Mini Case 3

Name of the Writer

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**1**

 If Stephenson wishes to maximize it total market value than the best option for financing would be to issue debt (Cole and Sokolyk, 2018). There are a multiple of reasons why the issuance of debt is much more beneficial than the issuance of equity. Modigliani and Miller famous irrelevance theorem stated that if the tax effects are ignored than leverage cannot have an effect on the value of firm. But upon careful reconsideration and taking into account the tax effects they changed the theorem and stated that there is a positive relationship between debt and value of firm (Brusov, et al, 2018). It was further argued that by keeping a higher debt to Equity ratio, companies can reap higher profits. But the offset is that a company should not use debt beyond its target or selected level. This is due to the fact that higher the debt the higher the chance of bankruptcy.

**2**

In order to form the market value balance sheet of Stephenson, market value of the firm needs to be calculated primarily. This is due to the fact that the company is entirely financed by equity.

So the market value of the firm would be:

Number of Outstanding shares = $12 million$

Share Price = $\$53.80$

Market Value = $12,000,000\*53.80$

Market Value = $645,600,000$ = $\$645.6 million$

Taking these into account the market value balance sheet would be

|  |  |  |  |
| --- | --- | --- | --- |
| Assets | 645,600,000 | Equity | 645,600,000 |
| Total number of Assets | 645,600,000 | Debt and Equity | 645,600,000 |

**3**

**a)**

 In order for a project to be accepted, the NPV of the project needs to be positive. This shows that the present values of net cash inflows is higher than the values of net cash outflows. So in order to calculate the value

Value for purchasing the land = $49 million

Profit before tax = $11.5 million

Tax rate = 21%

Earnings after Tax = $11,500,000\*(1-0.21)$

Earnings after Tax = $\$9,085,000$

Present value of cash inflow is calculated as:

Present value of earning= $\frac{Constant annual earnings }{discount rate}$

Present value of earning= $\frac{9085000 }{10.5\%}$

Present value of earning= $\$86523809.52$ = $\$86523810$

So in order to calculate the net present value, the cash inflows needs to be subtracted from cash outflows.

NPV = $\$49,000,000-86523810$

NPV = $\$37,523,810$

**b)**

 With the purchase of land there would an influx in the value of the firm by same amount as the NPV calculated above. So taking into account efficient market hypothesis, the market value of a firm needs to rise in order to reflect the value of the firms NPV (Goh, et al, 2017).

Market value of shares =$645,600,000+37,523,810$

Market value of shares =$\$683,123,810$

The effect of this would be like this on the market value balance sheet

|  |  |  |  |
| --- | --- | --- | --- |
| Assets | 645,600,000 | Equity | 683,123,810 |
| NPV | 37,523,810 | Debt | 0 |
| Total number of Assets | 683,123,810 | Total | 683,123,810 |

Keeping these calculations in mind, the share price of the firm would be

Share price = $\frac{Market value of equity}{Number of outstanding shares}$

Share price = $\frac{683123810}{12000000}$

Share price = $56.92

Share issue

The initial investment is $49 million and the share price is $56.92. So the number of shares to be issued

Share issue = $\frac{49000000}{56.92}$

Share issue = 860857

**c)**

Market value of the balance sheet would be affected somewhat. So the appearance of the market value balance sheet before purchasing land and after issuing new equity would be.

|  |  |  |  |
| --- | --- | --- | --- |
| Cash | 49,000,000 |  |  |
| Assets | 645,600,000 | Equity | 732,123,810 |
| NPV | 37,523,810 | Debt | 0 |
| Total number of Assets | 732,123,810 | Total | 732,123,810 |

Shares outstanding

Total shares outstanding = 12,000,000 + 860857

Total shares outstanding = 12,860,857

Share price

Share issue = $\frac{732123810}{12860857}$

Share issue = $56.92

The share price will not be affected at all.

**d)**

Present value of earnings = $\frac{9085000 }{10.5\%}$

Present value of earning= $\$86523809.52$ = $\$86523810$

Market value balance sheet after the purchase has been made will look like this

|  |  |  |  |
| --- | --- | --- | --- |
| Asset | 645,600,000 | Equity | 731223810 |
| Present value of earnings | 86523810 | Debt | 0 |
| Total | 731223810 | Total | 731223810 |

**4**

**a)**

If purchase is made using debt, then market value

Value of levered firm = Value of unlevered firm + present value of tax shield on debt

Calculating present value of tax shield on debt

Present value of tax shield on debt = $49000000\*0.21$

Present value of tax shield on debt = 10,290,000

Value of levered firm = 731223810 + 10,290,000

Value of levered firm = 741513810

**b)**

Market value balance sheet

|  |  |  |  |
| --- | --- | --- | --- |
| Value of levered firm | 741513810 | Equity | 702803810 |
| Present value of tax shield | 10,290,000 | Debt | 49000000 |
| Total | 751803810 | Total | 751803810 |

Share price

Share issue = $\frac{702803810}{12000000}$

Share issue = $56.85

**5**

|  |  |
| --- | --- |
|  | Stock price |
| Using debt finance | $58.57 |
| Using equity finance | $56.92 |

 It can be clearly seen that by using the debt financing method the share price is higher than the share price using with financing. Then using debt financing is the best option.

References

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