Market efficiency & WACC

Efficiency of the London Stock exchange market

Level 5

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# INTRODUCTION

An efficient capital market is one in which it is not possible to earn a higher return on assets (shares, bonds, treasury bills, options, etc.) invested in than the market return Allen, Brealey and Myers (2011). In an efficient market all available information on assets is incorporated into the stocks and the investors cannot earn a risk-weighted return. In strongly efficient markets, current prices of stocks reflect all information which does not have to be publicly available. In strongly efficient markets relying on insider information to make profits on trading is not possible.

## THE LONDON STOCK EXCHANGE

### Dependence on successive price changes as a weak efficient market indicator

(Libberton, 2010) in their quantitative empirical research study prove that the London stock exchange (LSE) is not weak for efficient based on their criteria analysis that the correlation tests that were conducted revealed that there was little evidence to suggest dependence in successive price changes of the shares listed on the LSE and the FTSE 100 itself.

### Information incorporation into stock market prices as an efficient market indicator

The stocks market prices indexed in the London stock exchange incorporate all information relevant for their pricing.

(Campbell et al., 2017) in their study show that both insider information and market trends influenced the movements in stock prices in earlier years trading at the London stock exchange.

(Friederich and Payne, 2002) show that there exists a relationship between information on a stock and its price which influences the decisions made by a risk averse trader by extending the efficient markets models.

### The London Stock exchange as an efficient market as per insider trading information 2018

(Danilova, 2010) investigates and concludes that there exists an equilibrium between dynamic private information of the insider and minimal restrictions on the admissible trading strategies. The insider buys the stock when its fundamental is overestimated by the market rather than the stock price.

(Moore and Braggion, 2010) support asymmetric information theories on dividend policy to have an impact on their studies of dividend policy in 469 British firms in the London stock exchange over agency theories.

It is not possible to use insider information to gain profit in trading by stock brokers and traders in the London stock exchange. (Kyriacou, Luintel and Mase, 2009) mention that there exists insider trading in the UK and the London stock exchange.

## Conclusion

Most literal and empirical, academic and industry research supports the London stock exchange to be an efficient market as per the requirements of an efficient market and the well debated efficient markets hypothesis.

(Augustus and Novickyte, 2014) collaborates the studies of founder of the efficient markets hypothesis, (Gibson G, 1889), who published a book on the London, Paris and New York stock exchanges, citing that stock valuation is a voting process where participants vote according to the information they have about the direction the stock price will take. This, in itself qualifies the London stock exchange to be an efficient market.

# Weighted average cost of capital AstraZeneca 2018

The prevailing government bond rate in the UK that is applicable as the risk free rate of return for AstraZeneca Wacc calculations was 0.75% and the core tax rate for discounting the credit risk rate was 14%.

The equity returns calculations are done using the Capital asset pricing model where the returns are equal to risk free rate of return plus the company’s beta multiplied by the market rate minus the risk free rate of return.

The return on debt was calculated using the 2.2% prevailing interest rate on debt reported on page 162 of their 2017 financial statements plus addition of the adjusted 1% credit risk rate times the tax discount rate of one minus 0.14 0r 14% prevailing tax rate.

The total weightings for the WACC calculations were extracted from the equity and total debt totals in the 2017 financial statements. The three year prevailing market share price for AstraZeneca plc ordinary per share price as per the London stock exchange of $0.25 was used in the CAPM and WACC calculations.

Return on debt = (debt interest + credit risk rate) (1-Tax rate)

CAPM = Risk free rate + Beta (Market rate – Risk free rate)

## Financial calculations results

The results of the financial calculations done in excel were as follows:

Table 1 Capital asset pricing model for the return on equity used in WACC calculations

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CAPM | Risk free rate of return | beta | beta(Market rate - Risk free rate) | Cost of equity |
| COST OF EQUITY | 0.075 | 1.16 | 0.203 | 0.278 |

Table 2 Cost of debt calculations

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| COST OF DEBT | Debt interest rate | credit risk premium | (1-Tax rate) | Return on debt for wacc |
| COST OF DEBT | 0.022 | 0.01 | 0.86 | 0.0001892 |

Table 3 Weighted average cost of capital calculations

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ALTRAZENEKA WACC 2017 | AMOUNT MILLION DOLLARS $ | W = TOTAL/E OR D | RETURNS R | W\*R |
| TOTAL EQUITY E | 16,642 | 2 | 0.278 | 0.575461002 |
| LONG TERM INTEREST BEARING LOANS AND BORROWINGS D | 17,807 | 1.93457629 | 0.0001892 | 0.000366022 |
| TOTAL | 34,449 |  | WACC | 0.575827024 |

## Conclusion

The leverage position is very high for AstraZeneca with $17,807 million exceeding equity of $ 16642 million which is not a good capital structure position. The WACC of 57.58 % is also quite high as a minimum expected return on all long term financiers of the company.

The company’s financial statements show a dividend of $3,519 million which is quite high for an operating profit EBIT of $3677 million for the year considering taxes $641 million and net finance interest expense of $1395 million for the year despite the reported high percentages increases in revenue.

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