Household Finance in General Equilibrium

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Abstract

“Rebalancing,” in the sense of selling stocks after a rise in the stock market and buying stocks after a fall in the stock market to restore a given stock share in the portfolio, is a common recommendation by financial advisors. But rebalancing in this sense is impossible in general equilibrium, since to every buyer there is a seller and to every seller there is a buyer. To examine the extent to which this and other common financial recommendations remain valid when general equilibrium constraints are imposed, we construct and compute an overlapping generations model of consumption, saving and portfolio choice in which agents differ both in their age (young, middle-aged, and old) and in their levels of risk aversion. We use Epstein-Zin-Weil preferences—which nest standard intertemporal expected utility preferences—to allow risk aversion and the resistance to intertemporal substitution to vary independently. We investigate each of two overlapping reasons why the “rebalancing” recommendation may be invalid: (a) non-i.i.d. returns and (b) stocks as a leveraged version of the risk in the economy. In addition to studying rebalancing, we also investigate whether the fact that agents who have a high propensity to hold stock gain more from a rise in the market generates a pricing multiplier.

Surprisingly, we find that such a multiplier exists regardless of whether there are differences in risk aversion between agents, whenever the middle-aged have positive stock holdings that they took on in their youth. However, our most striking finding is only tangentially related to rebalancing: we find that in a dynamic context, how risky things appear depends critically on both an agent’s age and risk aversion. Indeed, there are circumstances under which young agents with high risk aversion may view stocks as much less risky than young agents with low risk aversion. This is fundamentally because the biggest risk that a young saver faces is the risk that expected rates of return will fall, making it more difficult to accumulate savings to finance consumption in later years. The extent to which the covariance between this risk and stock returns matters depends on the level of risk aversion. In particular, mean reversion is much more reassuring to young agents with high risk aversion for whom the covariance between stock returns and subsequent expected returns matters more than for young agents with risk aversion close to one, whose risky asset choices depend only on short-run returns.