

HOW SHOULD WE MEASURE CAPITAL RETURNS?

By Shann Turnbull

There would appear to be a paradox between Present Value (P.V.) methods of evaluating investment returns and accounting conventions for reporting investment returns. The purpose of this contribution is to obtain views from members on how this paradox and its associated dilemmas might best be handled if not resolved.

Specifically I put to members three questions.

1. How should we measure capital returns.
2. How in theory or practice should we compare P.V. or D.C.F. returns with accounting returns when making or seeking (through a prospectus) investment decisions?
3. Must we conclude that the profitability of productive resources are hidden and reduced when held in corporate form, so allowing gross misallocation of resources in corporate market economies?

The crux of the paradox is that in P.V. or D.C.F. analysis depreciation cashflows are treated as a return of capital while accounting conventions treat them as a cost of capital. Accounting returns for investments with depreciation cashflows will thus generally be less than D.C.F. rates of returns. This is illustrated in Figure 1. for debt and equity investments, each having a cashflow profile with approximately the same P.V. or D.C.F. value. The debt investment could represent a 5 year deposit note yielding an annual interest rate of 15% after tax. The equity investment providing a 30% after tax cashflow for five years.

To establish a common definition for members to comment I would define a debt investment as one for which there is an enforceable contractual obligation to repay capital and an equity investment when there is no such obligation. Because future cash flows from equity investments are problematical depending both upon investment performance and such distribution discretions that may be exercised by management, the actual profitability of equity can only be measured after (ex post) the termination of all its cash flows. Any parameter used to estimate the profitability of any on-going equity investment must be merely estimates of the final result.

Because there is no enforceable obligation for equity investments to provide any cash flow return, there is no way in theory or practice that any emerging cash flow can be classified as to whether it is a return of or a return on capital. There are of course numerous accounting and tax conventions which artificially delineate equity cash flow returns into capital and income components so they may be measured as if they were from a debt investment. If the

actual life of the equity investment illustrated, which we could say was a bulldozer, was greater or less than that provided for by convention, then a capital gain or loss would be created. This only highlights the point that an actual (ex post) equity return (rather than the expected - ex ante - return) can only be determined at the end of the life of the investment.

Some alternative ways in which the debt and equity investments illustrated in Figure 1. can be evaluated are listed in the table below. For the simple and uniform cashflow profile used in the illustration some may appear redundant. However, it will be observed that even in this simplistic example the only investment criteria for evaluating the equity investment which has the same value for the debt investment is the criteria we chose to be identical. This raises the dilemma of which criteria to use.

Alternative measures of capital returns
relating to Figure 1.
5 year life or maturity

Criteria	Evaluation Method	Equity*	Debt
1.	Annual accounting profit as % of total investment expenditure.	10%	15%
2.	Accumulation of accounting profit as % of total investment expenditure.	50%	75%
3.	Average annual rate of accounting profit.	10%	15%
4.	Annual cash flow return (years 1 to 4) as % of investment cash flow.	30%	15%
5.	Accumulation of all cash flow returns as % of investment cash flow (payback).	150%	175%
6.	Net cash flow return as % of investment.	50%	75%
7.	Average rate of cash flow return.	30%	35%
8.	D.C.F. rate of investment entity (internal).	15.23825%	15%
9.	D.C.F. rate of financial asset holder (external).	10%*	15%
<u>30 years life or maturity</u>			
10.	D.C.F. rate of investment entity (internal).	30%	15%
11.	D.C.F. rate of financial asset holder (external)	10%*	15%

FIGURE 1.

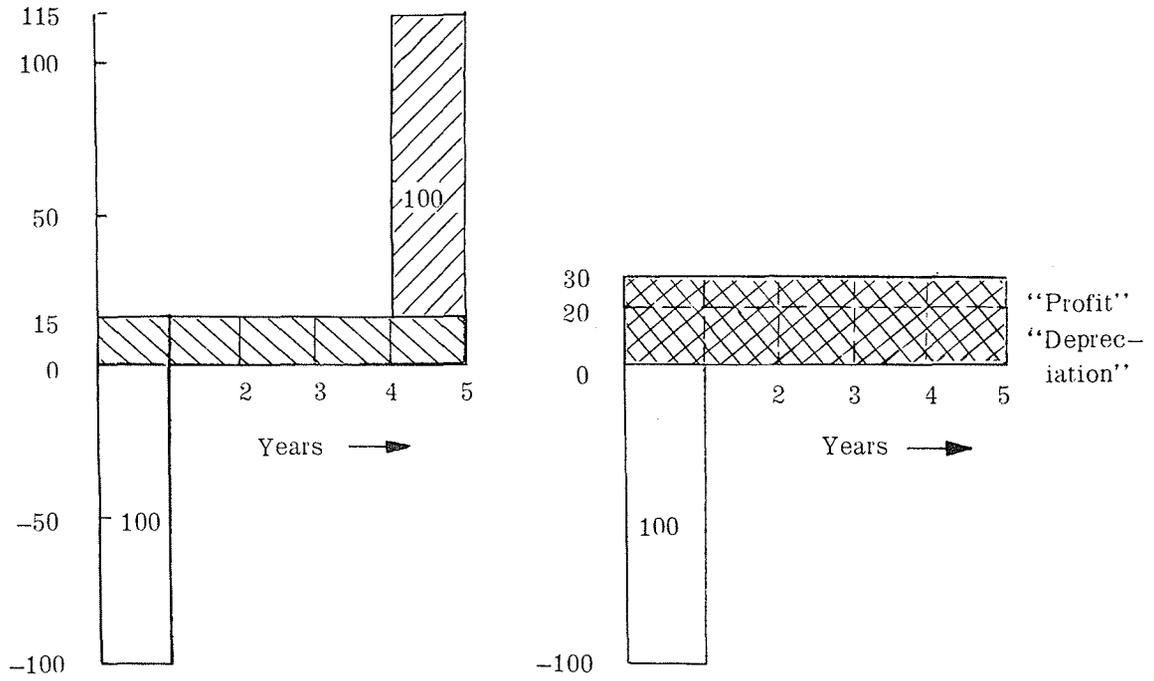
15% D.C.F. RETURN AFTER TAX FOR BOTH:

Debt With:

15% Cashflow rate of return

Equity With:

30% Cashflow rate of return



Total (A.T.) Cashflow Return 175

Total (A.T.) Cashflow Return 150

 Capital Cashflow

 Interest or Profit Cashflow

 Capital and Profit Cashflow undifferentiable

* Equity is in specie form except for criteria 9 and 11 when it is in the form of shares.

The last two criteria (Nos. 10 and 11) assume:

1. That the debt and equity investments illustrated continue for 30 or more years.
2. The longer life of the equity investment is achieved by the depreciation cashflows being utilised to purchase replacement capital equipment with exactly the same financial and operational performances.

Our confusion may be compounded if we consider the equity investment illustrated is made by a corporation. The corporation formed with the par value of its shares equal to 100% of the equity investment and having no debt and no other investments. Because of the archaic conventions of English Company Law the cash flow which can be returned to shareholders is by law limited to 10%, rather than the 30% produced. The sanctity of the law preventing dividends from being paid out of capital is, however, dependent upon accounting and tax conventions which may or may not be meaningfully related to the actual investment life.

Let us assume: (1) All "accounting profits" (10%) are distributed; (2) The actual life of our bulldozer was exactly the same as the 5 year depreciation expected; (3) The company was liquidated when the bulldozer was scrapped at the end of year 5 or sold as a corporate shell for the par value of its capital now held in cash. Then the original capital invested would be returned to shareholders in year 5 who would now only obtain a 10% D.C.F. rate instead of 15% as a non-corporate proprietor. Because the cash flow profile has been made equivalent to a debt return with one capital repayment, we have made the equity accounting return equal to its D.C.F. return.

If the retained cash flow from our bulldozer (equal to the depreciation allowance) was re-invested in new equipment with a similar cash flow rate of return per unit of investment, then the internal D.C.F. rate would overtime rise from 15% to 30% (compare criteria 8 and 10). The accounting rate of return would, however, remain indefinitely at 10%. (Compare criteria 9 and 11). Only 10% dividends could thus be distributed and the shareholder's D.C.F. rate would remain fixed at 10% rather than rising with the internal rate. The corporate shareholders of the bulldozer company perceive a rate of return which is only 1/3 of that perceived by the corporate managers!

Must we conclude that the profitability of productive resources are hidden and reduced when held in corporate form, so allowing gross misallocation of resources in corporate economies? The misallocation occurring between competing equity opportunities of similar cash flow rates, but different life expectations and between debt and equity investments. It will be noted that on most methods of evaluation the debt investment looks more attractive than the equity.

If the answer to the last question is in the affirmative, then the remedies would be to:

- (a) Change corporate law to allow companies to freely distribute cash flow to which is assigned the character of "capital" and/or allow companies to purchase their own shares as is the U.S.A. practice, and to:
- (b) Change the tax law so that cash flows to which is assigned the character of "profits" are not taxed twice when distributed to shareholders, so discouraging cash flow distributions of this nature being made.

What are the views of members on the methods and use of measuring capital returns?