - Changes explained:

    - Increased wage inequality
    - Moderate increase in wealth and consumption inequality
    - Increased stock market participation
    - Decreased equity premium

  - Drivers of change:

    - Increased wage inequality
    - Decreased stock market participation cost

- Main point of the paper:
  Need both, increase in wage inequality and decreased stock market participation cost
- Increased wage inequality alone
  - Counterfactually large increase in wealth and consumption inequality
  - Counterfactual decrease in stock market participation
- Decreased participation costs alone
  - Participation increases and equity premium declines
  - Counterfactual decrease in wealth and consumption inequality

Firms' problem

$$\max_{L_t, K_t} E_t \left[\Phi_{t+1} \cdot \left(Z_{t+1}^S f\left(K_t, L_t\right) + \left(1 - \delta_{t+1}\right) - L_t w_t - R_{t+1} K_t \right) \right]$$

with

$$\Phi_{t+1} = \int \left(\frac{C\left(W_{t+1}^i, S_{t+1}\right)}{C\left(W_t^i, S_t\right)} \right)^{-\theta} 1_{\alpha \neq 1} di$$

Depreciation shocks

- Without leverage, the stock return is given by

$$1 + r_t = \psi Y_t / K_t + (1 - \delta)$$

with $\overline{\psi Y_t / K_t} = 18\%$ and $\text{Std}_{t-1} (\ln Y_t) = 2\%$

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- What are these shocks? Physical depreciation? Investment specific technology shocks ($\text{Std} \approx 2\%$)

Table 3

Aggregate properties of the economy

	Std. Dev.	Autocorrelation
A: Population moments of HP-filtered data, theoretical economy		
Output	0.037	0.84
Investment	0.056	0.69
Consumption	0.037	0.64
B: Sample moments of HP-filtered data, US economy, 1929–2005		
Output	0.073	0.616
Investment	0.298	0.451
Consumption	0.036	0.697

$$\frac{\sigma_I}{\sigma_C} = 1.5$$

$$\frac{\sigma_I}{\sigma_C} = 8.3$$

Notes. US sample moments are based on annual NIPA data, 1929–2005. Theoretical moments

(Storesletten, Telmer and Yaron, 2007, RED)

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    - Regime$_t$; Z_t (productivity), δ_t (depreciation)
- Realized equity premium from 1982-1999 is 10.2%
  (1952-2006: 7.2%)

Figure 9: Behavior around the structural break

These figures show the model's behavior around the time of the structural break, as well as U.S. data between 1983 and 2004. The initial distribution is a typical distribution in the low wage volatility, high participation cost world. The change to a high wage volatility, low participation cost is in 1982. Stock market participation is in Panel A, change in Gini Coefficients are in Panel B, and the expected equity premium is in Panel C.
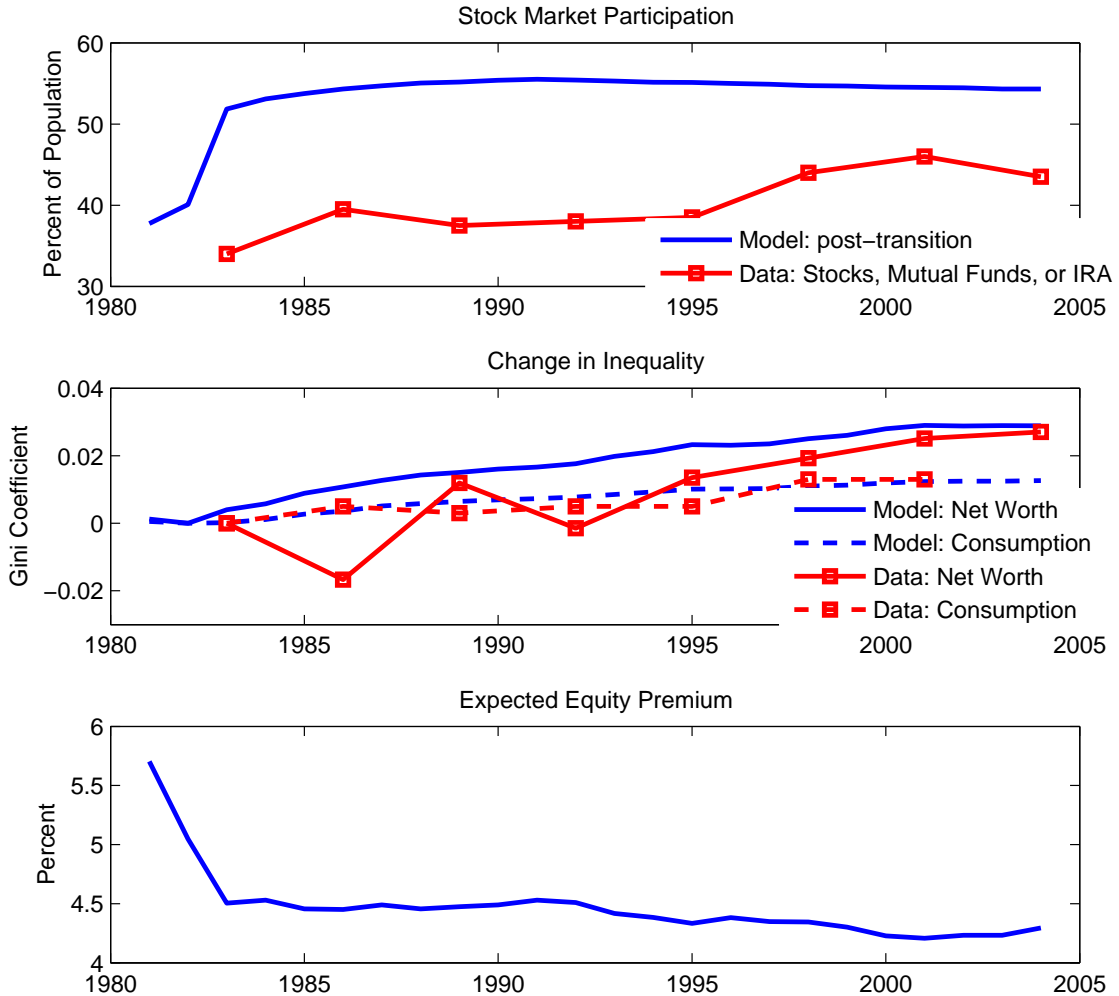
Gini coefficients for wealth

Wolff (2002)

	1983	1998	change
Net Worth (with DC retirement plans)	.799	.822	+.024
Net Worth without DC	.802	.842	+.04
Net Worth with DC and DB	.746	.791	+.045