Share Repurchases with Information Costs

Shares of Alumine currently trade at $90/share with 1.5 million shares outstanding. Management, however, thinks that based on projected cash flows, the share price should be $100/share. Management decides to repurchase 100,000 shares at the current market price.

a) How much cash does Alumine distribute to its shareholders through this program?

b) From the point of view of management, what is the value of the claim of shareholders before and after the repurchase?

c) From the point of view of management, what is the value of a share after the repurchase? How does this compare to the initial management analysis of the share price and why?

d) Suppose that management instead thought that, based on projected cash flows, the current share price (before the repurchase) should be $80/share. How would your analysis above change?

e) Based on your calculations above, how would you expect the stock price to react to a repurchase announcement?

f) How large can this reaction be before the firm decides changes its mind about the share repurchase?

Solution:

a) $90 \times 100,000 \text{ shares} = $9 \text{ million payout}$

b) Before purchase, value = $100/\text{share} \times 1.5 \text{ million shares} = $150 \text{ million}$

   After purchase, value = $150 \text{ million} - $9 \text{ million} = $141 \text{ million}$

c) Management's share value = $141 \text{ million}/(1.5 \text{ million} - 100,000) = $100.71/\text{share}$

   The share price rises because the firm is able to repurchase shares at less than their "true value" (based on cash flows); this is a positive NPV undertaking, so the value of shares rises.

d) The payout is the same since the market price doesn't change. Value before purchase becomes $80/\text{share} \times 1.5 \text{ million shares} = $120 \text{ million}$; Value after purchase becomes $120 \text{ million} - $9 \text{ million} = $111 \text{ million}$, or $111/1.4 = $79.29/\text{share}$. Thus, value falls because the repurchase program pays "too much" for the shares since the market price exceeds the present value of cash flows.

e) When a firm undertakes a share repurchase, its value rises if shares are underpriced but falls if shares are overpriced. Firms have an incentive to repurchase if they conclude that their shares are undervalued, but not otherwise. Thus, the market should take a repurchase announcement as a signal that shares are undervalued, and thus the market price should rise (which it does).

f) In the undervalued case, if the market share price rose from $90 to $100 when the repurchase was announced, then the effect of the actual share repurchase on the value of the firm would be: payout = $100 \times 100,000 \text{ shares} = $10 \text{ million}$; value after repurchase = $150 \text{ million} - $10 \text{ million} = $140 \text{ million}$, or $140/(1.4) = $100/\text{share}$. 
Thus, shareholders are indifferent to the repurchase (as in the perfect markets case). If the share price rose from $90 to less than $100, the firm is still better off doing the repurchase; if it rises to more than $100, the firm is worse off by doing the repurchase.

Payout Policy

General Dynamics Corp. is a military systems manufacturer which produces nuclear submarines and artillery systems. It announced a dividend of 37.5 cents per share on the 15th of January.

a) General Dynamic's (GD) stock went ex-dividend today. The stock priced closed last night at $70.40. It opened this morning at $70.25. How can you explain the fall in the stock price in a (semi-strong form) efficient market? Explain briefly.

b) Defense contracts and thus business for defense contractors has been shrinking. Since there were fewer contracts in which to invest, GD had built up a large cash stock pile. This was public information. The manager's of GD decided to pay a special (one-time) dividend of $1 billion. On the announcement of the special dividend the total value of GD's equity rose by $.3 billion. How can you explain the rise in the stock price in a (semi-strong form) efficient market? Explain briefly.

c) Imagine that as in part b. above, GD announces a special dividend, but that they also announce that the dividend will be financed with a new issue of debt. In this case would you expect the stock price reaction to be more or less positive than it was in part b? Explain briefly.

Solution:

a) The effect of the dividend should be to reduce the price of the stock by 37.5 cents on the ex dividend date. However, many other factors affect the price of a stock, so the one day change need not exactly equal the amount of the dividend. (A tax argument can also be made that the dividend effect need not be one-for-one.)

b) This is consistent with market efficiency. If GD has few good investment opportunities, it makes sense for them to pay out the money to shareholders for a number of reasons: (i) due to the relatively high corporate tax rate, corporations should not invest too much in securities, and (ii) they may be tempted to spend the money on negative NPV projects. The money is therefore likely to be more valuable in the hands of shareholders.

c) If the dividend is financed with debt, the reaction is likely to be less positive. The debt issue means that the dividend does not remove the cash from the control of the management. Also, if GD is not very profitable they probably don't need the tax shields from the debt, so the debt is of little value in itself.