

Chapter 20: Solutions

Problem 1							
a. True							
b. True							
c. False							
Problem 2							
Firms usually do not change their dividends very frequently. This is what is meant by "sticky" dividends.							
Part of the reason for "sticky" dividends is that firms are reluctant to cut dividends, because of the fear that markets will punish them. Consequently, they do not increase dividends unless they believe that they can maintain these higher dividends.							
Problem 3							
Cutting dividends may send a very negative signal to markets. When firms announce that they will be cutting dividends, markets assume the worst, i.e, that the firm is in serious financial trouble, and the company's stock price usually drops sharply.							
Problems 3a and 3b							
See contributed problems and solutions							
Problem 4							
If there are no tax differences in the treatment of dividends and capital gains, and firms can raise external financing at little or no cost, it can be argued that dividends are irrelevant. Large, financially strong firms with primarily tax-exempt or low-tax rate investors may fit this description best.							
Problem 5							
No. This tax disadvantage was particularly applicable in the United States prior to 1986 for high-tax rate individual investors. It does not apply to tax exempt investors or to corporations.							
Problem 6							
It should reduce the amount it pays in dividends. The problem it might run into is communicating this intent to the market. Since its existing stockholders like dividends, the announcement is likely to lead to some of them selling the stock, causing the stock price to drop.							
Problem 7							
An increase in dividends suggests to markets that the firm has the confidence that its future cash flows will be high enough to continue making these dividend payments. This confidence is the positive signal that might lead markets to increase their assessment of the firm's value. The empirical evidence is supportive, with stock prices increasing on dividend increases.							
Problem 8							

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Yes. If a firm that is believed to have great projects/high growth prospects increases dividends, it may send the signal that its project choice is narrowing. There seems to be no empirical evidence to support this hypothesis, though.			
Problem 9			
$(\text{Price before} - \text{Price After}) = (1 - t(\text{ordinary})) / (1 - .4 t(\text{ordinary}))$			
Solving for the ordinary tax rate,			
$3.5/5 = (1 - t_o)/(1 - .4t_o)$			
Ordinary tax rate =	$0.30/0.72 =$	<b>41.67%</b>	
Problem 9a			
See contributed problems and solutions			
Problem 10			
Company	Price change	Dividend	Price change/Dividend
NE Gas	2	4	0.5
SE Bell	3	4	0.75
Western Elec	5	5	1
As a tax-exempt investor, you make returns based upon the difference between the price drop and the dividend. Consequently, you will make excess returns on the first two stocks. On both an absolute and percentage basis, NE Gas is your best bet.			
Problem 11			
Assume that the true capital gains tax rate = $\text{Stated Rate}/(1 + R_f)^n$			
$(P_b - P_a) = (1 - t_o) / (1 - t_{cg})$			
$(\$ 10 - \$ 9.20) = (1 - .5) / (1 - .5/1.1^n)$			
Solving for n,			
n = approximately 3 years			
Problem 12			
Tax rate on dividends = (40%) (.15) =		6%	
Tax rate on capital gains =		28%	
Expected price drop on ex-dividend day = $(\$0.50) (1 - .06)/(1 - .28) =$		\$ 0.65	
Problem 13			
I would expect the price to drop since the actual price increase of 4% is less than the expected (or usual) price increase of 5%.			
Problem 14			
The stock price may react negatively. The dividend may signal that Microsoft's project choice is becoming			

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	less attractive, and this will have negative consequences for future growth and project returns. In addition, stockholders in Microsoft are likely to be oriented to capital gains and may not like the dividends.						
Problem 15							
	I would expect the price reaction to be positive. The price increase in this case may send a positive signal to financial markets. The answer is different in this case, because the auto parts industry is a more stable one than the software business (reducing the negative signalling implications of the dividend increase). Furthermore, the fact that the company already pays a substantial dividends implies that its stockholders will be less averse to receiving more in dividends.						
Problem 16							
	The price reaction will be more muted. Since the 35 analysts following the firm are likely to dig up any "positive" information about the company, the dividend increase at the margin conveys less information than it would for a smaller firm.						
Problem 17							
	I would expect it to decline. The preceding news on earnings and revenues has probably already conveyed the message that the firm is in financial trouble to financial markets. The decline in dividends, however, may cement this message by indicating that management believes that the earnings decline is not a short term phenomenon.						
Problem 18							
	I would expect the stock price reaction to be positive. The fact that RJR Nabisco was under stockholder pressure to begin with suggests that their assets were making below-market returns. Selling such assets would therefore be a positive action; returning the cash to stockholders would add to this reaction because it eliminates the chance that this cash will be invested in other poor projects.						
Problem 19							
	I would expect bond prices to drop. Selling assets (especially liquid ones) and paying dividends makes these bonds much riskier.						

Capital Structure Changes

Problem 20								
1. Signalling effects: A regular dividend should send out a stronger positive signal than either a special dividend or a stock buyback.								
2. Tax Effects: A stock buyback may have less negative tax consequences for some investors in the stock than dividends.								
3. Sustainability: A regular dividend presumes that the firm will have similar cash flows in the future to sustain the dividend.								
Problem 21								
An equity repurchase will generally provide a smaller signalling benefit than a regular dividend because it is viewed as a one-time occurrence. A regular dividend on the other hand brings with it the expectation of similar dividends in the future. A special dividend is also a one-time occurrence and should provide no signalling advantages over equity repurchases.								
Problem 22								
a. No. The earnings per share will increase only if the return on assets exceeds the after tax cost of borrowing.								
b. No. The risk will increase as leverage increases and the stock price may go down even with higher EPS.								
c. If the increase in earnings per share more than offsets the higher risk from increased leverage, the price will go up.								
Problem 23								
	Without	With						
	Borrowing	Borrowing						
EBIT	20	20						
Interest Exp.	0	4.8						
EBT	20	15.2						
Taxes	10	7.6						
Net Income	10	7.6						
# Shares	100000	60000						
EPS	100	126.666667						
b. The interest rate on debt would have to be 12.5% for the EPS effect to disappear.								
Problem 24								
Forward contracts to buy equity are riskier than announcements of buybacks because they represent legal obligations to buy stock at a stated price. The firm does not have the option to back down.								
Problem 25								
I would recommend a split up of the firm into tobacco and food companies. A major barrier to such an action might be covenants in bond agreements protecting bondholders who might be hurt by such an action.								
Problem 26								
No. The split off will not solve the problem because incumbent management (which is the problem) is still running the firm. I would recommend breaking up the firm and selling its component parts to outsiders, or a split off where incumbent								

Capital Structure Changes

management explicitly disavows control in the split off entities.								
Problem 27								
There may be several factors behind the positive reaction to spin offs. First, the spun off division may be worth more as an independent entity than as part of a larger company (a reverse synergy argument). Second, the spun off division may be freer to pursue plans it could not pursue as part of the larger entity, either because of of regulatory concerns or corporate culture. Finally, the very act of the spin off may force analysts to look at the value of the spun off entity and realize that they have been undervaluing it.								
Problem 28								
No. Given the preponderance of investment that is institutional investment and the fact that the price is only \$ 50 (rather than \$ 400 or \$ 500), I do not believe that this action is going to increase the investor base for the company. While I would expect an initial positive reaction to the split, this increase will be sustained only if the firm follows up with positive news that confirms the signal sent by the split - i.e., that higher earnings and stock prices will follow.								
Problem 29								
I would expect the stock price reaction to be negative. A stock dividend is a cosmetic event with no cash flows associated with it and cannot replace a cash dividend.								
Problem 30								
The positive reaction can be explained by several factors. First, the action suggested that the management of the firm was aware that they had a problem and were willing to deal with it. Second, the split up units had more independence and were no longer burdened by the policies and practices of the other units. Third, it allowed each of the split up units to reveal their assets and earning power separately making it easier to value the component parts.								
Problem 31								
Spinning of the nonregulated businesses may relieve them of the burden of having to worry about the consequences of their actions for the regulated parent company. It will also allow them to set dividend and financing policy which is more consistent with their own interests.								
Problem 32								
Spin offs and split offs may make it easier to value firms since they isolate the assets of the entity being valued. It is easier to estimate risk parameters for the entity if it is traded separately. This benefit should be greatest when complex firms with financial statements that are difficult to break down and analyze.								
Problem 33								
The spin off will add to the value of the firm only if the corporate costs are excessive or unnecessary, and thus can be reduced or eliminated without hurting the divisional profitability. If on the the other hand, the corporate costs represent costs that would now have to be borne by the independent divisions, the spin off should not increase value.								
Problem 34								

Capital Structure Changes

No. I do not think Nabisco's stockholders will be satisfied. While one of the objectives for the spin off - separating the contaminated tobacco division from the food division - may have been accomplished, the other - removing management that they view as incompetent - would not.						
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