Subject code: FIN 2600

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Room: 2A220

Professor: Dave Jaye

Team name: Go for it

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Problems and Projects

17-1. From the descriptions below please identify what *type* of business loan is involved.

a. A temporary credit supports construction of homes, apartments, office buildings, and other permanent structures.

b. A loan is made to an automobile dealer to support the shipment of new cars.

c. Credit extended on the basis of a business's accounts receivable.

d. The term of an inventory loan is being set to match the length of time needed to generate cash to repay the loan.

e. Credit extended up to one year to purchase raw materials and cover a seasonal need for cash.

f. A securities dealer requires credit to add new government bonds to his securities portfolio.

g. Credit granted for more than a year to support purchases of plant and equipment.

h. A group of investors wishes to take over a firm using mainly debt financing.

i. A business firm receives a three-year line of credit against which it can borrow, repay, and borrow again if necessary during the loan's term.

j. Credit extended to support the construction of a toll road.

Based upon the descriptions given in the text the type of business loan being discussed is:

Answer:

A. Interim construction financing.
B. Retailer financing or floor planning loan.
C. Asset-based financing or factoring.
D. Self-liquidating inventory loan.
E.Working capital loan.
F. Security capital loan.
G. Term loan.
H. Acquisition loan or leveraged buyout.
I. Revolving credit line.
J. Project loan.
(李彪, Eric Li, 5201335059, checked by Nico Tu, 5201335055, on April 6, 2017)

Commented [DJ1]: Good job 100%

17-2. As a new credit trainee for Evergreen National Bank, you have been asked to evaluate the financial position of Hamilton Steel Castings, which has asked for renewal of and an increase in its six-month credit line. Hamilton now requests a $7 million credit line, and you must draft your first credit opinion for a senior credit analyst. Unfortunately, Hamilton just changed management, and its financial report for the last six months was not only late but also garbled. As best as you can tell, its sales, assets, operating expenses, and liabilities for the six-month period just concluded display the following patterns:

Millions of Dollars	**January**	**February**	**March**	**April**	**May**	**June**
Net sales	$48.1	$47.3	$45.2	$43.0	$43.9	$39.7
Cost of goods sold	27.8	28.1	27.4	26.9	27.3	26.6
Selling, administrative, and other expenses	19.2	18.9	17.6	16.5	16.7	15.3
Depreciation	3.1	3.0	3.0	2.9	3.0	2.8
Interest cost on borrowed funds	2.0	2.2	2.3	2.3	2.5	2.7
Expected tax obligation	1.3	1.0	0.7	0.9	0.7	0.4
Total assets	24.5	24.3	23.8	23.7	23.2	22.9
Current assets	6.4	6.1	5.5	5.4	5.0	4.8
Net fixed assets	17.2	17.4	17.5	17.6	18.0	18.0
Current liabilities	4.7	5.2	5.6	5.9	5.8	6.4
Total liabilities	15.9	16.1	16.4	16.5	17.1	17.2

Hamilton has a 16-year relationship with the bank and has routinely received and paid off a credit line of $4 million to $5 million. The department's senior analyst tells you to prepare because you will be asked for your opinion of this loan request (though you have been led to believe the loan will be approved anyway, because Hamilton's president serves on Evergreen's board of directors).

What will you recommend if asked? Is there any reason to question the latest data supplied by this customer? If this loan request is granted, what do you think the customer will do with the funds?

Commented [DJ2]: You didn't answer this question. Your score is 85%

Answer:

According to the information given by the topic, we can clearly see that the Hamilton management staff due to lack of sufficient experience, resulting in a lot of problems. The most direct is the decline in sales. Because of the decline in income, the company has to rely more on liabilities, rising current liabilities, the position of banks is no longer so safe, we should be more careful to consider the relationship with Hamilton. We should collect more information, such as the financial statements of the past few years, development plans in the next few years and the economic situation of the companies with cooperative relationships. After these information, we can better evaluate Hamilton.

(李彪, Eric Li, 5201335059, checked by Nico Tu, 5201335055, on April 6, 2017)

17-3. From the data given in the following table, please construct as many of the financial ratios discussed in this chapter as you can and then indicate what dimension of a business firm's performance each ratio represents.

Business Assets		**Annual Revenue and Expense Items**	
Cash account	$60	Net sales	$600
Accounts receivable	155	Cost of goods sold	445
Inventories	128	Wages and salaries	52
Fixed assets	286	Interest expense	28
Miscellaneous assets	96	Overhead expenses	29
	725	Depreciation expenses	12
Liabilities and Equity		Selling, administrative, and other expenses	28
Short-term debt:	108	Before-tax net income	6
Accounts payable	117*	Taxes owed	1
Notes payable	325*	After-tax net income	5
Long-term debt (bonds)	15		
Equity capital	160		
	725		

*Annual principal payments on bonds and notes payable total $55. The firm's marginal tax rate is 35 percent.

Answer:

Expense control ratios

$\frac{\text{Wages and salaries}}{\text{Net sales}} = \frac{52}{600} = 0.08666$

$\frac{\text{Overhead expenses}}{\text{Net sales}} = \frac{29}{600} = 0.04833$

$\frac{\text{Depreciation expenses}}{\text{Net sales}} = \frac{12}{600} = 0.02$

$\frac{\text{Interest expenses}}{\text{Net sales}} = \frac{28}{600} = 0.0466$

$\frac{\text{Cost of goods sold}}{\text{Net sales}} = \frac{445}{600} = 0.7416$

$\frac{\text{Taxes}}{\text{Net sales}} = \frac{1}{600} = 0.00166$

$\frac{\text{Selling, administrative, and other expenses}}{\text{Net sales}} = \frac{28}{600} = 0.0466$

Operating Efficiency Measures

Inventory turnover ratio= $\frac{\text{Annual cost of goods sold}}{\text{Average inventory}} = \frac{445}{128} = 3.476$

$\frac{\text{Net sales}}{\text{Total assets}} = \frac{600}{725} = 0.8275$

$\frac{\text{Net sales}}{\text{Fixed assets}} = \frac{600}{286} = 2.0979$

$\frac{\text{Net sales}}{\text{Account receivable}} = \frac{600}{155} = 3.8709$

Average Receivable collection period = $\frac{\text{Accounts receivable}}{(\text{Net sales}/360)} = \frac{155}{(600/360)} = 93.373\text{days}$

Coverage Measures

Interest coverage= $\frac{\text{income before interest and taxes}}{\text{Interest payments}} = \frac{34}{28} = 1.214$

Coverage of interest and principal payments$=\dfrac{\text{income before interest and taxes}}{\text{Interest payment}+\dfrac{\text{principal repayments}}{\text{1-Firm's marginal tax}}}$

$=\dfrac{34}{28+55/(1-35\%)}=53.3\%$

Marketability of product or service measures

GPM$=\dfrac{\text{Net sales – Cost of goods sold}}{\text{Net sales}}=\dfrac{600-445}{600}=0.2583$

NPM$=\dfrac{\text{Net Income after taxes}}{\text{Net sales}}=\dfrac{5}{600}=0.00833$

Profitability Measures

Before-tax net income/Total Assets$=\dfrac{6}{725}=0.008275$

After-tax net income/Total Assets$=\dfrac{5}{725}=0.00689$

Before- net income/Net worth$=\dfrac{6}{160}=0.0375$

After-tax net income/Net worth$=\dfrac{5}{160}=0.03125$

Before-tax net income/Net sales$=\dfrac{6}{600}=0.01$

After-tax net income/Net sales$=\dfrac{5}{600}=0.00833$

Liquidity Measures

Current ratio=current assets/current liabilities=343/225=1.524

Acid-test ratio= current assets-inventories/current liabilities= (343-128)/225=0.955

Net liquid assets= current assets-current liabilities=343-128-225=-10

Working capital= current assets-current liabilities=343-225=118

Leverage ratio

Total liabilities/total assets=565/725=0.779

Total liabilities/net sales=565/600=0.9416

Capitalization ratio=Long-term debt/long-term debt+ net worth

=325/ (324+160) =0.6701

（张 琳, Wendy Zhang, 5201335007, checked by Nico Tu, 5201335055, on April 6, 2017）

Commented [DJ3]: Excellent 100%

17-4. Grape Corporation has placed a term loan request with its lender and submitted the following balance sheet entries for the year just concluded and the pro forma balance sheet expected by the end of the current year. Construct a pro forma Statement of Cash Flows for the current year using the consecutive balance sheets and some additional needed information. The forecast net income for the current year is $210 million with $50 million being paid out in dividends. The depreciation expense for the year will be $100 million and planned expansions will require the acquisition of $300 million in fixed assets at the end of the current year. As you examine the pro forma Statement of Cash Flows, do you detect any changes that might be of concern either to the lender's credit analyst, loan officer, or both?

Grape Corporation
(all amounts in millions of dollars

	Assets at the End of the Most Recent Year	Assets Projected for the End of the Current Year		Liabilities and Equity at the End of the Most Recent Year	Liabilities and Equity Projected for the End of the Current Year
Cash	$ 532	$ 600	Accounts payable	$ 970	$1,069

Accounts receivable	1,018	1,210	Notes payable	2,733	2,930
Inventories	894	973	Taxes payable	327	216
Net fixed assets	2,740	2,940	Long-term debt obligations	872	1,072
Other assets	66	87	Common stock	85	85
			Undivided profits	263	473
Total assets	$5,250	$5,810	Total liabilities and equity capital	$5,250	$5,810

Answer:
Increase in accounts receivable:
$1210 - $1018 = $192

Increase in inventories:
$973 - $894 = $79

Increase in other assets:
$87 –$66 = $21

Increase in accounts payable:
$1069 –$970 = $99

Decrease in tax payable:
$216 –$327 = $-111

Increase in notes payable:
$2930 –$2733 = $197

Increase in long-term debt:
$1072 –$872 = $200

Cash flow statements of Grape Corporation (unit: million)	
Cash Flows from Operations	
Net income	$210
Add:	
Depreciation	$100
Less:	
Increase in accounts receivable	($192)
Increase in inventories	($79)
Increase in other assets	($21)
Add:	
Increase in accounts payable	$99
Less:	
Decrease in tax payable	($111)
Net cash flow from operations	**$6**
Cash Flows from Investment Activities	
Acquisition of fixed assets	($300)
Net cash flow from investment activities	**($300)**
Cash Flows from Financing Activities	
Increase in notes payable	$197
Add:	
Increase in long-term debt	$200
Less:	
Dividends paid	($50)
Net Cash Flows from Financing Activities	**$347**
Increase in Cash ($6 - $300 + $347 = $53)	**$53**

Analysis:

By examine the Cash flow statements of Grape Corporation, the company's operation should be concerned by the lender's credit analyst, loan officer.

Firstly, the company got few profits from the company's operation, only $6 million, because of the amount of money in accounts receivable.

Secondly, the company did not get any profits from the company's Investment Activities.

Thirdly, the company although the company got reasonable profits from the company's Financing Activities, nevertheless most of the profits was came from notes payable and long-term debt.

（涂宇翔, Nico Tu, 5201335055, checked by Nico Tu, 5201335055, on April 6, 2017）

Commented [DJ4]: Bravo! 100%

17-5 Blue Jay Corporation is a new business client for First Commerce National Bank and has asked for a one-year, $10 million loan at an annual interest rate of 6 percent. The company plans to keep a 2.75 percent, $3 million CD with the bank for the loan's duration. The loan officer in charge of the case recommends at least a 4 percent annual before-tax rate of return over all costs. Using customer profitability analysis (CPA), the loan committee hopes to estimate the following revenues and expenses which it will project using the amount of the loan requested as a base for the calculations:

Estimated Revenues	Estimated Expenses
Interest income from loan?	Interest to be paid on customer's $3 million deposit?
Loan commitment fee (0.75%)?	Expected cost of additional funds needed to support the loan (4%)?
Cash management fees (3%)? (on an annual average of $15 million)	Labor costs and other operating expenses associated with monitoring the customer's loan (2%)?
	Cost of processing the loan (1.5%)?

a. Should this loan be approved on the basis of the suggested terms?

b. What adjustments could be made to improve this loan's projected return?

c. How might competition from other prospective lenders impact the adjustments you have recommended?

Answer:

Estimated revenues:

Interest income from loan	\$10,000,000 × 6.00%	\$600,000
Loan commitment fee	\$10,000,000 × 0.75%	\$75,000
Cash management fee	\$15,000,000 × 3.00%	\$450,000
Total revenues		\$1,125,000

Estimated expenses:

Interest on deposit	\$3,000,000 × 2.75%	\$82,500
Expected cost of additional funds	\$10,000,000 × 4.00%	\$400,000
Labor costs and other operating costs	\$10,000,000 × 2.00%	\$200,000
Costs of processing the loan	\$10,000,000 × 1.50%	\$150,000
Total expenses		\$832,500

Net amount of the bank's reserves expected to be drawn

Average amount of credit committed to customer	\$10,000,000
Less: Average customer deposit balances	\$3,000,000
Net amount of loanable reserves supplied to customer	\$7,000,000

a.The loan should be approved because the income is greater than the cost. (\$1,125,000-\$832,500>0)

b.There are two ways to increase the rate of return on loans, the first is to raise the fees, and the second is the lender to reduce the cost of loans.

c. If the customer can get the same service from other lenders, I recommend that you reduce the fees charged or charge a lower interest rate. So we can have an advantage when we face a competitor.
（葛宇, Tracy Ge, 5201335029, checked by Tracy Ge, 5201335029, on April 7, 2017）

Commented [DJ5]: Bravo! 100%

17-6. As a loan officer for Allium National Bank, you have been responsible for the bank's relationship with USF Corporation, a major producer of remote-control devices for activating television sets, DVDs, and other audio-video equipment. USF has just filed a request for renewal of its $10 million line of credit, which will cover approximately six months. USF also regularly uses several other services sold by the bank. Applying customer profitability analysis (CPA) and using the most recent year as a guide, you estimate that the expected revenues from this commercial loan customer and the expected costs of serving this customer will consist of the following:

Expected Revenues		**Expected Costs**	
Interest income from the requested loan (assuming annualized loan rate of 4%)	—?	Interest paid on customer deposits (2.50%)	—?
Loan commitment fee (1%)	100,000	Cost of other funds raised	180,000
Deposit management fees	4,500	Account activity costs	5,000
Wire transfer fees	3,500	Wire transfer costs	1,300
Fees for agency services	4,500	Loan processing costs	12,400
		Recordkeeping costs	4,500

The bank's credit analysts have estimated the customer probably will keep an average deposit balance of $2,125,000 for the period the line is active. What is the expected net rate of return from this proposed loan renewal if the customer actually draws down the full amount of the requested line for six months? What decision should the bank make under the foregoing assumptions? If you decide to turn down this request, under what assumptions regarding revenues, expenses, and customer deposit balances would you be willing to make this loan?

The expected revenues and costs from continuing the present relationship between Allium National Bank and USF Corporation were given in this problem and the reader is asked to estimate the expected net rate of return if the bank renews its loan to USF.

The total of expected revenues and expected costs is:

Expected revenues	Expected Costs
312,500	**229,762.5**

Answer:
Interest income from the requested loan=（10,000,000*4%）/360*(6*30)
=200,000

Interest paid on customer deposits =（2,125,000*2.5%）/360*(6*30）
=26,562.5

Expected revenues = Interest income from the requested loan+Loan commitment fee +Deposit management fees+Wire transfer fees+Fees for agency services
= 200,000+100,000+4,500+3,500+4,500
=312,500

Expected Costs = Interest paid on customer deposits + Cost of other funds raised +Account activity costs + Wire transfer costs +Loan processing costs + Recordkeeping costs
=26,562.5+180,000+5,000+1,300+12,400+4,500
=229,762.5

Net Amount of the Bank's Reserves Expected to Be Drawn upon by This Customer This Year

Average Amount of Credit committed to customer	$ 10,000,000
Less: Average Customer deposit Balances (net of required reserves)	- 2,125,000
Net amount of loanable reserves supplied to customer	$7,875,000

Before-tax rate of return over costs from the entire lender-customer relationship
= (Revenues expected-Costs expected)/Net amount of loanable reserves supplied to customer

= (312,500-229,762.5)/7,875,000
=0.0105=1.05%

Because the expected net rate of return from this proposed loan renewal only 1.05%. So the bank will turn down this request.
If have the greater regarding revenues and the less expenses, I am willing to make this loan.

(王心怡, Miranda Wang, 5201335013, checked by Nico Tu, 5201335055, on April 6, 2017)

Commented [DJ6]: Excellent. 100%