

# **FIN 521: Case 4: Blaine Kitchenware**

Due on Tuesday, April 3, 2018

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## Question 1

## Question 2

The current capital structure and payout policies of the firm are not appropriate since there are lots of benefits from using debt. Of course, increasing leverage makes firm's revenue risky, but on the current status, compensation from increasing leverage is much larger since the current amount of debt is zero. Most of firms which uses debt has larger market-to-book ratio, and larger ROE than Blaine Kitchenware. Assuming that industrial background among the firms are negligible, it justifies the argument that Blaine should raise debt. It is reasonable to increase D/V ratio to 17.09%, which is the average D/V ratio of other firms.

## Question 3

- a) 1) From exhibit 3 of the case, we can find cash, enterprise value, debt, and equity of the firm at 2006. Table 1 shows the balance sheet before announcement.

Asset		Liabilities	
Cash	230,866	Debt	0
Enterprise Value	728,730	Equity	959,596

Table 1: Balance sheet before announcement

- 2) After the announcement but before any debt issuance or repurchase is made, under perfect market, the balance sheet does not change because the announcement itself does not affect capital structure and systematic risk of the firm. Therefore, the balance sheet after announcement is same as Table 1.
- 3) After the firm issue 100,000(thousand dollars) amount of debt, debt increases and cash also increases on balance sheet. Therefore, the balance sheet of the firm changes to Table 2. Equity value and enterprise value does not change.

Asset		Liabilities	
Cash	330,866	Debt	100,000
Enterprise Value	728,730	Equity	959,596

Table 2: Balance sheet after issuing debt(Perfect market)

- 4) After repurchase, 300,000 amount of cash decreases, and the same value of equity also decreases. Although market value of equity decreased, because the same amount of cash also decreased, therefore,

enterprise value does not change. Furthermore, since number of shares also decreased, stock price also does not change. Stock price before repurchase is \$16.25 per share, so the number of share

Asset		Liabilities	
Cash	30,866	Debt	100,000
Enterprise Value	728,730	Equity	659,596

Table 3: Balance sheet after repurchase(Perfect market)

repurchased is equal to  $300,000/16.25 = 18,461$ , and the number outstanding share is decreased to  $59,052 - 18,461 = 40,591$ . Hence, the new share price is equal to  $659,596/40,591 = 16.25$ , which is same as the price before repurchase.

- b) 1) Before the announcement, the balance sheet is same as Table 1.
- 2) Unlike answers in question a)-2), the balance sheet does change because there is tax benefit if debt is issued and cash is decreased, and equity value reflects the benefit. Increase in equity value would be same as present value of tax benefit from issuing debt and decrease in cash. Present value of tax shield from debt is calculated by multiplying interest expense to corporate tax rate, and discounting at cost of debt. Assuming Blaine's credit rating is Baa, corporate bond yield is equal to 6.72%. Therefore, interest expense at each fiscal year is calculated as  $100,000 \times 6.72\% \times 30.76\% = 2,067.072$ . Therefore, present value of income tax shield from issuing debt is equal to  $\frac{2,067.072}{0.06} = 34,451.2$ . Assuming amount of cash on balance sheet grows at risk-free rate, if the firm does not repurchase stock, it should pay  $200,000 \times 5.10\% \times 30.76\% = 3,137.52$  for tax every year. (We used 30-year US treasury rate as risk-free rate.) Therefore, by using perpetuity formula, the present value of tax benefit from cash deducting is equal to  $\frac{3,137.52}{0.06} = 52,292$ . Hence, after the announcement of stock repurchase, equity value would increase by  $34,451.2 + 52,292 = 86,743.2$ . Since other accounts are constant, enterprise value would also increase by 86,743.2 thousand dollars. Table 4 represents balance sheet after the announcement under market in which corporate tax exists. Since the number of outstanding share in

Asset		Liabilities	
Cash	230,866	Debt	0
Enterprise Value	815,473.2	Equity	1,046,339.2

Table 4: Balance sheet after announcement(Imperfect market)

2006 is 59,052 and it remains constant after the announcement, stock price per share would increase to  $1,046,339.2/59,052 = \$17.72$ .

- 3) Like question a)-3), issuance of debt increases both debt and cash by 100,000. Table 5 represents the balance sheet after issuance of debt. It does not affect enterprise value.

Asset		Liabilities	
Cash	330,866	Debt	100,000
Enterprise Value	815,473.2	Equity	1,046,339.2

Table 5: Balance sheet after issuing debt(Imperfect market)

- 4) The repurchase of stock makes cash and equity decrease by 300,000. Table 6 represents the result after repurchase of shares. The repurchase does not make stock price change because the information of repurchase was already reflected before the actual repurchase. The amount of share repurchased

Asset		Liabilities	
Cash	30,866	Debt	100,000
Enterprise Value	815,473.2	Equity	746,339.2

Table 6: Balance sheet after repurchase(Imperfect market)

is equal to  $300,000/17.72 = 16,930$ . Therefore, the number of outstanding share decreases to 42,118. Since the new equity value is equal to 746,339, the new share price is equal to  $746,339/42,118 = 17.72$ , which is same as the price before repurchase.

## Question 4

- a) Table 7 shows balance sheet before and after repurchase. The \* mark indicates accounts which changes after repurchase. We assumed that the firm uses cash first and liquidates marketable securities to repurchase shares. Since cash and marketable securities decreases, current asset and total asset also decreases. On liabilities, long-term debt increases by 100,000 by the issuance, and shareholder's equity decreases by 300,000 by repurchase. Table 8 shows income statement before and after repurchase. Since cash and marketable securities decreases, other income(which is interest income from its position) also decreases. Since debt is issued, interest expense is added to the income statement. Consequently, because EBT changes, income tax also changes, and net income changes.
- b)
- c)
- d)
- e)
- f)

g)

### **Question 5**

a)

b)

### **Question 6**

<i>Assets:</i>	2006	2006(New)
Cash & Cash Equivalents*	66,557	0
Marketable Securities*	164,309	30,866
Accounts Receivable	48,780	48,780
Inventory	54,874	54,874
Other Current Assets	5,157	5,157
<b>Total Current Assets</b>	<b>339,678</b>	<b>139,678</b>
Property, Plant & Equipment	174,321	174,321
Goodwill	38,281	38,281
Other Assets	39,973	39,973
<b>Total Assets</b>	<b>592,253</b>	<b>392,253</b>
<i>Liabilities &amp; Shareholders' Equity:</i>		
Accounts Payable	31,936	31,936
Accrued Liabilities	27,761	27,761
Taxes Payable	16,884	16,884
<b>Total Current Liabilities</b>	<b>76,581</b>	<b>76,581</b>
Long-Term Debt*		100,000
Other liabilities	4,814	4,814
Deferred Taxes	22,495	22,495
Total Liabilities	103,890	203,890
Shareholders' Equity*	488,363	188,363
<b>Total Liabilities &amp; Shareholders' Equity</b>	<b>592,253</b>	<b>392,253</b>

Table 7: Balance sheet before and after repurchase

<i>Operating Results:</i>	2006	2006(New)
<b>Revenue</b>	342,251	342,251
Less: Cost of Goods Sold	<u>249,794</u>	<u>249,794</u>
<b>Gross Profit</b>	92,458	92,458
Less: Selling, General & Administrative	28,512	28,512
<b>Operating Income</b>	63,946	63,946
Plus: Depreciation & Amortization	9,914	9,914
<b>EBITDA</b>	73,860	73,860
 <b>EBIT</b>	 63,946	 63,946
Plus: Other Income (expense)	13,506	1,806
Less: Interest Expense*		<u>6,720</u>
<b>Earnings Before Tax</b>	77,451	59,031
Less: Taxes*	23,821	18,156
<b>Net Income</b>	53,630	40,876
Dividends	28,345	28,345

Table 8: Income statement before and after repurchase