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# Dollar-Cost Averaging and Prospect Theory Investors: An Explanation for a Popular Investment Strategy

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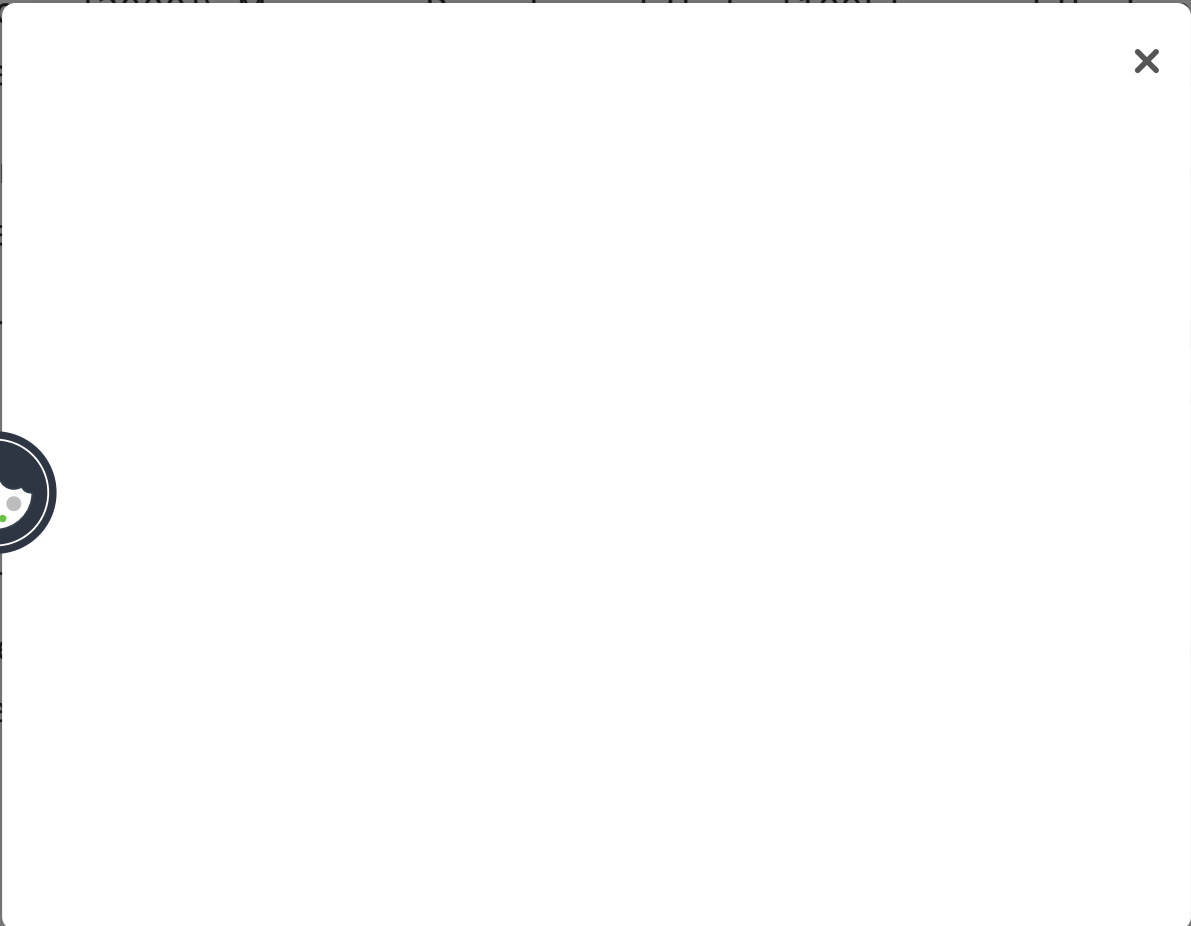
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# Notes

1. Fisher and Statman [1999] use a similar framework to analyze time diversification.
2. See Statman [1995], p. 74.
3. See Tversky and Kahneman [1992], p. 298.
4. As an example, Statman [1995] discusses defined-contribution pension plans, such as 401(k)s, where employees do not have an explicit choice between a lump sum investment and a dollar-cost averaging investment. See Statman [1995], p. 76.
5. Therefore, the results of Frühwirth and Mikula [2008] are not surprising. They compare a 10-year lump sum investment with a 10-year dollar-cost averaging strategy based on yearly payments. With a high equity risk premium, one would expect that the lump sum strategy dominates the dollar-cost averaging strategy over this long time horizon.
6. Prior studies also use a one-year time horizon to analyze dollar-cost averaging (e.g., [Williams and Bacon \[1993\]](#), Thorley [1994], Bacon et al. [1997], Abeysekera and Rosenblau [2000], Merton [2005], and Thorley [2005]). The underlying hypothesis that a one-year time horizon is used is that the performance of dollar-cost averaging over a one-year time horizon is superior to that of a lump sum investment.
7. Framing effects on decision making are discussed in prospect theory. The decision is presented in a way that influences the choice.
8. See Ingham [2000] for a discussion of the parameter  $\lambda$ .
9. Brandt and Dittmar [2000] show that the parameter  $\lambda$  is significantly positive.
10. See Ingham [2000] for a discussion of the properties of the prospect theory value function. The numerical example is given in the text.
11. See Ingham [2000] for a discussion of the properties of the prospect theory value function.



12. Abeysekera and Rosenbloom [2000] also base their simulations on a 20% annual stock market volatility.
  13. See Dimson et al. [2006]. They document a high volatility around 30% p.a. in the German, Italian, and Japanese stock markets over a long period of time (1900–2005).
  14. There may be other reference points, for example, the return target derived within an asset-liability analysis for a specific investor. However, such a reference point is highly investor-specific, and the results cannot be generalized. Furthermore, as other studies also use the zero return and the risk-free rate as reference points (e.g., Hens and Bachmann [2008]), we believe that this is a representative choice for our study.
  15. For simplification, we implemented a statistical test only for cumulative prospect values.
  16. The parameters recommended in Abdellaoui et al. [2005] are also used in the study of Breuer and Perst [2007].
  17. The risk-free rates are average values from the Frankfurt money market.
  18. As we simulate continuously compounded monthly returns with the geometric Brownian motion, we also analyze the statistical properties of the continuously compounded real return data. In this way, we see the fittings and the differences between
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