I. Introduction – The Goals and Nature of Credit Analysis

Credit analysis is an art, not a science. The goal of credit analysis is to make a judgment about an obligor’s ability and willingness to pay back what it owes, when it is owed. These obligations would include short and long term loans, trade payables, letters of credit and all types of derivatives contracts.

The fundamental question that a credit analyst needs to answer is: “what is the degree of risk that an obligor will have sufficient cash to pay back an obligation on a timely basis?” If the obligation is short term, and the obligor has a lot of liquidity, the answer is probably easy to determine. If the time frame is longer, the answer is not so easy. The credit analyst must assess a lot of factors that will impact the obligor’s ability to pay in the future, including the willingness to pay. If a confident conclusion cannot be reached, the transaction will be rejected, or structured to reduce the risks, usually through the taking of collateral or security.

Financial analysis is the starting point of credit analysis. Historic trends must be examined relative to the current financial position (balance sheet and capital structure) and operating performance. These trends serve as the basis for judging the degree to which forecasts for future operating results and financial position are reasonable.

Determining what is “reasonable” leads to the “art” of credit analysis. Judgments must be made about the forecasts of performance relative to history, management capability, competitors’ performance and competitive pressure, and the macro-economic environment. Judgments must also be made about the strength or weakness of the obligor’s current and future financial position.

In traditional credit training, the process of credit analysis is framed by three simple questions:

Who’s the borrower?
What’s the purpose of the loan (obligation)?
How and when will it be paid back?
The analysis to be done to answer these questions can be addressed in another traditional way, referred to as the four “C’s” of credit – capacity, capital, condition and character.

Capacity is the ability to generate enough cash to repay all obligations, when due. Assessing this is the goal of credit analysis.

Capital is required during periods of weak cash flow generation for a company to sustain itself. If there isn’t sufficient cash flow from operations to meet obligations, then assets may have to be sold to produce cash.

Condition refers to the macro economic and competitive environment which will impact an obligor’s future performance and its ability to generate cash.

Character is not only the willingness to repay an obligation, and live up to its terms, but also honesty relative to the risk of fraud. It might also refer to the competence of the obligor.

The challenge for the credit analyst is to move from these simplistic statements to a framework for reaching an answer to this question: “What is the degree of risk that an obligor will be able to have, or to generate, sufficient cash to pay back the obligation on a timely basis?”

This question is fundamental to the analysis of all types of corporate / commercial obligations – bank loans (long and short), trade credit (supplier credit), trading obligations (foreign exchange and derivatives), and rated (public) obligations from short term commercial paper through long term debt (senior and/or subordinated bonds), and subordinated forms of equity such as preferred stock.

Of course, the answer can range from “zero risk” to “a lot of risk”. The goal of credit analysis is to establish where an obligor, and specific obligations, fits into this range. In modern bank risk management, this is analogous to determining a “risk rating”. It is also analogous to a public debt rating established by Moody’s or Standard and Poor’s.

Almost all forms of debt have an obligation to pay interest on a periodic basis. Some very short term debt instruments have interest paid at maturity. The greatest risk posed by debt is not the interest payments, but the principle payments.

Short term debt is commonly thought of as debt that matures in less than one year. In reality, its maturity is usually much less than one year. Debt in the form of credit from trade suppliers is usually due in 30 to 90 days from delivery. Short term bank debt can be payable “on demand”, but more often than not will have notes that mature in 30 to 90 days. For large companies with access to the public commercial paper market (CP), the maturities are usually less than 30 days. Short term debt is often “rolled over” or extended. But if the holder of the debt demands payment, this will come from a company’s liquidity. Either from cash on hand, or the natural cash generated from the collection of accounts receivable or the liquidation of inventory.
Long term debt is usually in the form of bank term loans or publicly or privately placed long term notes or bonds. This debt may be amortizing (period payments of principle) or be due in a lump sum at maturity. Most bank terms loans require periodic principle payments. Public and privately placed notes and bonds often have a single payment due at maturity. Repayment of long term debt comes from annual cash flow generation or refinancing. But, refinancing of long term debt will occur only if the lender is confident that the borrow has the ability to generate cash flow to repay it, or the ability to sell large amounts of assets to repay.

The degree of risk associated with a company’s cash flow is often referred to as the volatility of its cash flow. High risk is due to highly volatile cash flow. Low risk is a function of very low volatility of cash flow.

For example, the cash flow volatility produced by an office building that is leased entirely to a highly rated corporation for a very long term, with the tenant paying all operating costs and maintenance will be very low. The credit risk of a mortgage loan made to finance this building would have risk characteristics very similar to that of the long term corporate tenant.

On the other hand, the risk of a mortgage loan for the same building, but with no major long term tenant, might be very high. To make a judgment about this, the credit analyst would have to do extensive research about current and historic rental rates, occupancy rates, the existence of competitive buildings and plans for new ones, and the macro-economic outlook for the demand for office space in the location. An appraisal would be obtained to establish an independent view of the building’s value, but this should not be the only basis for establishing the degree of risk of the potential loan.

Highly risky (volatile) future cash flow doesn’t mean that a particular loan or obligation has to be risky. A good lending officer or risk manager can structure a loan to remove some of the risk. For a general corporate loan, the analysis can focus on a “second way out”. If the borrower can’t generate sufficient cash to repay an obligation, it can hopefully raise cash in a second way – usually through the sale or liquidation of an asset. This can be a variety of assets available to the obligor, or a specific asset that might be identified and secured.

An obligation can be structured such that the risk of the specific obligation is actually lower than the overall risk of the obligor. Collateral (security) is used to accomplish this. Some very secure loans are made to bankrupt companies! As one old saying goes, “it is possible to turn a sow’s ear into a silk purse!” Where this is done, the risk rating of the specific obligation could be much better than the risk rating of the bankrupt company! The probability of the secured obligation being repaid on time could be very high, due to the nature of the collateral. On the other hand, the ability to forecast the repayment of unsecured obligations to a bankrupt company would be very difficult.

The credit crisis that began in 2007 was a result of the flawed assessment of collateral used to reduce risk. The “CDO’s” (collateralized debt obligations) were secured by home mortgages in The United States. The credit quality of the individual obligors was relatively low (maybe very low), but each loan was
secured by a residence. There seemed to be a very low risk that losses in a “pool” of mortgages (the CDO) would exceed a certain level. The crisis occurred because default rates turned out to be much higher than anticipated, the value of the collateral (the mortgages on homes) turned out to be less than the amount of the mortgage loans, and the actual losses in these pools of mortgages far exceeded what was forecast. The credit analysts for many of these CDO’s did a poor job of forecasting cash flow of the individual borrowers, as well as the value of the underlying collateral.

Summary of the Introduction

The fundamental question of credit analysis is: “what is the degree of risk that an obligor will have sufficient cash to pay back an obligation on a timely basis?” The “art” of credit analysis is an understanding about how to convert historic financial and operating performance and financial condition into a judgment about an obligor’s willingness and ability to repay an obligation in the future. The traditional four “C’s” of credit analysis still provide a valid, if simplistic, framework for this process – assessing Capital, Capacity, Conditions, and Character.

Financial analysis is the starting point of all “securities” analysis – equity securities and debt (credit) securities or obligations. An equity analyst will use financial analysis tools to estimate the value of a company’s equity, usually in the form of the market value of its publicly held stock, or the market value of the firm if the analyst is working for a private equity fund. A credit analyst will use financial analysis to try to establish the degree to which an obligor can fulfill the terms of its debt obligations – short term and long term. This is analogous to the estimation of the value of these obligations. Unlike equity, the value of a debt obligation at its maturity date should be the same as when it was issued. There is no specific maturity date of equity, which is the key difference between debt and equity. Both equity analysis and credit analysis require the use of significant judgment to assess future performance.

The remainder of this chapter will describe how companies utilize different sources of funding to finance their assets. This is the “capital structure” of a company.

An appropriate capital structure is one that provides adequate returns to the equity investors, while not incurring so much debt that the risk of bankruptcy becomes very high. A good credit analyst will always be assessing the quality of an obligor’s capital structure, and the degree of risk that it creates for the various suppliers of capital. A company’s capital structure should be designed to match financial risk with the nature of its business risk. A company with very low business risk can safely assume a lot of balance sheet (financial) risk in the form of leverage (debt). A company with very high business risk will not survive for long if it also assumes a great deal of financial risk (leverage).

The remaining chapters of this course cover more specific aspects of credit analysis, including:
- Fundamentals of financial analysis
- Principles of Credit and Credit Analysis
- Debt Capacity and Cash Flow Analysis
- Cash Flow Forecasting
- Credit facility structure
- Modern risk management in commercial banks

II. Foundations of Corporate Credit Analysis - Capital Structure and Debt Capacity

A. Balance Sheets and Capital Structure

A company’s capital structure is comprised of a combination of debt and equity that is used to fund the assets on its balance sheet. Debt includes any obligation to make a payment to another entity at some point in time. Therefore, this definition includes all types of accounts payable – accrued wages and taxes and trade payables. Equity is a combination of the original investment by the owners, and earnings that are retained, rather than paid out as dividends.

<table>
<thead>
<tr>
<th>Company</th>
<th>XYZ</th>
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</thead>
<tbody>
<tr>
<td>Balance Sheet</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash and Short Term Investments</td>
<td>100</td>
</tr>
<tr>
<td>Accounts</td>
<td></td>
</tr>
<tr>
<td>Receivable</td>
<td>20</td>
</tr>
<tr>
<td>Inventory</td>
<td>20</td>
</tr>
<tr>
<td>Prepaid Expenses</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total Current Assets</strong></td>
<td><strong>145</strong></td>
</tr>
<tr>
<td>Property</td>
<td>200</td>
</tr>
<tr>
<td>Equipment</td>
<td>100</td>
</tr>
<tr>
<td>Investments</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total Long Term Assets</strong></td>
<td><strong>350</strong></td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td><strong>495</strong></td>
</tr>
<tr>
<td>Wages Payable</td>
<td>5</td>
</tr>
<tr>
<td>Accounts</td>
<td></td>
</tr>
<tr>
<td>Payable</td>
<td>30</td>
</tr>
<tr>
<td>Short Term Debt</td>
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</tr>
<tr>
<td><strong>Total Current Liabilities</strong></td>
<td><strong>60</strong></td>
</tr>
<tr>
<td>Long Term Debt</td>
<td>0</td>
</tr>
<tr>
<td>Equity</td>
<td></td>
</tr>
<tr>
<td>Common Stock</td>
<td>50</td>
</tr>
<tr>
<td>Retained</td>
<td></td>
</tr>
<tr>
<td>Earnings</td>
<td>385</td>
</tr>
<tr>
<td><strong>Total Equity</strong></td>
<td><strong>435</strong></td>
</tr>
<tr>
<td><strong>Total Liabilities &amp; Equity</strong></td>
<td><strong>495</strong></td>
</tr>
</tbody>
</table>
The appropriate ratio of debt and equity in the capital structure is difficult to determine, and is one of the key tasks of credit analysis. It is a function of the nature of the assets being funded, the volatility of the company’s future cash flow, the availability of sources of capital, and the tolerance for risk by the owners and suppliers of capital.

In the example above, XYZ Company has what would be described as a very conservative balance sheet. There is very little debt, and few short term (current) liabilities. Total assets of 495 are funded with 435 of equity and only 60 of liabilities, all of which are short term. There is no long term debt.

A company can support a lot of debt if its cash flow is stable, and its assets are liquid. If the company’s future cash flow is subject to a lot of risk (high volatility) and its assets are relatively illiquid, it might have difficulty paying interest and principle at some future point, depending upon the amount of its debt, and the terms of repayment. Debt capacity issues for companies are not very different from that of individuals!

If a borrower’s future cash flow is subject to a lot of risk, equity is the appropriate source of funding and will be the dominant part of the capital structure. Equity is permanent capital with no fixed charges, and no fixed repayment schedule. It also retains the right to all cash flow that remains after expenses and fixed charges, including interest and principle payments.

In order to boost their return on investment, equity owners have an incentive to use debt (leverage) to buy assets that will be used to produce revenue and profit. If the return on these assets is greater than the cost of debt, the benefit accrues to the owners of the company. While we expect owners to be prudent and not incur more debt than they can afford, sometimes they are overly aggressive, or just do not know how much debt can be safely incurred. It is the job of the credit analyst to answer this question – “what is the debt capacity of a company?”

B. Capital Structure and its Impact on Return on Equity (ROE)

Common Equity is the fundamental part of a company’s capital structure. It is the funds that belong to the owners. It has no date at which it must be returned (maturity) and no legal obligation to pay dividends. It is contributed when a company is formed, and builds as a company generates, and retains, profits.

The goal of the owners of equity is to generate a good return on their investment. This depends upon the profitability of the company and the efficient use of the balance sheet. Some company’s operate with very low profit margins but very high inventory turnover (for example, supermarkets or discount department stores) to produce a good return on equity. Other company’s might operate with very high profit margins but very low asset (inventory) turnover to produce a good return on equity.

In the case of XYZ Company (above), the equity is 435. If the owners expect a return on their capital of 10% after tax (which is a relatively moderate expectation), the company must be able to figure out how to generate 43.5 after tax from a
balance sheet with total assets of 495. Assuming a tax rate of 35%, this is pre tax profit of about 67.

How does a company produce 67 of pre-tax operating profit with a balance sheet of 495? It has to figure out how to generate enough revenue from its assets, at a sufficient profit margin.

A simple way to explain this is through a model of how companies can be managed to produce an acceptable return on equity.

Using the XYZ company balance sheet, we can look at a few ways to produce the desired return on equity of 10%.

As shown above, a 10% return on 435 of equity is 43.5. Total assets of the company are 495.

Return on equity = net profit / average equity

In this case ROE = 43.5 / 435 = 10%

Leverage is the ratio of total assets that are funded by equity. It also can be measured as the ratio of debt / equity, but for this example we’ll stay with the ratio of total assets to equity. Leverage = assets / equity.

In this case, Leverage = 495 / 435 = 1.138 Total assets are equal to 1.138 times total equity.

The remaining variable in this example is the amount of revenue that is produced from the assets, and the profit margin. If XYZ is in an industry that produces very low profit margins, such as retail grocery chains (supermarkets), the after tax profit margin is about 2%. How much revenue is necessary to produce 43.5 of after tax profit at a 2% margin? It’s 2175! Or, 2175 X .02 = 43.5

If XYZ was in a business that had much higher profit margins, say 25%, it would only need revenue of 174 to produce its profit of 43.5.

What does this all mean? It illustrates the fact that companies operate with different economic models, depending on the nature of their business and industry, the nature of their assets, the competitive situation and the economic environment.

The model that we just discussed can be summarized as follows, and is found in most basic corporate finance textbooks. It was originated by the Treasurer of DuPont, a major chemicals company, and is often referred to as the “DuPont” model....
This formula uses basic algebra to prove that a company's return on equity (ROE), is absolutely a function of three key variables – profit margin (net profit / revenue), asset turnover (revenue / assets), and leverage (assets / equity). In this formula, “Assets” cancel out and “Revenue” cancels out, leaving Net Profit / Equity = Net Profit / Equity!

In the case of XYZ, the leverage is 1.138 – assets of 495 and equity of 435. In order to produce an ROE of 10%, it must find some combination of asset turnover (revenue / assets) and profit margin (net profit / revenue), to achieve this.

In the example above, a supermarket, the profit margin is very low at 2%. Using the DuPont formula, in order to produce an ROE of 10%, the asset turnover must be 4.394. In other words, the balance sheet of 495 must somehow produce total revenue of 2175!

\[ \text{ROE (10\%)} = \text{leverage (1.138)} \times \text{asset turnover (4.394)} \times \text{profit margin (2\%)} \]

\[
\begin{align*}
\text{Net Profit} &= 43.5 \\
\text{Equity} &= 435 \\
\text{Total Assets} &= 495 \\
\text{Revenue} &= 2175 \\
\text{Net Profit} &= 43.5 \\
\text{Total Equity} &= 435 \\
\text{Total Assets} &= 495 \\
\text{Revenue} &= 2175
\end{align*}
\]
If the XYZ company was in an industry where it was able to obtain a profit margin of 25%, not 2%, it would only need to produce revenue of 174 to produce the 43.5 of net profit necessary for a 10% return on equity.

\[
10\% = 1.138 \times \left( \frac{174}{495} = 0.352 \right) \times 0.25
\]

Is it possible that one company can operate with a profit margin of 2% and another with 25%? What are the factors that might allow this or cause this? This is what the credit analyst must understand in order to judge whether or not a company's business model is reasonable.

The factors that cause different industries to operate with different combinations of profit margin, asset turnover and leverage are a function of the nature of the business and competition. Supermarkets operate with very low margins for a variety of reasons. First, they are in a highly competitive industry. Competition severely restricts the ability to manage prices. Second, they sell merchandise that, by definition, has very high natural turnover. Things don’t sit on the shelves very long in a well managed supermarket. Fixed assets (stores, fixtures, and equipment) represent a relatively small proportion of the total assets of a supermarket. Most of the assets will be in the form of inventory which should turn over very quickly.

A company with a very high profit margin will invariably possess a very significant competitive advantage. A software developer such as Microsoft might be an example. Most of its assets are equipment and facilities. Its revenue is the result of intellectual investment and the profit margins are a function of its very strong market position. Some have accused it of having almost a monopoly in certain of its products.

If a company finances its assets with all equity, its return on equity is determined solely by its profit margin and how much revenue it can produce from its balance sheet (asset turnover). If it adds debt to its balance sheet, Return on Equity is raised as equity funds less than 100% of the balance sheet assets.

The original idea for the discount department store (like Wal*Mart) is based on this concept. In order to obtain a certain Return on Equity, the owners created a lost cost environment and reduced prices, with the idea that they could sell a lot of merchandise with a given fixed cost. It worked! Low profit margin, but very high turnover, produced huge profits, even with little leverage.

The challenge for the owner (owners) of a company is to determine how much debt can be used to fund the balance sheet without incurring a high risk of bankruptcy or distress due to its inability to service the debt. In the example we’ve used here, increasing the leverage of XYZ would produce a very significant increase in return on equity.

For example, XYZ produced a 10% ROE with asset turnover of 4.394 profit margin of .02, and leverage of 1.138. Assets are 495 and equity is 435.
Leverage would be higher if the 495 of assets was funded with more debt and less equity. For example, let’s reduce equity to 200, substituting it with 235 of debt. Total liabilities would then grow from 60 to 295, and Leverage would increase form 1.138 to 2.475. What is the impact of this on ROE?

If profit margins could be maintained at 2%, the substitution of debt for equity in the balance sheet (increased leverage), results in the ROE growing from 10% to 21.7%

\[
\begin{align*}
21.75\% & = 2.475 \times 4.394 \times 0.02 \\
\text{ROE} & = \text{Leverage} \times \text{Asset Turnover} \times \text{Profit Margin}
\end{align*}
\]

Of course, it would be more difficult to maintain the 2% profit margin now because the company has just increased one of its major components of expense – interest! But it’s possible that management could figure out how to operate a bit more efficiently in order to make up for the increased interest expense. More than likely, profit margins would decrease by all or part of the increased interest expense, and ROE would not be 21.7%, but it would still be a lot higher than it was with much less leverage.

If the management of the company, or its owners, wanted to be very aggressive in terms of leverage, they could produce even an higher ROE. Let’s reduce equity to 50, and the 495 of total assets was now funded with 445 of liabilities. We can calculate the amount by which increased interest would reduce operating profits.

In our first example, with low leverage, XYX the supermarket, had revenue of 2175 and pretax profit of 67. Assuming that most of the increased leverage was 9% interest bearing debt of 300 (some of the increased leverage could come from non-interest paying trade payables), the annual interest bill becomes 9% X 300, or 27. This reduces the pretax profit from 67 to 40, and the after tax profit (tax rate of 35%) to 26. The profit margin now becomes 26 / 2175 (total revenue) = 1.195%, down from 2.0% without debt.

But even though the profit margin is reduced, the extraordinary leverage creates an ROE of 52%!

\[
\begin{align*}
52\% & = 9.9 \times 4.394 \times 0.01195 \\
\text{ROE} & = \text{Leverage} \times \text{Asset Turnover} \times \text{Profit Margin}
\end{align*}
\]

If companies could easily operate, and sustain, this amount of leverage, while producing either high turnover or high margins, they certainly would. It could be a formula for getting very rich! But they can’t, for two major reasons.

First, if the business could sustain itself with this leverage, asset turnover, and profit margins, what would logically happen in a competitive environment with little barriers to entry? More competitors would rapidly show up in order to reap such huge returns. And, more competition would drive down profit margins, given the fact that a market can sustain only a certain amount of business. With lower margins, operating profits decrease, cash flow decreases, and this leads to the second reason why high leverage cannot usually be sustained – the bankruptcy risk of financial leverage.
The high interest payments from leverage directly reduce operating profit and margins. This might be fine if revenue, expenses, and operating profits before interest are stable. But in the real world, they are not, for a variety of reasons, competition being only one of them. If revenue should fall, or not grow in line with expenses, operating profit falls very rapidly, and the company is at risk of not being able to meet its interest payments from profits. When this happens, it has to rely on liquidity or the sale of assets to fund the negative profit. By substantially increasing leverage, and reducing the amount of equity that funds the balance sheet, its ability to maintain assets that can quickly be turned into cash, without impairing the business, is very limited. Assets produce revenue, and as assets are liquidated, revenue is usually reduced, as is cash flow. The substantial increase in leverage can severely reduce a company’s financial flexibility.

The challenge of creating a company’s capital structure is to use enough financial leverage (debt) to achieve an adequate return on equity, as in the models above, without creating too much risk of bankruptcy. The amount of financial leverage that a company can undertake is a function of the nature of its business risks, and the consequent impact on cash flow volatility. The ideal capital structure is one that produces a competitive return on equity, while matching financial risk and business risk.

C. Capital Structure and Risk

The design of a company’s capital structure is not arbitrary. It must be created and maintained to achieve a return on equity that is high enough to attract capital. But it also must be appropriate for the nature of a company’s business risk, usually identified as the volatility of its revenue and operating profit.

Almost every company and every industry has a capital structure that is a natural function of the risks of its business model. This “natural” capital structure is based upon the nature of the assets used to produce revenue and profits, the competitive and regulatory environment, the degree to which it is subject to the macro-economic environment, the labor environment, and the consequent stability of the company’s business – revenue and expenses.

Companies that are subject to heavy competition and are highly vulnerable to macro economic conditions generally cannot survive with a lot of debt – the operating cash flow is subject to a lot of variation (volatility). Companies that are well capitalized (a lot of equity relative to their business risk) can sustain long periods of low or negative cash flow. Companies that are poorly capitalized (too much debt relative to their business risk) cannot sustain long periods of low cash flow before they are forced into bankruptcy by their creditors.

Companies whose assets are highly liquid and have stable value can maintain a lot of leverage. Banks are an example of this. Companies with illiquid assets, but which have very stable revenue and operating costs can also sustain a lot of leverage. Regulated utility companies are an example.
For the past thirty years, private equity firms and investors have been creating huge amounts of wealth (and destroying some as well) through the acquisition of companies using large amounts of debt. The debt is used to but out existing owners – public and / or private. In the United States, there was a large boom of these “leverage buy outs” in the 1980’s, and again from 2002 through the present. The trend declined during the US recession of the early 1990’s, amid a lot of bankruptcies of some of the buy out deals created in the 1980’s.

Many of the deals that didn’t work, and ended up in bankruptcy, were the result of adding a lot of debt to the balance sheet (leverage) of companies that could not sustain it, due to high levels of operating risk. Very few bankers or investors ever set out to do a deal that is bound to fail. They never show a business model and cash flow forecast that doesn’t work! Projected cash flow will always be shown to be sufficient to reduce debt levels and leverage over time, either from cash flow or from the sale of assets. Usually, projections for increased cash flow are from expected increased operating efficiency and cost reductions.

When these deals don’t work out as planned, and the creditors force a bankruptcy, it is often the result of one or both of two factors. Of course one is a general decline in the macro economic environment (the external factors) that was not anticipated. The other, and the one that is most egregious, is the lack of understanding of the nature of the risks facing the company, and the consequent volatility of its cash flow due to operating and competitive factors. Unfortunately, a lot of smart investors and bankers make this mistake, and continue to due so. One of the key jobs of a credit analyst is to understand which types of business can sustain leverage, and which cannot. This is the concept of the “natural” capital structure.

We will pursue this idea in the next parts of this course. But, here are a couple of examples.

What are the operating risk characteristics of companies in the following industries? What is the degree of volatility of their operating cash flow in a stable economic environment?

Supermarket?
Retail Apparel Department Store Chain?
Software Developer?
Pharmaceutical Manufacturer?

Supermarket chains have been the subject of a lot of leverage buyouts by private equity investors, and many of them have been successful. The reason is that these businesses have a relatively small degree of revenue and expense volatility. They sell commodity products with relatively stable fixed costs. There is very little inventory risk (the risk that something won’t sell at its posted price). When these companies do fail, it’s usually do to over-expansion (building new stores that don’t produce the anticipated revenue), labor disputes, or extraordinary events, such as a major fire.
Retail apparel chains have also been subject to a lot of buyouts. Most of them failed. Standard and Poor’s once wrote a report (after some of the failures) that stated “a highly leverage apparel retailer is a contradiction in terms”. There are so many things that can wrong in the business, that high financial leverage adds a huge bankruptcy risk. Merchandise risk is just one of these risks. Moreover, a highly competitive apparel merchandiser needs to have tremendous financial flexibility. They need to move with trends – including buying fresh merchandise and marking down stale merchandise. The investment bankers that structured these deals didn’t seem to understand these basic risks.

Are pharmaceutical manufacturing or software development risky businesses? Based on historic knowledge of some very successful companies in these industries, one might be tempted to say “no”. But they share a common characteristic that make their business and operating risks very high. Both industries require huge investments in research and development to produce products. The success rate might be relatively low, and the time to develop saleable products can be very long. These industries require a lot of “patient” capital for their business model to work – equity as the dominant part of their capital structure.

The next chapter will review how financial analysis is utilized to assess business risk and capital structure.