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## Aggregate Return on Investment and Investment Decisions: A Cash-Flow Perspective

Carlo Alberto Magni

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interest foregone on the capital that is given up by the investor. This perspective enables one to decompose the project net present value (NPV) into an excess-rate share and an excess-capital share. The traditional IRR is just a particular case of both AIRR and AROI, but the latter approach has the advantage that the IRR's nature (rate of return versus rate of cost) does not depend on the market rate and is unambiguously determined by the capital invested.

## Notes

Hazen (2003, 2009) and Magni (2010a) used the expression investment stream. In this article we prefer to use the expression capital stream, to avoid any misunderstanding.

The terminal value c\* T of the capital stream c\* is univocally determined by cash flow stream and market rate, which means, in general, that  $c^* + \neq 0$ .

This definition is essential in correctly interpreting the financial nature of the IRR. Until <u>Hazen (2003)</u>, the notion of investment and borrowing was connected to the sign of the outstanding capital c<sub>t</sub> (see Teichroew et al. 1965a, 1965b); but this perspective brings about unfavorable cases where the sign of ct changes over time, which implies that

neither ne project's financia 2003) definitio eps away such mix e of any project a

Note tha fore, an AIRR does does not chan

If  $0 < C^2$ rate

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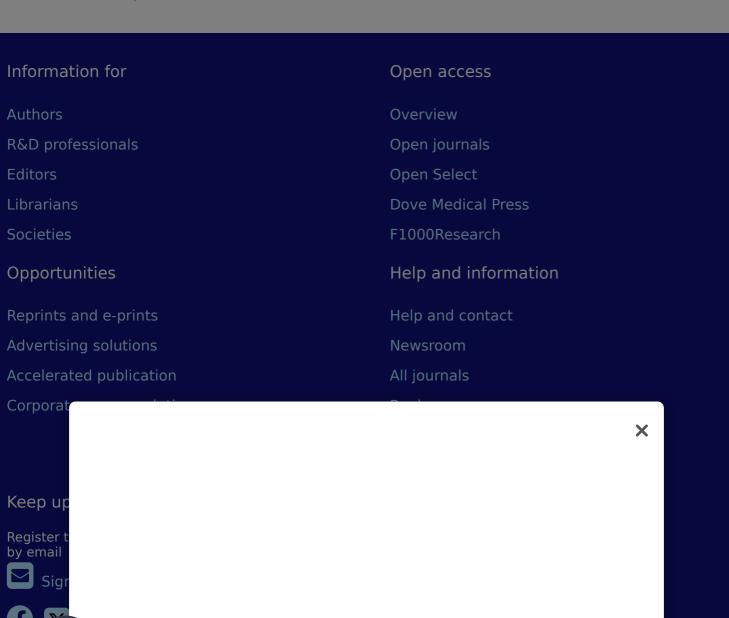
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PV-equiv latter, two or more capital streams are PV-equivalent if they share an equal  $PV(c \mid r)$ .

<u>0a)</u>. In the

The analyst does not even need fix the capital streams if the NCFC or the market-investment AROI is employed.







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