Traditional Risk Workshops: Financial Risk

The Financial Risk Workshop will focus on Tesla, Inc.

Financial Risk relates to the effects on the financial health of a firm due to ***unexpected*** changes in 1) asset or commodity prices (e.g., stock prices) or the Fed Funds rate controlled by the Fed (Market Risk), 2) Credit condition – easy credit or restricted credit due to risk-on attitudes of market participants (Credit Risk), 3) liquidity that affects the ability of the firm to raise money in the capital markets, or to meet its debt obligations for idiosyncratic (firm-related) or market reasons) (Liquidity Risk).

Changes that lower financial risks are considered positive because they result in unexpected rewards, such as a higher stock price and lower cost of funds.

Changes that increase financial risks are considered negative. Negative changes cause the firm to suffer ***financial distress costs*** such as i) loss of customers (would you buy a Mac if Apple was at risk of bankruptcy?), ii) loss of key vendors (would Qualcomm be willing to supply chips to Apple on favorable terms, if Apple was in trouble?), iii) loss of ability to raise money in the capital markets to fund its investment plan and therefore fail to implement its strategy (would GE be able to raise funds in the current environment defined https://finance.yahoo.com/quote/GE?p=GE ?), and iv) in the extreme case, **bankruptcy**, which may result in **liquidation** (the official death of a firm)

Template outline:

This workshop is designed to provide a more immersive experience than lecture to understand how each of the traditional risk functions contribute to a robust ERM program. The purpose of each workshop is to provide a self-study guide to learn more about each risk discipline. The fourth of these workshops deals with Financial Risk. The lecture slides and attached files are only the beginning of your research. You are required to explore the topic further to determine how to apply the separate risk disciplines in ways that lead to appropriate responses to adverse events or untapped opportunities. Each workshop will be scenario-based and you must apply your reading and research to develop an appropriate response to the adverse event.

Instructions:

1. Please read

Tesla's Annual Report (http://www.annualreports.com/HostedData/AnnualReports/PDF/NASDAQ_TSLA_2017.pdf), Part I, Items 1, 1A; Part II, Items 6, 7, 7A

Form K-8 that discloses Elon Musk's stock awards if the company meets certain performance milestones (https://ir.tesla.com/node/18896/html).

a. The short news stories in the links provided below.

The Appendices provide financial metrics, and a review of accounting statements

https://www.marketwatch.com/investing/stock/tsla

https://www.barrons.com/articles/can-tesla-outrun-cash-burn-1523072346?emailToken=26257ef326db66e5132406d4a566c6caJXJwA5JhlFrR1QzH%2BzPUciK%2FFk925f8IcqKYUI6SK8%2FZkh2uzHnqz5z1YbfNve4qkQsReRYa%2FHI9WHIZKpB0wQ%3D%3D

https://www.cnbc.com/2018/03/27/moodys-downgrades-tesla-credit-rating-on-model-3-production-delays.html

Additional links to research:

https://www.theguardian.com/technology/2018/mar/31/tesla-car-crash-autopilot-mountain-view

https://www.wired.com/story/tesla-ntsb-autopilot-crash-death/

https://www.autopilotreview.com/tesla-autopilot-accidents-causes/

https://www.washingtonpost.com/apps/g/page/business/teslas-financial-performance-in-overdrive/469/

http://thebusinessferret.com/tesla-motors-financial-analysis/

https://www.wsj.com/articles/tesla-china-sales-declined-significantly-ceo-says-1421186754

https://www.forbes.com/sites/chuckjones/2017/03/30/teslas-new-debt-is-a-bunch-of-junk/#48462fa69bbd

http://fortune.com/2018/04/06/spacex-tesla-elon-musk-debt/

https://www.bloomberg.com/news/articles/2018-04-06/hidden-by-model-3-mess-tesla-s-other-problem-is-about-to-emerge

2. ***Please provide short answers (a few sentences each) to the following five (5) questions and submit via Canvas prior to class (to be submitted INDIVIDUALLY prior to class).***

I. Discuss the types of financial risk Tesla is subject to (check definition of Financial Risk in the slides, Annual report, links). Substantiate your discussion of financial risks by applying the relevant metrics in Appendix I to Tesla's financial data and the metrics in the links or Annual report (the more metrics you use, the better).

II. Explain the meaning of the negative cash flows in the Statement of Cash Flows. How does Tesla cover those negative cash flows? How does Tesla propose to generate cash flows eventually (long-run)?

III. Recently, a Tesla car on autopilot killed a pedestrian in a traffic accident. Based on the risk workshops that we have done so far, how would you categorize this risk, IT, Strategic, Operational?

IV. Using Form 8-K, what are the broad milestones that CEO Elon Musk must meet before he is awarded shares? Do the milestones align Elon Musk's interests with Tesla shareholders' interests? Explain.

V. How do you assess Tesla's financial risk rating - high, moderate, low? Support your reasoning using Tesla's own data and the metrics that you find relevant for the task

3. **Applying the Financial Risk concepts to your ERM Project Company:** Working with your group project team, look at the financial data of your company and
   a. answer the 5 questions above, and
   b. answer the following questions based on your own research
      i. What is the Environmental, Social, Governance (ESG) metric, and how does Tesla's ESG score compare to those of Samsung, and Facebook? Take into consideration each company's sustainable competitive advantage and the impact it has on its business profile, (e.g., climate change integrated into business strategy or is the business model supportive of extension of life-cycle of products/services)
      ii. As you consider proposals with one important consideration in mind, i.e., the best long-term interests of investors, Should the ESG risk be included in the Financial Risk? Explain.

   (***To be Completed as a GROUP <u>in class</u> for discussion only***)

https://finance.yahoo.com/quote/005930.KS?p=005930.KS

Chart Statistics Profile Financials Options Holders Historical Data Analysts Sustainability NEW

https://finance.yahoo.com/quote/FB?p=FB

Chart Statistics Profile Financials Options Holders Historical Data Analysts Sus https://www.cfainstitute.org/ethics/Documents/esg_integration_overview.pdf

Appendix I. Metrics

I. Accounting Statements: a) Income Statement; b) Balance Sheet; c) Statement of Cash Flows

II. Metrics:

   a. Free Cash Flow (FCF)
      i. Non-financial firms: FCF_{nf} = Net Income + Depreciation – Capital Expenditures (CAPEX) – Changes in Working Capital, Positive for established companies
      ii. Financial Firms: FCF_f = Net Income + Depreciation – Capital Expenditures (CAPEX) – Additions to Reserves to stay capital compliant
      iii. FCF/Revenue (or Sales) = FCF/R = how much of the revenue of the firm is available to be distributed to shareholders (10% or higher)
      iv. CAPEX/Revenue = CAPEX/R = The percentage of revenue that must be devoted to operations so that the firm can continue operating, this percentage should not be significantly over 50%
      v.
   b. R = Revenue or sales
   c. E = Shareholders' Equity
   d. Net Income = NI = Net Earnings after taxes
   e. D = Long term debt
   f. M= Marketable securities
   g. Current assets (CA) = short-term assets that convert into cash within a year, e.g., inventory, accounts receivables
   h. Current liabilities (CL) = short-term liabilities such as accounts payables, portion of long term debt payable within a year
   i. Net Debt = Long term Debt minus Marketable Securities
   j. EBITDA = ***E***arnings ***B***efore ***I***nterest, ***T***axes, ***D***epreciation, ***A***mortization - a measure of total earnings
   k. ROE = NI/E – a measure of Profitability; <u>preferable if ROE > 10%</u>
   l. D/E – a measure of Risk or inverse of Leverage Ratio (E/D, a measure of capital adequacy). Analysts look at ROE and D/E together as higher D/E – they expect your firm to ab at the industry average with your D/E and better than average on the ROE.
   m. Net Debt/EBITDA - a measure of Financial strength – shows how many years it would take the firm to pay off its debt, <u>the smaller the number the better</u>.
   n. Current Ratio = CA/CL – a measure of liquidity, <u>preferable 1.5 to 2.5</u>
   o. EPS = Earnings per Share, NI/(number of shares outstanding), best if EPS>5% per year
   p. Price Earnings ratio =P/E (E here not to be confused with Equity) - e.g., if the PE= 100/10 = 10 years – you pay $100 for a share, and assuming the earnings are $10 per year, you will recoup your investment of $100 in 10 years). <u>Preferable if P/E < 15, historical average</u>

q. Price to Book, P/B, price of the stock divided by the book value of the stock (the latter is found by dividing the shareholders' equity by the number of shares outstanding). Some investors buy stock in companies that have a low P/B, showing that the market price is less than the book value of the equity – it happens to firms that are in financial distress or in firms that are not well covered by analysts so there is little information. It's the latter that investors like. Preferable if less than 1, other things equal.
r. PEG = Price Earnings ratio divided by projected Growth rate of earnings, g, = (P/E)/g, preferably lower than one and non-zero, non-negative (but if negative, it's better if it's closer to zero, e.g., it's better if it's -1.5 than -5).
s.

Appendix II. Accounting: a) Income Statement; b) Balance Sheet; c) Statement of Cash Flows

SEE EXCEL: FILE APPENDIX II – Accounting Financial Statements

Accounting Financial Statements:

Statement of Cash Flows – bridging the Income Statement and the Balance Sheet

Cash Inflow Minus Cash Outflow = Change in Cash

i. Cash Flows from Operations [the reason a firm is in business]

Cash Inflows (+)	**Cash Outflows (-)**	**Change (Difference)**
Sales	Payments to suppliers	
Depreciation	Salaries	
Decrease in inventory	Increase in A/R	
	Decrease in payables	
	Decrease in accruals	

ii. **From Investing [the investments needed to keep the firm in business]**

Cash Inflows (+)	Cash Outflows (-)	Change (Difference)
Sale of fixed assets	Purchase of fixed assets	
	Purchase of other firms	

iii. **From Financing [raising the capital needed to grow the business]**

Cash Inflows (+)	Cash Outflows (-)	Change (Difference)
Sale of stock	Buyback stock	
Issue of long-term debt	Repay long term debt	
Issue of notes payable	Pay dividends	
	Pay interest	

III.

How do you assess Tesla's financial risk rating - high, moderate, low? Support your reasoning using Tesla's own data and the metrics that you find relevant for the task

Appendix II. Financial Statements

A. Income Statement

	Acme Corporation
For the Year Ended on December 31, 2017	
Net Sales	15,000,000
Cost of Goods Sold	5,000,000
Gross Profit	10,000,000
Depreciation Expense	2,000,000
Selling & Administrative (S&A) Expense	800,000
Operating Income (EBIT - Earnings Before Interest, Taxes)	7,200,000
Interest expense	1,710,000
Income before taxes	5,490,000
Income tax (42.00365%)	2,306,000
Net Income	3,184,000
Earnings per share, 4,000,000 shares	0.7960
Common Dividends, Paid ($0.10 per share)	$400,000
Increase in Retained Earnings	2,784,000

B. Balance Sheet, Assets

	12/31/2017		
Assets	2016	2017	Change
Cash	9,000,000	10,000,000	1,000,000
Accounts Receivables, A/R	700,000	1,000,000	300,000
Inventory	17,300,000	10,000,000	(7,300,000)
Marketable Securities	9,000,000	8,000,000	(1,000,000)
Prepaid Expenses	1,000,000	1,000,000	-
Total current assets	37,000,000	30,000,000	(7,000,000)
Fixed assets, Gross	14,000,000	28,000,000	14,000,000
less: Accumulated depreciation	$ (6,000,000)	$ (8,000,000)	(2,000,000)
Fixed assets, Net	$ 8,000,000	$ 20,000,000	12,000,000
Total assets	$ 45,000,000	$ 50,000,000	5,000,000

B. Balance Sheet, Liabilities & Equity

	12/31/2017		
Liabilities & Equity			
	2016	2017	Change
Accounts payables (A/P)	7,000,000	4,000,000	-3,000,000
Notes payable	4,000,000	3,000,000	-1,000,000
Accrued expenses	3,000,000	2,000,000	-1,000,000
Total current liabilities	14,000,000	9,000,000	-5,000,000
Long-term Debt	10,784,000	15,000,000	4,216,000
Total liabilities	24,784,000	24,000,000	-784,000
Preferred stock	2,000,000	1,000,000	-1,000,000
Common stock	1,000,000	3,000,000	2,000,000
Capital in excess of par	10,000,000	12,000,000	2,000,000
Retained earnings	7,216,000	10,000,000	2,784,000
Total common equity	18,216,000	25,000,000	6,784,000
Total equity	20,216,000	26,000,000	5,784,000
Total liabilities & equity	45,000,000	50,000,000	5,000,000

Gallagher. T., "Financial Management – Principles and Practice,
6th ed., Freeload Press, ISBN: 1-930789-15-7.