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Yindeng Jiang

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# Re: A Comment on “Introducing Excess Return on Time-Scaled Contributions”

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We appreciate the comments offered by Magni (2018). In Jiang (2017), we warn against potential violations of value additivity of EAIRR (economic average internal rate of return) and index-comparison-method (ICM)-based aggregate return on investment (AROI)—or more generally, the use of the economic or ICM-based assumptions in estimating capital values. Magni (2018) provides an argument against the warning. However, we believe Magni’s (2018) reading of our article is incorrect and hence the warning still stands.

Magni (2018) forces all assets to have the same starting date and ending date by adding artificial zero cash flows before or after an asset’s economic life. As explained in Magni (2013, F10), AIRR (or the calculation of capital values) depends on the asset’s operating or economic life, so the correct starting date and ending date to use for calculating capital values should be those corresponding to the asset’s economic life, not merely the time frame of the analysis. As an example, Magni calculates the capital value of asset A at period 2 as  $-4.39$  using the ICM-based approach. This is economically incorrect because we assumed the economic life of asset A is from period 0 to period 2 in Jiang (2017, Note 7). Therefore, the capital value of asset A at period 2 is by definition 0, as reported by Jiang (2017, Exhibit 7).

In practice, the economic life of assets in a portfolio is often not completely overlapping, so our warning against the potential violation of value additivity of the economic or ICM-based approaches is valid and practically relevant. In particular, as emphasized in Jiang (2017), one should not apply the economic or ICM-based assumption directly to a portfolio’s aggregated cash flows. We should instead apply the assumption to each individual asset, be mindful of the asset’s economic life, and then aggregate the capital values instead of the cash flows.

## REFERENCES

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