**Corporate Finance 5163**

**Spring 2017**

**Professor:** Don Cunningham, PhD

**Office Hrs:** after class (11 – 11:30 T and Th)

1 – 3 pm Monday

1 - 2:30 pm Tuesday

11 – 2:30 pm Thursday

 Other times by appointment

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**TEXT**

Principles of Corporate Finance by Brealey, Myers, and Allen – Concise Edition 1st or 2nd edition or 9th edition of the extended/non-concise edition. (Syllabus refers to chapters and problems in 2nd edition)

**TITLE IX OFFICE**

If you or someone you know would like help related to an experience of sexual violence including sexual assault, harassment, domestic violence, dating violence, stalking or other type of non-consensual sexual conduct, please contact Kristan Tucker, the Title IX Coordinator at Baylor University, by email (Kristan\_Tucker@baylor.edu) or phone (254-710-8454).

## BAYLOR UNIVERSITY HONOR SYSTEM

Ethics are an integral feature of all personal, social, and professional considerations. Competency in thinking ethically and accepting responsibility for one's actions is essential to personal and professional development. Baylor graduates are committed to their intellectual, ethical, professional, and social development throughout life.

Baylor MBA students have affirmed their commitment to ethical and professional conduct specifically agreeing in writing to the following:

* Affirmation of Expectations of Professional and Academic Conduct
* Guidelines for Citations and References
* Constitution of the Baylor University Honor System

**CLASS ATTENDANCE**

University policy concerning absenteeism is detailed in the Class Attendance section of the Student Handbook. The policy states: "A student who misses more than 25 percent of the class meetings of a course automatically fails." As per university policy: "The student bears the responsibility for the effect absences may have upon class participation, announced and unannounced examinations, written assignments, reports, papers and other means of evaluating performance in a course."

On-time attendance is required for all classes. Students must be in their seats and ready for class at the scheduled start time of the class in which they are officially enrolled. A late arrival to a class will be counted as an absence from the class and, therefore will be subject to the university absenteeism policy.

**PLAGIARISM**

Students agree that by taking this course, all required papers, exams, class projects or other assignments submitted for credit may be submitted to turnitin.com or similar third parties to review and evaluate for originality and intellectual integrity. A description of the services, terms and conditions of use, and privacy policy of turnitin.com is available on its web site: [http://www.turnitin.com](http://www.turnitin.com/). Students understand all work submitted to turnitin.com will be added to its database of papers. Students further understand that if the results of such a review support an allegation of academic dishonesty, the course work in question as well as any supporting materials may be submitted to the Honor Council for investigation and further action.

**COURSE DESCRIPTION**

This one-hour module is the concluding module on strategic Corporate Financial Management. It builds on the principles of optimal project selection introduced in FIN 5161 and expanded on in FIN 5162. In this concluding module, we focus on the financing strategies for the firm’s projects. In general, the sources of financing are either debt or equity. With equity, the financing can either be internal, i.e. retaining earnings vs. paying earnings out as dividends; or external, i.e. issuing debt vs. issuing equity. Special consideration is given to the issue of taxation and its impact on the decision to pay or not pay dividends and the decision to issue debt or equity. We conclude with a discussion of conflicts (agency problems) that can occur between managers and stockholders, managers and customers, stockholders and bondholders, and how these conflicts can be optimally resolved, including the role of risk management.

**MBA LEARNING GOALS**

The learning goals for the MBA program are:

1. To understand and apply theoretical knowledge in integrated fundamental areas of accounting, economics, finance, information systems, marketing, operations management, organization behavior, quantitative business analysis, and strategic management;

2. To think critically, to solve problems effectively, and make decisions strategically across functional areas;

3. To work collaboratively with others in cross-functional teams, and to motivate, lead, and mentor others;

4. To articulate ideas and information effectively and persuasively in every business context.

5. To apply core ethical values of integrity, accountability, and service in all circumstances.

**COURSE OBJECTIVES**

**FIN5163 Learning Objectives:**

Toward the achievement of the MBA Program Learning Goals cited above (MBA program learning goal #1 is designated as the primary goal for FIN5163), the following learning objectives are established for FIN5163:

1. ***To develop a full understanding of why firms elect to pay or not pay dividends (i.e. dividend policy) and to understand the implications this dividend policy on the value of the firm’s stock and for making sound management decisions.***
2. ***To understand the impact of financing projects/fixed assets with debt versus equity (i.e. capital structure policy) on the cost of capital, on the value of stock, and for making sound management decisions.***
3. ***To understand the tax implications of dividend policy and capital structure policy for both the firm and its shareholders.***

**Correlations between Course Objectives and**

**MBA Healthcare Administration Specialization Competencies**

**Objective** (below) refers to specific Leaning Objective cited above

|  |
| --- |
| **DOMAIN 2 – Critical Thinking and Analysis** |
| **1. Critical Thinking and Analysis: The ability to understand a situation, issue, or problem by breaking it into smaller pieces or tracing its implications in a step-by-step way.**  **Objective: c** |
| **2. Innovative Thinking: The ability to apply complex concepts, develop creative solutions, or adapt previous solutions in new ways. Objective: a** |
|  |
| **DOMAIN 3 – Business and Management Knowledge** |
| 1. **Financial Skills: The ability to understand and explain financial and accounting information, prepare and manage budgets, and make sound long-term investment decisions. Objective: b**
 |

**COURSE REQUIREMENTS**

**Exams:**

**Two exams** are offered for this module; however, only the first is required. The first exam is comprehensive and is given at the end of the 5 week module. If you are satisfied with the grade on the exam, then it will determine 80% of your grade. If you are not satisfied with your performance on this exam, then you have the option of taking a second comprehensive exam one week later. If you take both exams, then the first counts 40% and the second counts 40%, for a total grade contribution of 80%.

**Class Participation:**

Class participation counts the remaining 20%. At the end of the module I will assign a numerical grade for participation based on my assessment of whether you were:

* Thoughtful and engaging with subject content questions = 90 - 100,
* Responding with appropriate answers to my questions = 85 - 90,
* Asking other questions = 80 - 85
* Present, taking notes, unable to answer content questions = 70 - 80
* Not present = < 70

 **GRADING SCALE**

A 92 -100 points C+ 78-79

 A- 90-91 “ C 72-77

 B+ 88-89 “ C- 70-71

 B 82-87 “ D 50-69

B- 80-81 “ F 49 and below

**Class Schedule:**

|  |  |
| --- | --- |
|  **Learning Objectives .** **Tuesday 1/10 - Dividend Policy*** Define Dividend Policy
* Develop “Dividends are Good” arguments
* Determine best cost/benefit analytics to evaluate dividend policy, considering Time Value of Money, CAPM, WACC, and Goal of the Firm
* Simulate a firm, raise dividends, and utilize best analytics to determine if “Dividends are Good”

**Thursday 1/12 - Dividend Policy*** Investigate the impact of Stock Buybacks
* Investigate the impact of Stock splits
* Develop “Dividends are Bad” tax argument
* Develop Dividend tax conversion strategy
* Consider Dividends as Signals
* Consider the impact of corporate governance on Dividend policy

**Tuesday 1/17 - Dividend Policy*** Practice Implementing Dividend Policy

**Thursday 1/19 - Debt Policy*** Identify reasons that incurring debt may be considered “bad” policy, (i.e. the costs)
* Identify reasons that incurring debt may be considered “good” policy, (i.e. the benefits)
* Identify financial variables that measure the “good (benefit)” and the “bad (cost)” reasons for incurring debt
* Create a firm, incur debt, and begin simulating the impact on financial variables

**Tuesday 1/24 - Debt Policy** * Continue Simulation of leverage impact on NI, NOI, ROA, ROD, Int Exp, ROE, βD, βE, Shs o/s, EPS, WACC, DIV, g, and PSt
* Determine best cost/benefit analysis to evaluate debt policy and utilize to resolve optimal capital structure strategy

**Thursday 1/26 - Debt Policy** * Consider arbitrage effect on debt policy
* Consider the “Do it yourself” effect

**Tuesday 1/31 - Debt Policy and Taxes** * Demonstrate the interest tax subsidy argument for debt
* Re-examine the interest tax subsidy argument in light of taxes paid by bondholders
* Hypothesize a shift in subsidy over time (aka the bondholder surplus)

**Thursday 2/2 - Debt Policy and Taxes*** Simulate the evolution of the interest tax subsidy over time and its impact on the value of the firm
* Investigate the impact of Merton’s tax argument for homeowners with mortgages

**Tuesday 2/7 - Other Capital Structure Issues*** Summarize arguments for financing with debt vs equity
* Identify additional factors that might affect with debt versus equity decision
* Evaluate Agency Costs
* Evaluate Signaling
* Evaluate employee behavioral issues
* Consider financial slack

**Thursday 2/9** * **Final Exam** **Tuesday 2/14**
* Graded Exams available for review during office hours

**Thursday 2/16** * Retake exam
 | **Simulation Exercises,** T**extbook readings,** **outside Readings, Projects, and practice exercises****Chapter 12**[Dividend Policy - LearnersTV lecture video](http://www.learnerstv.com/video/Free-video-Lecture-7164-Management.htm)[*Top Ten Dividend Quotes from Famous Investors/CEOs*](http://business.baylor.edu/don_cunningham/Top%2010%20Dividend%20Quotes.docx)[*Quotes from popular press on Dividends*](http://business.baylor.edu/Don_Cunningham/Quotes%20on%20Dividends.docx)*[Ichan Pushes Apple on Buyback (2013)](http://business.baylor.edu/don_cunningham/Icahn%20Pushes%20Apple%20on%20Buyback.pdf)**[Buyback Craze, Firms Rush to Buy (2013)](http://business.baylor.edu/don_cunningham/In%20Buyback%20Craze%2C%20Companies%20Rush%20to%20Buy%20High%20_%20Yahoo%21%20Finance%20%282013%29.pdf)**[J. P. Morgan Ups Dividend - Bank Stocks Surge (2012)](http://business.baylor.edu/don_cunningham/J.P.%20Morgan%20ups%20dividend%20-%20Bank%20stocks%20surge%20%282012%29.pdf)**[Dividend Payouts are Climbing ( 2012)](http://business.baylor.edu/don_cunningham/Dividend%20Payouts%20Are%20Climbing%20-%202012.pdf)*See: [www.dividend.com](http://www.dividend.com)*[Apple Sets Dividend and Stock Buyback (2012)](http://business.baylor.edu/don_cunningham/Apple%20sets%20dividend%2C%20stock%20buyback%20%282012%29.pdf)**[Should Apple Pay a Dividend (2012)](http://business.baylor.edu/don_cunningham/Should%20Apple%20Pay%20A%20Dividend%20-%20Forbes%20-2012.pdf)*[*Kiplinger’s Way to Buy Stocks – Dividend*](http://business.baylor.edu/don_cunningham/Kiplinger_com%20Basics%20Kiplinger%27s%20Way%20to%20Buy%20Stocks%2C%20page%204%20Dividend%20yield.htm)*[A very Bullish Development – Disney’s Div Hike (2011)](http://business.baylor.edu/don_cunningham/A%20very%20bullish%20development%20-%20Disney%20Divident%20Hike%20%2812-2011%29.pdf)*[*Buybacks aren't always a good thing (2011)*](http://business.baylor.edu/don_cunningham/Buybacks_aren%27t_always_a_good_thing_%282011%29_-_USATODAY.com.pdf) [*Conoco ups Dividends and Buybacks (2011)*](http://business.baylor.edu/don_cunningham/Conoco%20ups%20dividend%2020%20pct%2C%20sets%20stock%20buyback%20%282011%29%20_%20Reuters.pdf)*[Why I Love Dividends (2006)](http://business.baylor.edu/don_cunningham/21441918.pdf)*  [*Dividend and capital gains tax rates*](http://business.baylor.edu/don_cunningham/Dividend%20Tax%20Rates.docx)[*Stepped up basis – the Angel of Death*](http://business.baylor.edu/don_cunningham/Stepped%20up%20Basis%20-%20The%20Angel%20of%20Death.docx)[*How to Avoid Inheritance Tax*](http://business.baylor.edu/don_cunningham/How%20to%20Avoid%20Inheritance%20taxes.pdf)[*Div Policy, Div Initiations, and Governance (2006)*](http://business.baylor.edu/don_cunningham/Dividend%20Policy%2C%20Dividend%20Initiations%20and%20Goverance.PDF)[*Dividend Policy, Agency Costs, and Earned Equity (2004)*](http://business.baylor.edu/don_cunningham/Dividend%20Policy%2C%20Agency%20Costs%2C%20and%20Earned%20Equity.PDF)[Dividend Conversion Game (excel worksheet)](http://business.baylor.edu/don_cunningham/Dividend%20Conversion%20Game.xls)Ch 12: 2, 14, 23, 26[Chapter 12](http://business.baylor.edu/don_cunningham/Chap012.doc), Solutions**Chapter 13**[Capital Structure lecture video](http://www.learnerstv.com/video/Free-video-Lecture-7165-Management.htm)-LearnersTV[Personal Leverage – Diversifying Across Time](http://business.baylor.edu/don_cunningham/Diversification%20Across%20Time.pdf)[Quotes from popular press articles on Debt](http://business.baylor.edu/don_cunningham/Quotes%20from%20Articles%20on%20Capital%20Structure.doc)[Kiplinger’s Way to Buy Stocks – Debt Ratio](http://business.baylor.edu/don_cunningham/Kiplinger_com%20Basics%20Kiplinger%27s%20Way%20to%20Buy%20Stocks%2C%20page%207%20Debt-equity%20ratio.htm)[Optimal Financial Leverage - Investopedia](http://business.baylor.edu/Don_Cunningham/Optimal%20Financial%20Leverage%20-%20Investopedia.docx)[ROE as function of D/E](http://business.baylor.edu/Don_Cunningham/ROE_as_function_of_debt.xlsx)[*How Corporate Finance Got Smart (1998)*](http://business.baylor.edu/don_cunningham/How%20Corporate%20Finance%20Got%20Smart%20%281998%29.pdf)[*Hard Lessons from the Debt Decade (1990)*](http://business.baylor.edu/don_cunningham/Hard%20Lessons%20from%20the%20Debt%20Decade.pdf)[*How Firms Estimate Cost of Capital (2011)*](http://business.baylor.edu/don_cunningham/How_Firms_Estimate_Cost_of_Capital_%282011%29.pdf)[*Dividend Recapitalization - Debt Markets Offer Big Payday at HCA (2011)*](http://business.baylor.edu/don_cunningham/Dividend%20Recapitlalization%20-%20Debt%20Markets%20Offer%20Chance%20at%20Big%20Payday%20at%20HCA%20%282011%29.pdf)*[Finding Balance Sheet Beauties (2002)](http://business.baylor.edu/don_cunningham/Finding%20Balance%20Sheet%20Beauties%20%282002%29.pdf)*[*After the Revolution – CFO Magazine (1998)*](http://business.baylor.edu/don_cunningham/After%20the%20M%26M%20Revolution%20%28CFO%20Magazine%201998%29.pdf)Chapter 13 problems Ch 13: 2, 5, 9, 10, 15, 16, 19[Chapter 13](http://business.baylor.edu/don_cunningham/Chap013.doc), Solutions**Chapter 14**[“Debt and Taxes,”](http://business.baylor.edu/Don_Cunningham/Debt%20and%20Taxes%20%281977%29.pdf) (1978) by Merton Miller, *Journal of Finance*, Presidential Address to American Finance AssociationCompare muni versus corporate bond rates at:<http://finance.yahoo.com/bonds/composite_bond_rates>Work Ch 14 handout problem on Debt and Taxes-attached below. [*In Defense of the Mortgage Interest Deduction (1992)*](http://business.baylor.edu/Don_Cunningham/Defense%20of%20Mortgage%20Interest%20Deduction.PDF) [*When and when not a Tax Break for Borrowing (2014)*](http://business.baylor.edu/don_cunningham/When%20you%20get%20a%20tax%20break%20for%20borrowing%20and%20when%20you%20don%27t.docx)[*Taking Aim at the Mortgage Tax Break (2010)*](http://business.baylor.edu/Don_Cunningham/Taking_Aim_at_the_Mortgage_Tax_Break_%282010%29_-_NYTimes.com.pdf) [*Estimating the Tax Benefits of Debt (2001)*](http://business.baylor.edu/Don_Cunningham/Estimating%20Tax%20Benefits%20of%20Debt.pdf)[CEO Leverage and Corporate Leverage (2012)](http://business.baylor.edu/Don_Cunningham/CEO%20leverage%20and%20corporate%20leverage.pdf)[Marriott's Move to Shed Debt (1992)](http://business.baylor.edu/Don_Cunningham/Mariott%27s%20Move%20to%20Shed%20Debt.PDF) Ch 14: 18, 19, 20, [Chapter 14](http://business.baylor.edu/don_cunningham/Chap014.doc), Solutions[Sample Exam](http://business.baylor.edu/Don_Cunningham/5163%20Sample%20Exam.doc)[Sample Exam with answers](http://business.baylor.edu/Don_Cunningham/5163%20Sample%20Exam%20answers.doc) |

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Corporate Finance

Comprehensive Case[[1]](#footnote-1)

Allete Energy Inc. (ALE) is considering an expansion into wind farms. Currently, natural gas is its primary source for electricity production. However, several executives think that a wind farm venture would offer valuable diversification benefits. Other executives believe they could exploit the company’s downstream customer channels to efficiently market wind-produced electricity. The Vice President of shareholder relations, however, is concerned that cash flow projections are volatile and might, in the short run, require a dividend reduction to assure the company’s overall positive cash flow position. She emphasizes that a dividend reduction could agitate shareholders and jeopardize the stock price. Shareholder surveys indicate that a majority of Elite’s shareholders invest for its high dividend yield.

The CEO noted the magnitude of this strategic decision (a 20% expansion of productive assets) and directed the COO to meet with all members of the executive committee, analyze the prospective project, and recommend the best course of action at the next executive committee meeting.

The wind farm venture will cost an estimated $386 million. The facility will have 257 turbines with a total capacity of 360.5 megawatts (mW). Wind speeds fluctuate, but most wind farms expect to operate at an average of 35% of their rated capacity. With an electricity price of $55 per megawatt hour (mWh), the project will produce revenues in the first year of $60.8 million (i.e. .35 x 8760 hours x 360.5 mW x $55 per mWh). Accounting estimates maintenance and other costs will be about $18.9 million in the first year of operation. Thereafter, revenues and costs should increase by roughly 3% per year.

Power stations can be depreciated using 20-year MACRS, and most power stations have a payback period of 8 years. The firm’s tax bracket is 35%. The project will last 20 years. Municipal and federal tax breaks amount to $20 million, all in the first year.

The capital budgeting department estimates the project has a payback period of 8 years, an aveage rate of return of 10%, and an internal rate of return of 11%. The department’s present value calculations assume a cost of capital of 12%, even though Allete’s bonds are currently yielding 5%. Stock market returns average 11% and treasury bill returns average 3.5%.

Balance sheet, income statement, and other key financial information is available under the firm’s quote symbol (ALE) at <http://finance.yahoo.com/> .

The CFO reports that the company’s investment banking firm thinks it can comfortably raise sufficient capital to finance the wind farm project with either a bond offering or a stock offering. The bonds would probably float at a rate of 5.5%.

The CFO’s department’s initial projections show that interest expense from bond financing would reduce net income by $21 million as compared to a stock offering. However, with fewer shares outstanding (i.e. less dilution) a bond offering would increase EPS by $.55 more than a stock offering. The CFO recommends a bond offering because the greater increase in EPS in combination with the firm’s current dividend payout ratio, would keep dividends unchanged and address the stockholder agitation issue that was raised by the shareholder relations VP.

Currently, there are 37.3 million shares outstanding at a price of $41.50.

Corporate Finance

Comprehensive Case[[2]](#footnote-2)

Allete Energy Inc. (ALE) is considering an expansion into wind farms. Currently, natural gas is its primary source for electricity production. However, several executives think that a wind farm venture would offer valuable diversification benefits. Other executives believe they could exploit the company’s downstream customer channels to efficiently market wind-produced electricity. The Vice President of shareholder relations, however, is concerned that cash flow projections are volatile and might, in the short run, require a dividend reduction to assure the company’s overall positive cash flow position. She emphasizes that a dividend reduction could agitate shareholders and jeopardize the stock price. Shareholder surveys indicate that a majority of Elite’s shareholders invest for its high dividend yield.

The CEO noted the magnitude of this strategic decision (a 20% expansion of productive assets) and directed the COO to meet with all members of the executive committee, analyze the prospective project, and recommend the best course of action at the next executive committee meeting.

The wind farm venture will cost an estimated $386 million. The facility will have 257 turbines with a total capacity of 360.5 megawatts (mW). Wind speeds fluctuate, but most wind farms expect to operate at an average of 35% of their rated capacity. With an electricity price of $55 per megawatt hour (mWh), the project will produce revenues in the first year of $60.8 million (i.e. .35 x 8760 hours x 360.5 mW x $55 per mWh). Accounting estimates maintenance and other costs will be about $18.9 million in the first year of operation. Thereafter, revenues and costs should increase by roughly 3% per year.

Power stations can be depreciated using 20-year MACRS, and most power stations have a payback period of 8 years. The firm’s tax bracket is 35%. The project will last 20 years. Municipal and federal tax breaks amount to $20 million, all in the first year.

The capital budgeting department estimates the project has a payback period of 8 years, an aveage rate of return of 10%, and an internal rate of return of 11%. The department’s present value calculations assume a cost of capital of 12%, even though Allete’s bonds are currently yielding 5%. Stock market returns average 11% and treasury bill returns average 3.5%.

Balance sheet, income statement, and other key financial information is available under the firm’s quote symbol (ALE) at <http://finance.yahoo.com/> .

The CFO reports that the company’s investment banking firm thinks it can comfortably raise sufficient capital to finance the wind farm project with either a bond offering or a stock offering. The bonds would probably float at a rate of 5.5%.

The CFO’s department’s initial projections show that interest expense from bond financing would reduce net income by $21 million as compared to a stock offering. However, with fewer shares outstanding (i.e. less dilution) a bond offering would increase EPS by $.55 more than a stock offering. The CFO recommends a bond offering because the greater increase in EPS in combination with the firm’s current dividend payout ratio, would keep dividends unchanged and address the stockholder agitation issue that was raised by the shareholder relations VP.

Currently, there are 37.3 million shares outstanding at a price of $41.50.

Tax Credit in Doubt, Wind Power Industry Is Withering



Jessica Kourkounis for The New York Times

Gamesa, a major maker of components for wind turbines,  has all but shut down its factory in Fairless Hills, Pa., and furloughed 92 workers.

By [DIANE CARDWELL](http://topics.nytimes.com/top/reference/timestopics/people/c/diane_cardwell/index.html)

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FAIRLESS HILLS, Pa. — Last month, Gamesa, a major maker of components for [wind turbines](http://topics.nytimes.com/top/reference/timestopics/subjects/w/wind_power/index.html?inline=nyt-classifier), completed the first significant order of its latest invention: a camper-size box that can capture the energy of slow winds, potentially opening up new parts of the country to wind power.

But by the time the last of the devices , worth more than $1.25 million, was hitched to a rail car, Gamesa had all but shut down its factory here and furloughed 92 of the workers who made them.

“We are all really sad,” said Miguel Orobiyi, 34, who worked as a mechanical assembler at the Gamesa plant for nearly five years. “I hope they call us back because they are really, really good jobs.”

Similar cutbacks are happening throughout the American wind sector, which includes hundreds of manufacturers, from multinationals that make giant windmills to smaller local manufacturers that supply specialty steel or bolts. In recent months, companies have announced almost 1,700 layoffs.

At its peak in 2008 and 2009, the industry employed about 85,000 people, according to the American Wind Energy Association, the industry’s principal trade group.

Many of those jobs have disappeared, as wind companies have been buffeted by weak demand for electricity, stiff competition from cheap natural gas and cheaper options from Asian competitors. Chinese manufacturers, who can often underprice goods because of generous state subsidies, have moved into the American market and have become an issue in the larger trade tensions between the two countries. In July, the United States Commerce Department imposed tariffs on steel turbine towers from China after finding that manufacturers had been selling them for less than the cost of production.

And now, on top of the business challenges, the industry is facing a big political problem in Washington: the Dec. 31 expiration of a federal tax credit that makes wind power more competitive with other sources of electricity.

The tax break, which costs about $1 billion a year, has been periodically renewed by Congress with support from both parties. This year, however, it has become a wedge issue in the presidential contest. President Obama has traveled to wind-heavy swing states like Iowa to tout his support for the subsidy. Mitt Romney, the Republican nominee, has said he opposes the wind credit, and that has galvanized Republicans in Congress against it, perhaps dooming any extension or at least delaying it until after the election despite a last-ditch lobbying effort from proponents this week.

Without the production tax credit in place, said Ryan Wiser, a staff scientist at Lawrence Berkeley National Laboratory who studies the market potential of renewable electricity sources, the wind business “falls off a cliff.”

The industry’s precariousness was apparent a few weeks ago at the Gamesa factory, as a crew loaded the guts of the company’s new component, a device known as a nacelle, into its fiberglass shell. Only 50 completed nacelles awaited pickup in a yard once filled with three times as many, most of the production line stood idle, and shelves rated to hold 7,270 pounds of parts and equipment lay bare.

“We’ve done a lot to get really efficient here,” said Tom Bell, the manager of the plant, which was built on the grounds of a shuttered U.S. Steel factory that was once a bedrock of the local economy. “Now we just need a few more orders.”

Industry executives and analysts say that the looming end of the production tax credit, which subsidizes wind power by 2.2 cents a kilowatt-hour, has made project developers skittish about investing or going forward. That reluctance has rippled through the supply chain.

On Tuesday, Siemens, the German-based turbine-maker, announced it would lay off 945 workers in Kansas, Iowa and Florida, including part-timers. Last week Katana Summit, a tower manufacturer, said it would shut down operations in Nebraska and Washington if it could not find a buyer. Vestas, the world’s largest turbine manufacturer, with operations in Colorado and Texas, recently laid off 1,400 workers globally on top of 2,300 layoffs announced earlier this year. Clipper Windpower, with manufacturing in Iowa, is reducing its staff by a third, to 376 from 550. DMI Industries, another tower producer, is planning to lay off 167 workers in Tulsa by November.

Wind industry jobs range in pay from about $30,000 a year for assemblers to almost $100,000 a year for engineers, according to the Bureau of Labor Statistics.

The industry’s contraction follows several years of sustained growth — with a few hiccups during the downturn — that has helped wind power edge closer to the cost of electricity from conventional fuels. The number of turbine manufacturers grew to nine in 2010 from just one in 2005, while the number of component makers increased tenfold in the same period to more than 400 from 40, according to the wind energy trade group.

Aside from Clipper Windpower and General Electric, most of the turbine manufacturers operating in the United States are headquartered overseas, especially in Europe, where wind power took off first, spurred by clean energy policies and generous subsidies.

As the United States put in place mandates and subsidies of its own, several large outfits, including the Spanish company Gamesa, set up shop stateside. Because the turbines, made of roughly 8,000 parts, are so large and heavy — blades half the length of a football field, towers rising hundreds of feet in the air, motors weighing in the tons — they are difficult and expensive to transport.

As a result, manufacturers invested billions in developing a supply chain in the United States. All told, more than 100 companies contribute parts to Gamesa’s 75-ton devices, which are the most expensive and complex major components of high-tech windmills.

Some longtime Gamesa partners like Hine followed the company from Spain, investing millions in building plants in the United States and sending workers to Spain for expensive training.

Rich Miller, who works for Hine in Quakertown, Pa., said that when he went to Spain to learn how to build and test power units for its hydraulic systems, it was his first trip out of the country.

“That was quite an experience in itself,” said Mr. Miller, who is 58, adding that he probably learned more in four years at Hine than at previous jobs.

Now he worries about having to move on. “Hopefully it will go back to the way things were.” Losing his job at his age, he said, “would be devastating for me.”

## CHAPTER 12 (Ch 17 in older editions)

**Payout Policy**

## *Quiz Questions*

2. Here are several “facts” about typical corporate dividend policies. Which are true and which false?

1. Companies decide each year’s dividend by looking at their capital expenditure requirements and then distributing whatever cash is left over.
2. Managers and investors seem more concerned with dividend changes than with dividend levels.
3. Managers often increase dividends temporarily when earnings are unexpectedly high for a year or two.
4. Companies undertaking substantial share repurchases usually finance them with an offsetting reduction in cash dividends.

## *Practice Questions*

9. Which types of companies would you expect to distribute a relatively high or low proportion of current earnings? Which would you expect to have a relatively high or low price-earnings ratio?

1. High-risk companies
2. Companies that have experienced an unexpected decline in profits.
3. Companies that *expect* to experience a decline in profits.
4. Growth companies with valuable future investment opportunities.

14. “Many companies use stock repurchases to increase earnings per share. For example, suppose that a company is in the following position:

|  |  |
| --- | --- |
| Net profit | $10 million |
| Number of shares before repurchase | 1 million |
| Earnings per share | $10 |
| Price-earnings ratio | 20 |
| Share price | $200 |

 The company now repurchases 200,000 shares at $200 a share. The number of shares declines to 800,000 shares and earnings per share increase to $12.50. Assuming the price-earnings ratio stays at 20, the share price must rise to $250.” Discuss.

16. An article on stock repurchase in the *Los Angeles Times* noted: “An increasing number of companies are finding that the best investment they can make these days is in themselves.” Discuss this view. How is the desirability of repurchase affected by company prospects and the price of its stock?

23. Consider the following two statements: “Dividend policy is irrelevant,” and “Stock price is the present value of expected future dividends.” (See Chapter 5.) They *sound* contradictory. This question is designed to show that they are fully consistent.

 The current price of the shares of Charles River Mining Corporation is $50. Next year’s expected earnings are $6 per share and the firm has a dividend polcy of 1/3 payout. The expected rate of return demanded by investors is 12%.

 We can use the perpetual-growth model to calculate stock price:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| P0 = | DIV | = | 2 | = 50 |
| *r - g* | .12 - .08 |

1. What is Charles River and E(ROE)?
2. What should be next year’s stock price if Charles River makes no further investments?
3. How will stockholders receive their required return?
4. What should be next year’s dividend announcement?

Suppose that Charles River Mining announces that it will switch to a 100% payout policy. Use the perpetual-growth model to show that current stock price is unchanged. What would be your answers to a, b, c, and d questions under the 100% payout policy?

## CHAPTER 13 (18 in older editions)

**Does Debt Policy Matter?**

## *Problems*

2. Spam Corp. is financed entirely by 100,000 shares of common stock that has a beta of 1.0. The firm is expected to generate a level, perpetual stream of earnings and dividends. The stock has a price-earnings ratio of 8 and a cost of equity of 12.5%. The company’s stock is selling for $50. The firm decides to buy back half of its shares and finance the buyback with debt. The debt is risk-free, with a 5% interest rate. The company is exempt from corporate income taxes. Calculate the following items before and after the refinancing:

1. NOI
2. NI
3. The risk of equity
4. The cost of equity
5. EPS
6. Dividends
7. The firm’s overall cost of capital
8. The stock’s price
9. The P/E ratio

Does it seem appropriate to assume the company’s debt remained risk-free when it repurchased half of its stock with a debt issuance? How would the above items change if the debt increased (decreased) in risk?

What would happen if the firm changed its dividend policy to a 40% payout?

5. True or false?

1. MM’s Leverage irrelevance proposition says that corporate borrowing increases earnings per share but reduces the price-earnings ratio.
2. MM argue that the cost of equity increases with borrowing and that the increase is proportional to the *D/E* ratio of the firm.
3. MM posit that increased borrowing does not affect the interest rate on the firm’s debt.
4. Borrowing does not increase financial risk and the cost of equity if there is no risk of bankruptcy. See: [ROE as function of D/E](http://casey/web/Don_Cunningham/ROE_as_function_of_debt.xlsx)
5. Borrowing increases firm value if there is a clientele of investors with a reason to prefer debt.

## *Practice Questions*

9. **Optional :**

Companies A and B differ only in their capital structure. A is financed 30% debt and 70% equity; B is financed 10% debt and 90% equity. The debt of both companies is risk-free.

Assume E(ROA) is 10% and E(ROD) is 5%. Hint, let assets equal $1000.

1. Rosencrantz owns 10% of the common stock of A. What other investment package would produce identical cash flows for Rosencrantz?
2. Guildenstern owns 20% of the common stock of B. What other investment package would produce identical cash flows for Guildenstern?
3. Show that neither Rosencrantz nor Guildenstern would invest in the common stock of B if the *total* value of company A were 10% less than that of B.

10. Here is a limerick: aka  You Can’t Take Your Cows to Wall Street 

 *There once was a man named Carruthers,*

*Who kept cows with miraculous udders.*

*He said, “Isn’t this neat?*

*They give cream from one teat,*

*And skim milk from each of the others!”*

What is the analogy between Mr. Carruthers’s cows and firms’ financing decisions? What would MM’s proposition 1, suitable adapted, say about the value of Mr. Carruthers’s cows? Explain. See [*How Corporate Finance Got Smart (1998)*](file:///L%3A%5CHow%20Corporate%20Finance%20Got%20Smart%20%281998%29.pdf)

15. Indicate what’s wrong with the following arguments:

1. “As the firm borrows more and debt becomes risky, both stockholders and bondholders demand higher rates of return. Thus by *reducing* the debt ratio we can reduce *both* the cost of debt and the cost of equity, making everybody better off.”
2. “Moderate borrowing doesn’t significantly affect the probability of financial distress or bankruptcy. Consequently moderate borrowing won’t increase the expected rate of return demanded by stockholders.”

19. Archimedes Levers is financed by a mixture of debt and equity. You have the following information about its cost of capital. Fill in the blanks. In what order does management naturally confront these variables in reality?

|  |  |  |
| --- | --- | --- |
| rE = \_\_\_ | rD = 12% | rA = \_\_\_ |
| βE = 1.5 | βD = \_\_\_ | βA = \_\_\_ |
| rf = 10% | rm = 18% | D/V = .5 |

24. Can you fill in the blanks?

People often convey the idea behind MM’s proposition 1 by various supermarket analogies, for example, “The value of a pie should not depend on how it is sliced,” or, “The cost of whole chicken should be equal the cost of assembling one by buying two drumsticks, two wings, two breats, and so on.”

 Actually proposition 1 doesn’t work in the supermarket. You’ll pay less for an uncut whole pie than for a pie assembled from pieces purchased separately. Supermarkets charge more for chickens after they cut up. Why? What costs or imperfections cause proposition 1 to fail in the supermarket? Are these costs or imperfections likely to be important for the corporations issuing securities on the U.S or world capital markets? Expalin.

**Debt and Taxes**

**Handout Problem**

**Chapter 14 (19 in older edtions)**

** Where Have All the Gains to Leverage Gone? **

Suppose the investing public consists of three investor groups with the following tax brackets:

 Group Tax Bracket

 A 60%

 B 40%

 C 0 %

These investors can invest in perpetual municipal bonds, perpetual corporate bonds, and common stock.

The corporate tax rate is 50%. Aggregate interest payments on municipal bonds totals $30 million. Aggregate NOI of all corporations totals $300 million.

Each investor group has the same amount of money to invest and their total net worth equals the value of all securities. In other words, all the interest income from muni’s as well as all corporate NOI mentioned above must flow through securities purchased by the three investor groups listed above.

The minimum required rate of return demanded by investors after taxes in this economy is 10%.

1. Suppose all companies are initially financed by common stock. Company X decides to mimic the local municipality and issue bonds to raise capital. The firm will allocate $1 million of its NOI to interest payments on the bonds. Which group of investors will buy the bonds? What will be the rate of interest? What will be the effect of the bond issuance on the value of Company X?
2. What will other companies do after observing the financing actions taken by Company X? Suppose interest payments in the economy now total $150 million. At this point Company Y decides to follow the actions of Company X and issue bonds, also allocating $1 million of its NOI to interest payments on the bonds. Which group of investors will buy the bonds? What will be the rate of interest? What will be the effect of the bond issuance on the value of Company X?
3. Suppose total interest payments in the economy somehow rise to $230 million. Company Z was one of the last firms to issue debt, also allocating $1 million of its NOI to interest payments on the bonds. Which group of investors bought the bonds? What rate of interest did Company Z have to pay on the bonds? What was the effect of the bond issuance on the value of Company Z? What will be the impact of this bond issuance on interest rates and the value of firms that issue bonds in the future?
4. Over time, suppose a few corporations have accumulated excess cash from operations and want to purchase marketable securities to “park” their money. How will all the financing activity settle up? That is, how much debt must be outstanding? What is the value of all companies? What is the interest rate in the economy? What is the impact of leveraging for a company? Show that when all the dust settles, an unlevered firm has no incentive to issue debt and a levered company has no incentive to retire debt with common stock. Now, with markets in equilibrium, would any issuer or investor group benefit from bond issuances or bond investments?

*Problems*

1. The present value of interest tax shields is often written as TcD, where D is the amount of debt and Tc is the marginal corporate tax rate. Under what assumptions is this present value correct?

3. What is the relative tax advantage of corporate debt if the corporate tax rate is Tc= .35, the personal tax rate is Tp= .35, but all equity income is received as capital gains and escapes tax entirely (TpE= 0)? How does the relative tax rate advantage change if the company decides to pay out all equity income as cash dividends that are taxed at 15%?

4. “The firm can’t use interest tax shields unless it has (taxable) income to shield.” What does this statement imply for debt policy? Explain briefly.

5. Miller’s tax adjustment model indicates that managers of non-profit hospitals should issue bonds at what rate?

6. In 2010, House Speaker Nancy Pelosi criticized the president’s budget deficit commission on its suggestion to eliminate the [mortgage interest tax break](file:///L%3A%5CTaking_Aim_at_the_Mortgage_Tax_Break_%282010%29_-_NYTimes.com.pdf), saying it would force middle-class homeowners to subsidize tax breaks for the wealthy. Apply Miller’s tax model and discuss.
See also: [A Defense of the Mortgage Interest Deduction (1992)](http://business.baylor.edu/don_cunningham/Defense%20of%20Mortgage%20Interest%20Deduction.PDF)

7. This question tests your understanding of financial distress

1. What are the costs of going bankrupt? Define these costs carefully.
2. “ A company can incur costs of financial distress without going bankrupt.” Expain how this can happen
3. Expalin how conflicts of interests between bondholders and stockholders can lead to financial distress.

18.. Let us go back to circular File’s market-value balance sheet

|  |  |  |  |
| --- | --- | --- | --- |
| Net working capital | $20 | $25 | Bonds outstanding |
| Fixed asstes | 10 | 5 | Common stock |
| Total assets | $30 | $30 | Total Value |

Who gains and who loses from the following maneuvers?.

1. Circular scrapes up $5 in cash and pays a cash dividend.
2. Circular halts operations, sells its fixed assets, and converts net working capital into $20 cash. Unfortunately the fixed assets fetch only $6 on the secondhand market. The $26 cash is invested in treasury bills.
3. Circular encounters an acceptable investment opportunity, NPV= 0, requiring an investment of $10. The firm borrows to finance the project. The new debt has the same security, seniority, etc as the old.
4. Suppose that the new project has NPV= $2 and is financed by an issue of preffered stock.
5. The lenders agree to extend the maturity of their loan from one year to two in order to give Circular a chance to recover.

19. The Salad Oil Storage(SOS) company has financed a large part of its facilties with long-term debt. There is a significant risk of default, but the company is not on the ropes yet. Explain:

1. Why SOS stockholders could lose by investing in a positive-NPV project financed by an equity issue.
2. Why SOS stockholders could gain by investing in a negative-NPV project financed by cash.
3. Why SOS stockholders could gain from paying out a large cash dividend.

20 . a. Who benefits from the fine print in the bond contracts when the firm gets into financial trouble? Give a one-sentence answer

b. Who benefits from the fine print when the bonds are issued? Suppose the firm is offered the choice of issuing (i) a bond with standard restrictions on dividend payout, additional borrowing, etc., and (ii) a bond with minimal restrictions but a much higher interest rate? Suppose the interest rates on both (i) and (ii) are fair from the viewpoint of lenders. Which bond would you expect the firm to issue? Why?

**Capstone Handout Problem**

**EPS, CAPM, Dividend Policy, Capital Structure Policy**

**Chapter 14**

A 100% equity financed firm is considering a strategic 50% expansion of its core business.. The firm is a “pure play” and the expansion will be in the same core business (i.e. same risk class). If the project is financed with bonds, the firm’s investment bankers project that the bonds will float at a yield of 6%. Currently, before expansion, the firm’s stock has a beta (***βe***) of 2. The risk-free rate is currently 5%. The expected return on the market is 12%. The firm’s tax bracket is 50%. Management's fundamental strategic question is whether **financing with cheap debt (6% bonds) versus expensive equity (stock) will create value for the shareholders**.

The CFO assigns you the task of assembling a team and preparing an analysis of the proposed expansion with debt financing. You are specifically instructed to address the impact on the firm’s EPS, dividends, and stock price.

1. This case is fictional. No events depicted herein are representative of actual operating events transpiring at Allete, Inc. This case is for the express purpose of teaching corporate finance concepts with real-time financial information. [↑](#footnote-ref-1)
2. This case is fictional. No events depicted herein are representative of actual operating events transpiring at Allete, Inc. This case is for the express purpose of teaching corporate finance concepts with real-time financial information. [↑](#footnote-ref-2)