

DUAL RATES

THE ENGLISH APPROACH

*100 INTRODUCTION

Dual rates are used in the UK largely to value leaseholds. Its use has been criticised because of the :-

- (1) low sinking fund rates available, and
- (2) need to reflect income tax penalties.

However, it has been defended as the only way that ephemeral investments such as leaseholds and extractive industries can be compared with alternative investments elsewhere.

*110 INWOOD v HOSKOLD

Hoskold developed the dual rate method to overcome certain inherent deficiencies in the Inwood single rate method.

"The main problem was that management normally evaluated projects on a single rate basis at a rate which reflected all the risks involved and reinvestment at this risk rate was not considered to be a practical assumption"

- Greaves, 1980

*120 IRR

The Inwood method is based on the internal rate of return (irr);

"It is that rate which discounts all returns to equal the original investment. The IRR is generally considered to be the result of calculation rather than a specified or desired (given) rate of return".

- AIREA

This does not deal with the reinvestment problem for an investment such as a head lease. For example, is it assumed in IRR that the income is reinvested? The answer is no. Therefore, simple IRR is probably a good measure for ephemeral investments.

Hoskold tried to overcome these problems with the dual rate method.

*130 HOSKOLD'S METHOD

(1) The income is apportioned between return on investment & replacement of capital.

(2) The replacement of capital is made at the reinvestment rate (sinking fund rate).

(3) Some investments showed a high IRR (eg. mines). It is impractical to assume that the investor would reinvest at that high rate.

Under the dual rate method the sinking fund rate is always substantially below the return on investment (reumuneration rate). *But need not be*

For example, remuneration rate: 25%
Sinking fund rate: 15%

*140 CALCULATING DUAL RATES

Example

Present value of \$1000 pa, 3 years at 20% pa.

Inwoods

$$\begin{aligned}
 \text{AMT} &= (1+.2)^3 & \text{PV} &= 1/\text{AMT} & r &= 0.2 \\
 \text{PV PMT} &= 0.2 & & & & \\
 &= \frac{1 - \text{PV}}{r} & &= \frac{1 - 0.5787}{0.2} & &= \underline{2.106}
 \end{aligned}$$

$$\text{PV } \$ 1000 \text{ PA} = 2.106 \times 1000 = \underline{2107}$$

Hoskold

Remuneration rate 25% pa.
Sinking fund rate 15% pa.
Cost of investment say \$ 2100.

For each \$1000 income; $.25 \times 2100 = \$525$
leaves $1000 - 525 = 475$ to replace capital
Replacement of capital;

$$\begin{aligned}
 &3\text{N } 15\%i \text{ 475 PMT CPT FV } \quad \quad \quad \$ \underline{1650} \\
 &\text{Therefore, } \$2100 \text{ is too much. Reduce to } \$1800 \\
 &1000 - (.25 \times 1800) = 550. \\
 &3\text{N } 15\%i \text{ 550 PMT CPT FV } \quad \quad \quad \underline{1910}
 \end{aligned}$$

Therefore the price paid with the Hoskold method is between \$1800 and \$1900.

Single Rate

$$\begin{aligned}
 (1) \quad &20\% \times 2107 = 421.4 \\
 &1000 - 421.4 = \underline{578.6} \text{ pa.}
 \end{aligned}$$

$$(2) \quad 3\text{N } 20\%i \text{ 578.6 PMT CPT FV } \underline{2106}$$

The irr method assumes that the capital is locked up in the investment.

*150 EXAMPLE OF THE IRR APPROACH

Suppose \$2487 is placed in a bank deposit.

<u>Year 1</u>	<u>Capital Outstanding</u>	<u>Income</u>	<u>Interest 10%</u>	<u>Capital withdrawn</u>
1	2487	1000	249	751
2	1735	1000	174	826
3	909	1000	91	909
				<u>2486.</u>

The capital withdrawn is capital back in hand. The bank only pays interest on the money in the account (at 10%).

Single rate which assumes reinvestment at 6% can hardly be compared with single rate assuming reinvestment at 20%. Therefore the advantage of dual rates is that both can be compared at the same rate of investment.

*160 HOSKOLD'S SOLUTION

Hoskold's solution was to introduce the sinking fund rate (SFR) as opposed to irr.

"The SFR has meaning only as a return each year on total outlay and not on capital outstanding and is thus different in concept from the irr". - Greaves, 1980.

*170 MODERN THOUGHT
TRUE RATE OF RETURN (TRR)

TRR is based on a practical reinvestment rate.

REINVESTMENT PROBLEM

The TRR method assumes that the whole cash flow (not only the replacement of capital) is reinvested at the SFR.