Dividends in a Classical Tax System

Most countries operate a classical tax system. This means that a firm's profit is taxed at the company level and again at the personal level when the firm pays a dividend.

If a company earned pre-tax profit of \$1 and corporate taxes were 30% then \$0.30 of tax would be paid at the company level.

If the all of the remaining after-tax profit of \$0.70 was paid as a dividend, and the shareholders' personal marginal tax rate was 15% then \$0.105 (=0.70*0.15) of tax would be paid at the personal level.

So overall tax would be \$0.405 or 40.5% in a classical system.

Dividends in an Imputation Tax System

Australia, New Zealand and Malta operate under an imputation system, so company tax paid by firms can be refunded to shareholders when a fully franked dividend is paid.

Franking credits and imputation credits are synonyms. They are both tax credits. In Australia, only Australian-domiciled investors can use franking credits.

Most countries, including the US and China, operate in a classical tax system where dividends are double-taxed. Once at the company level and again at the personal level. The imputation system avoids the double-taxation of dividends.

Example: Dividends in an Imputation Tax System

Question: A firm earns \$1 before tax. The company tax rate is 30%.

All of the firm's net income is paid out as dividends (a 100% payout ratio) and they are fully franked.

What is the shareholder's personal tax liability if she has a personal marginal tax rate of 15%?

Answer: The company would have paid corporate tax of \$0.30 on its \$1 of pre-tax earnings. The after tax earnings would be \$0.70 and all of it is paid as a dividend.

Since the \$0.70 cash dividend is fully franked (franking proportion fp = 1), it will have \$0.30 worth of franking credits attached to it:

FrankingCredit =
$$\frac{\text{CashDiv}}{(1 - t_c)} \cdot t_c \cdot \text{fp}$$

= $\frac{0.7}{(1 - 0.3)} \times 0.3 \times 1$
= 0.3

Notice that the franking credit equals the corporate tax paid since the dividend is fully franked.

When a shareholder receives their fully franked \$0.70 cash dividend, they work out their tax liability as follows.

First the dividend is 'grossed up' by adding the franking credit: GrossedUpDiv = CashDiv + FrankingCredit = 0.70 + 0.30= 1.00

Then the personal tax owing is calculated on the grossed up dividend, less the franking credits. Assume that the investor has a 15% personal marginal tax rate ($t_p = 0.15$):

PersonalTaxOwing = GrossedUpDiv.t_p - FrankingCredit

 $= 1.00 \times 0.15 - 0.30$ = -\$0.15 Since the personal tax owing is negative, the investor will actually receive a tax refund! They will be sent a Reserve Bank cheque in the mail.

Notice that overall, the tax paid on the original \$1 of profit before tax was \$0.30 at the company level, and -\$0.15 at the personal level. So the overall tax was \$0.15, which is 15% of the \$1 pre-tax profit. This is the investor's personal marginal tax rate, which illustrates the beauty of an imputation system: overall, investors are taxed at their personal marginal tax rates.

The imputation system avoids double-taxing.

Most people calculate the franking credits as we did above by working out the franking credit, the grossed up dividend and then the personal tax owing:

PersonalTaxOwing = GrossedUpDiv.t_p - FrankingCredit

It's also possible to combine all steps into a single formula:

PersonalTaxOwing = $\frac{\text{CashDiv}}{(1 - t_c)} \cdot (t_p \cdot [1 - t_c \cdot (1 - fp)] - t_c \cdot fp)$

$$= \frac{0.7}{(1-0.3)} \cdot (0.15 \times [1-0.3 \times (1-1)] - 0.3 \times 1)$$
$$= -0.15$$



FrankingCredit =
$$\frac{\text{CashDiv}}{(1 - t_c)} \cdot t_c \cdot \text{fp}$$

= GrossedUpDiv. $\frac{t_c \cdot \text{fp}}{(1 - t_c \cdot (1 - \text{fp}))}$

GrossedUpDiv = CashDiv + FrankingCredit

$$= \frac{\text{CashDiv}}{(1 - t_{c})} \cdot (1 - t_{c} \cdot (1 - fp))$$

PersonalTaxOwing = GrossedUpDiv.t_p - FrankingCredit

$$= \frac{\text{CashDiv}}{(1 - t_c)} \cdot (t_p \cdot [1 - t_c \cdot (1 - fp)] - t_c \cdot fp)$$

Where:

- t_p = Shareholder's personal marginal tax rate.
- $t_c = Company's corporate tax rate.$

fp = Franking proportion. One for fully franked dividends, zero for unfranked dividends.

Grossed up dividend equals cash dividend plus franking credits. Note that foreign tax paid overseas does not generate Australian franking credits.

If the dividend is fully franked (fp = 1), then the corporate tax paid on the earnings will equal the franking credits (CorpTaxPaidOnDiv = FrankingCredit).

Example: Partially Franked Dividends

Question: A firm pays \$8,709 of cash dividends to an Australian shareholder with \$933 of franking credits attached.

Find the shareholder's personal tax liability if her personal marginal tax rate is 45% and the corporate tax rate is 30%.

Answer: GrossedUpDiv = CashDiv + FrankingCredit

= 8,709 + 933 = 9,642

PersonalTaxOwing = GrossedUpDiv. t_p – FrankingCredit = 9,642 × 0.45 – 933 = 3,405.9 *Example sourced from MarketIndex's Case Study 2, Investor 3:* <u>https://www.marketindex.com.au/franking-</u> <u>credits#:~:text=Case%20Study%20%232%20%2D%20Partia</u> <u>lly%20Franked</u>

Alternative answer using franking proportion (fp):

If the franking proportion was one (fp=1), then the fully franked credits would have been:

FullyFrankedCredit =
$$\frac{\text{CashDiv}}{(1 - t_c)}$$
. t_c . **fp**
= $\frac{8,709}{(1 - 0.3)} \times 0.3 \times 1$
= 3,732.42857

Therefore the franking proportion must be:

 $fp = \frac{PartiallyFrankedCredit}{FullyFrankedCredit} = \frac{933}{3,732.42857} = 0.24997$

To calculate the personal tax owing:

PersonalTaxOwing = $\frac{\text{CashDiv}}{(1 - t_c)} \cdot (t_p \cdot [1 - t_c \cdot (1 - fp)] - t_c \cdot fp)$

 $=\frac{8,709}{(1-0.3)} \times (0.45 \times [1-0.3 \times (1-0.24997)] - 0.3 \times 0.24997)$

 $= 12,441.4286 \times (0.45 \times [0.774991] - 0.074991)$

= 3,405.9