time after time with controllable risk. There will always be risk over any specific time frame, but a properly designed system can manage these risks through time in a sustainable way. Risk is no longer measured simply by some value of terminal wealth (as in the Samuelson paper), but by more complicated metrics of ongoing financial risk exposure to various cohorts of stakeholders. Paul Samuelson never said anything different.

The bottom line on this is that critics have the right to say that risks do exist, and need to be carefully measured and managed. And critics also have the right to express their honest opposition to collective systems (i.e. those involving inter-generational risk sharing) on political grounds.

But they do not have the right to invoke Paul Samuelson's proof within any blanket statement asserting that collective systems can't work because they are based on a fallacy. Implicit in any argument of this type is an assumption that a collective system can be simply decomposed into segments consisting of "classical" individual investors – but then they are no longer talking about a collective system, which is far more complicated in its risk dynamics.

Technical Endnote: Samuelson himself acknowledged in a 1989 paper ("The √N Law and Repeated Risktaking" in: Probability, Statistics, and Mathematics, Papers in Honor of Samuel Carlin) three separate cases, using different assumptions, where time frame would change a rational investor's risk tolerance. One of these is the simple one of including human capital in wealth. A second one recognizes that the original argument does not hold if markets are mean reverting (and there is substantial evidence that they are). The third involves an assumption set using a utility function that incorporates some minimum required threshold for terminal wealth, similar in concept to the one used in this essay. Samuelson was well aware of his own if then criteria.

Rowland Davis, FSA is the President at RMD Pension Consulting. He can be reached at *rowland-davis@mindspring.com*.

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