Idiosyncratic Returns and Wages

Idiosyncratic heterogeneity in before-tax real returns, \( r_{it} \):

\[ r_{it} = \alpha_{it} + \rho_{it} + \epsilon_{it} \]

where \( \alpha_{it} \) are observable household characteristics, \( \rho_{it} \) is year fixed effects interacted with portfolio shares, and \( \epsilon_{it} \) are indicators for if assets were sold.

Idiosyncratic before-tax real wages are calculated in the same way but exclude portfolio shares and the sale indicator.

Structural System Estimation

Model:

• idiosyncratic permanent-transitory wage and return processes (Lillard and Weiss, 1979; Baker, 1997, among others):

\[ \Delta \log(\text{wage}) = \delta_{it} + \Delta \rho_{it} + \Delta \epsilon_{it} \]

• permanent idiosyncratic innovation \( \rho_{it} \) for wages

• movement of transitory innovations \( \epsilon_{it} \) and \( \epsilon_{it-1} \)

• correlations of innovations \( \rho_{it} \) and \( \rho_{it-1} \)

Identification:

• to identify: \( \alpha_{it}, \rho_{it}, \rho_{it-1}, \rho_{it}, \rho_{it-1} \) and \( \epsilon_{it} \)

• over-identified using eleven moment conditions

• estimated in system via an iterated GMM

• heteroskedastic and serial correlation robust standard errors

Permanent idiosyncratic shocks to head's wages are correlated with the shocks to asset returns due to capital gains to housing.

Correlated Wage and Return Risk is Dependant on Age

Estimates

Transitory Idiosyncratic Return Risk is Sizable and Correlated with Head-of-Household's Permanent Innovations

Idiosyncratic permanent-wage and transitory return risk is highest for older and less wealthy households.

Implications

The substantial idiosyncratic risks that exist within all asset classes suggests that background risks may arise from all asset classes.

Transitory idiosyncratic risk to returns is observed concurrently with the household-specific returns observed by Fagereng et al. (2020) and Snudden (2021)

Quantitative models of return heterogeneity need to include both household-specific and transitory idiosyncratic components.

Studies that have include idiosyncratic risks for both returns and wages should include the correlation across these shocks.

Both the degree of return risk and correlation with wages places is primarily driven by primary housing, consistent with Cocco (2005).

References


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