

## CHAPTER 6

### Cash Flow Analysis and Forecasting

In earlier chapters, we stated that financial analysis is the starting point of credit analysis. This chapter illustrates how financial analysis is used to reach observations about the credit quality of two companies – Disney and Enron.

A company's capital structure is determined by the nature of the risk of its business. Business risk is characterized by the volatility of its earnings and cash flow. If volatility is low (earnings and cash flow are stable), a company or enterprise, even an individual, can easily exist with a relatively high degree of debt (leverage). If volatility is high, due to the risk characteristics of the company and its industry, the ability to operate with a high degree of debt is limited. This is due to the risk that the company's cash flow would be insufficient to meet its operating needs and service its debt. Obviously, this is a situation that leads to insolvency and bankruptcy.

High liquidity can modify this risk, but negative cash flow can rapidly "eat up" a company's liquid assets. And, as was the case with Enron (2002) and Bear Stearns (2008), when the providers of liquidity (lenders, counter parties, suppliers) become severely concerned that a company will run out of cash, they tend to cut off credit, and a bankruptcy is often the result.

***Companies are forced into bankruptcy for one of three reasons:***

- ***They run out of cash***
- ***They fear that they will run out of cash***
- ***Their suppliers of liquidity fear that the company will run out of cash***

***Wall Street Journal 29 May, 2008***

***“In a meeting Thursday that lasted barely 10 minutes, [Chairman James Cayne for the first time publicly shared his feelings](#) about the demise of the investment bank that he ran for 14 years. Addressing several hundred Bear Stearns shareholders, many of them employees, he spoke of his regret about the evaporation of cash that had led to the company's fire sale to J.P. Morgan in March with the federal government playing chaperone.”***

The ultimate function of credit analysis is to assess the degree to which a company is at risk of running out of cash. This entails assessing historic and future cash flow generation, and current and future liquidity.

***Cash from operating activities is the key indicator of the extent to which a company has the ability to fund investments, operate, pay dividends, and repay debt, without having to resort to outside sources of financing.***

Cash (and cash equivalents) from operating activities is the most important information that a credit analyst must understand. While companies that are growing rapidly might not produce enough cash from operations to fund all investments, at some point growth slows, and cash flow, after investments, must become positive.

***Companies cannot sustain negative cash flow from operations, and after investments, for indefinite periods of time.*** This is a fundamental concept of corporate finance – if investments do not produce a return that is greater than the cost of capital (which includes debt and equity), the providers of that capital (equity and debt investors), will no longer be willing to supply capital. One of the goals of equity analysts and credit analysts (also collectively referred to as “securities analysts”) is to identify the degree to which the management of a company is using its capital effectively. Ultimately this is measured as a cash return on capital, not an accounting return on capital. Dividends are paid, and debt is reduced from cash, not from accounting earnings.

## **Cash Flow Analysis**

Typical international accounting standards provide that companies will produce three sets of basic financial information (plus notes):

- Income Statement
- Balance Sheet
- Cash Flow Statement

The International Accounting Standards Boards (IASB) issued “IAS 7 Statement of Cash Flows” in 1992. It is the standard rule for preparing the Cash Flow Statement. According to IAS 7, companies which issue financial statements in accordance with IASB standards “must provide information about the historical changes in cash and cash equivalents of an entity by means of a statement of cash flows...”

Cash flows are inflows and outflows of cash and cash equivalents (very liquid investments) which arise during a specific accounting period from:

- operating activities

- investing activities
- financing activities

The Cash Flow Statement will reconcile and balance all uses and sources of cash to show how the cash balance changed from one period to the next.

Equity and credit analysts often use variations of the cash flow statement for certain analysis objectives. Free Cash Flow, EBIT (earnings before interest and taxes), and EBITDA (earnings before interest, taxes, depreciation and amortization) are described below within the context of the three components of the cash flow statement – operating activities, investing activities, and financing activities.

### **Cash from Operating Activities**

The first section of a cash flow statement is intended to show the amount of cash that is generated from the company's fundamental business activity –cash revenue generation less cash expenses. Cash flow from operations is one of the most important pieces of information for both financial and credit analysis. It identifies the fundamental strength of a company to generate “cash” profits, as opposed to accounting profits.

The calculation of operating cash flow starts with a company's net income. Adjustments must then be made for “non-cash” charges to income, such as depreciation. Non-cash expenses are added to net income reflect an approximation of cash and “cash equivalents” that is generated from operations.

According to international accounting standards, cash from operating activities is shown after all non-cash and non-financing changes in working capital. In other words, changes in the non-cash components of current assets and current liabilities, which include accounts receivable (from customers), inventories, pre-paid assets, accounts payable (to suppliers) and other payables.

A net increase in working capital is considered a use of cash from operations – current assets would have increased more than current liabilities. A decrease in net working capital implies the generation of cash – current liabilities would have grown more than current assets, or current assets declined more than current liabilities.

The inclusion of the net change in working capital in the cash flow statement is the accepted accounting standard. However, for the purposes of credit analysis, it is useful to separately analyze cash from operations from cash used or generated by changes in working capital. This is due to the fact that some forms of current liabilities are equivalent to debt, but difficult for an analyst to identify. Therefore it is useful to look at cash from operations before and after the impact of changes in working capital. This will be illustrated in the two examples later in the lesson.

The first section of a company's statement of cash flows concludes with:

**Net Cash Provided by Operating Activities = Net Income + Depreciation and Amortization – Changes in Working Capital**

EBIT, earnings before interest and taxes, is used by financial analysts to examine the basic earnings and cash generating history of a company, before the consideration of how it is

financed or taxed. Examining the historic trend in EBIT provides a basic indication of a company's business and cash flow volatility or stability. When compared to the capital base, it provides a basic ratio about indication of the degree to which a company has the capability of producing a competitive return on capital, before interest and taxes.

However, like death, taxes cannot be avoided. Nor can interest expense be ignored. EBIT is therefore an insufficient indicator of a company's true ability to generate cash for investing and return to the owners.

EBITDA, earnings before interest, taxes, depreciation and amortization, is a popular, if somewhat misleading metric of a company's fundamental cash producing capability. It is used extensively by credit analysts to identify a company's debt capacity in leveraged buyouts – transactions where companies are purchased using very high amounts of debt. These are also referred to as “HLT's” or “highly leveraged transactions. EBITDA is used as a starting point to determine how much debt a company can service – both interest and principal. It ignores two extremely important uses of cash that cannot be ignored if a company or enterprise is to grow and remain viable – working capital and capital expenditures. It EBITDA is used to predict cash available for debt service, an analyst estimate what will be required every year for working capital and at least a minimum amount of capital expenditures for regular maintenance.

### **Cash Used for Investing Activities**

All companies must make capital expenditures of some sort to sustain their business, whether for maintenance or for growth. Some investments are postponable, but a certain amount of investment must be made periodically in order to maintain revenue and service customers.

Acquisitions of businesses are also included in this category of cash expenditures.

As noted above, if companies do not produce returns on investments that are greater than their cost of capital (cost of equity and cost of debt), they will not produce value nor sufficient cash to pay interest, reduce debt, or return capital to owners in the form of dividends.

Successful investments should return sufficient cash to “pay back” the investment with a return that covers the cost of the investment, the cost of interest to fund the investment, and a positive return to the owners of the equity. The purpose of investing is to maintain cash flow and to increase cash flow via new sources of revenue. This must be done while producing a positive return on invested capital. A risk adjusted interest rate for debt investors, and a risk adjusted return on equity for equity investors.

For high performing companies, cash flow from operations is often sufficient to fund all investing activities.

For companies that are not producing high returns on capital, and for high growth companies, cash flow from operations often is not sufficient to fund all capital expenditures and other investments. These companies must resort to external sources for funding. But, unless a company has tremendous prospects for future growth and profitability (positive cash flow), and can convince the suppliers of capital of that fact, it cannot run an operating cash flow deficit forever. At some point the suppliers of capital will lose confidence in a company's ability to produce positive operating cash flow.

There is one industry that has managed to continue to attract financing over long periods of poor or non-existent operating cash flow. What is it, and why?

The answer is the airline industry. The reason is the nature of the assets and the way they are financed. This is the topic of a future lesson. But, the short answer is that there are a number of lending companies that specialize in aircraft, and are willing to lend purely against the value of the aircraft, regardless of the cash flow of the airline that is utilizing the aircraft. This is an example of a “one way out” loan that was discussed in Lesson Three. In general, these loans work well and the lenders receive full payment with an acceptable return.

The second section of the statement of cash flows concludes with:

**Net Cash Used in Investing Activities = Net Income + Depreciation and Amortization – Changes in Working Capital – Capital Expenditures and Investments**

### **Free Cash Flow**

This is not a phrase that will be seen on an accounting statement of cash flows. But, in effect, it is on the statement, as it is the difference between **Net Cash Provided by Operating Activities (after working capital)** and **Net Cash Used in Investing Activities**.

Free cash flow is the cash produced by a company from operations, after working capital changes, and after all capital expenditures and investments. It is the cash available to pay dividends and the principal amount of debt. It is the amount of cash that can be taken out of a company while ensuring that there have been sufficient expenditures on operations and continuing investment, including working capital.

A company or enterprise that has a history of positive free cash flow has been able to “self finance” – it covers all operating expenses and capital expenditures from the revenue it generates. It will use this “free cash flow” to build liquidity, pay dividends or reduce debt.

**A company’s debt capacity, the amount of debt it can safely maintain and manage, is primarily a function of its historic and projected free cash flow.**

If a company has negative “free cash flow”, it is spending more than its operations can support; i.e., operating cash flow is not sufficient to cover all capital expenditures. In the worse situations, revenue may not even be sufficient to cover operating expenses and cash flow even before capital expenditures would be negative. It will have to finance this operating deficit with outside funds – either more debt or more equity. An historic pattern of negative cash flow is a significant danger sign which must be explained. At some point all enterprises must be able to produce positive cash flow. It’s the only way that debt and equity investors can achieve a positive return on their investment.

Free cash flow is often used by equity analysts for the valuation of an enterprise. Using the discounted cash flow method of valuation, the value of an enterprise is the present value of future free cash flow, discounted at an appropriate cost of capital. Most assets are valued in this manner, including real estate and fixed income instruments such as bonds. The value of a bond is the present value of the future payments. The value of an office building is the present value of its future free cash flow, which is the total of future rents, less all cash expenses, including interest, taxes, operating expenses, and capital expenditures.

The technique for establishing the value of a company and an office building is basically the same. It's the calculation of the present value of a stream of future cash payments to the owner of the company or the building.

The difference between establishing the value of these two types of business enterprises, an operating company and a real estate venture, rests in the challenge of predicting the future free cash flow. The future free cash flow of a company is generally hard to estimate. It requires extensive knowledge of products, competition, expenses, and industry dynamics, including innovation and technological change. An equity analyst will use this information to establish value. A credit analyst will use this information to establish debt capacity and credit quality.

The future free cash flow produced by an office building may, or may not, be easier to forecast than that for a business enterprise. This depends upon the nature of the leases for the space in a building. If the building does not have major tenants with long term leases, the value is based on estimates of rents and occupancy rates. This is subject to many risks and potential volatility – location, market rents, the local real estate market, the local economic situation, etc.

On the other hand, if the office building had only one tenant with a long term master lease, the future cash flow, and the value of the building, is easy to establish. With a master lease the tenant is responsible for all building operating costs. The risk of the cash flow rests on the credit risk of the tenant. If it is a large, and highly credit worthy entity, the value of the building is the present value of the rents to be paid over the term of the lease, plus the present value of the estimated market value of the building at the time of the termination of the lease. Estimating the terminal value of an asset at a distant time is not an easy task. But if it is much more than 10 years in the future, the present value is fairly small compared to the present value of the rental stream.

### **Forecasting Future Free Cash Flow**

The primary role of the credit analyst and equity analyst is to make predictions about the future free cash flow of an enterprise. The equity analyst does this to establish a view about market value. The credit analyst does this to determine debt capacity, and to identify the degree to which the current level of debt, whether short term or long term, is high or low.

The task of forecasting free cash flow is not an easy one for most companies. The process starts with the principles of Lesson I – understanding the dynamics of a company's industry, its competitive position, and the model of how it produces, or hopes to produce, an adequate return on capital (equity) that is sustainable. A significant component of this process is making a judgment about the capabilities, competence, and credibility of the managers of the enterprise. This was succinctly stated by the famous financier, J.P. Morgan...

*“Lending is not based primarily on money or property. No sir, the first thing is character”*

### **Financing Activities**

The final part of the cash flow statement shows changes in sources of financing, both debt and equity, and the reconciliation of the change in cash. If cash flow after investments is positive (positive free cash flow), this section will show how the cash generated is deployed – net reduction in debt, dividends or repurchase of capital stock, or a net increase in cash and cash

equivalents. If cash flow after investments is negative, this section will show how the deficit was financed – debt, equity, or a net reduction in cash and cash equivalents.

This third section of the statement of cash flows concludes with:

**Net Cash Provided by Financing Activities and, the reconciliation of the change in cash from the beginning of the reporting period to the end of the reporting period:**

**Increase (Decrease) in cash and cash equivalents =**

**Net Cash Provided by Operating Activities (after change in working capital)**

- **Net Cash Used in Investing Activities**
- 
- +/- **Net Cash Provided by Financing Activities**

**The Increase (Decrease) in cash and cash equivalents from the Cash Flow Statement will be equal to:**

**Cash and Cash Equivalents, Beginning of period - Cash and Cash Equivalents, End of period**

## **Two Examples of Using Historic Cash Flow Statements to Predict Future Free Cash Flow – Disney Enterprises and Enron Corporation**

### **I. Disney Enterprises, 2001 – 2003**

Disney is a large, global, diversified entertainment company.

For fiscal year 2003, Disney had:

Revenue of US\$ 27 billion,

EBIT of US\$ 2.8 billion,

Net income of US\$1.3 billion.

EBITDA was US\$4.2 billion.

Total assets of about \$50 billion

Equity of about \$24 billion.

The three year period of 2001 through 2003 was one of stable revenue and stable operating profitability. 2001 net income was negative due to a large restructuring charge related to discontinued operations.

Disney is a large, profitable, company, with a substantial amount of gross cash flow (before capital expenditures), and a capital structure with moderate leverage. But this information doesn't indicate whether or not the amount of profit generated is high or low relative to the capital employed. It also does not indicate whether or not its cash flow is sufficient to fund all of its investment needs. It doesn't provide much information about the credit quality of the company.

Disney's Return on Equity was actually relatively low throughout this period. Only in the range of 5%. High performing companies will produce ROE in the range of 10% to 20%. Using the model described in Lessons I and II, Disney produced this ROE in 2003 as follows:

**2003 Return on Equity (Net Income / Equity)**  
 $\$1,267$  (Net Income) /  $\$23,791$  (year end equity) = 5.33%

It was 5.27% in 2002 and negative in 2001

**2003 Profit Margin (Net Income / Revenue)**  
 $\$1,267$  (Net Income) /  $\$27,061$  (Revenue) = 4.68%

It was 4.9% in 2002 and negative in 2001

**2003 Asset Productivity (Revenue / Assets)**  
 $\$27,061$  (Revenue) /  $\$49,988$  (Assets) = 54.13%

50.6 % in 2002 and 49% in 2001

**2003 Leverage ( Assets / Equity)**  
 $\$49,988$  (Assets) /  $\$23,791$  (Equity) = 210%

51% in 2002 and 49% in 2001

**2003 ROE = Profit Margin X Asset Productivity X Leverage**

**2003 ROE = 4.68% (Profit Margin) X 54.1% (Asset Prod) X**  
**2.101 (Leverage)**  
**= 5.33%**

5.3% in 2002 and negative in 2001

Negative net income in 2001 was an aberration as revenue and operating profit before the special charge were consistent with the subsequent years. The company took a very large “non cash” restructuring charge.

Based on the information from this model, it would appear that If Disney were to improve return on equity in years subsequent to 2003, it probably would focus on profit margins and asset productivity. In 2003, its very large asset base of US\$50 billion produced revenue of US\$27 billion. It apparently is making large investments that are not producing significant revenue. It was also dealing with fairly low profit margins, which might not be logically intuitive in a business where a “blockbuster” movie could produce very big returns.

Disney’s operating cash flow during this period was consistent and positive before any impact of changes in working capital...

**CONSOLIDATED STATEMENTS OF CASH FLOWS**

US\$ million	<b><u>2003</u></b>	<b><u>2002</u></b>	<b><u>2001</u></b>
Net Income	1267	1236	-158
Non-cash adjustments to net income			
Depreciation	1059	1021	987
Amortization of Intangible Assets	18	21	767
Other non-cash items (expense and income)	293	35	1697
	<b><u>2637</u></b>	<b><u>2313</u></b>	<b><u>3293</u></b>

Even in 2001, when net income was negative, operating cash flow was not only positive, but higher than in the two subsequent years. The cause of the 2001 loss was a large restructuring charge which represented an accounting charge, not an immediate cash loss.

EBITDA is an even larger amount, since Disney is a large taxpayer. \$4219 in 2003. But, this is one of the reasons why EBITDA is not a good proxy for cash flow for profitable companies – taxes and interest must be paid!

**EBITDA - Earnings Before Interest, Taxes, Depreciation and Amortization**

<b><u>4219</u></b>	<b><u>3619</u></b>	<b><u>4769</u></b>
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Changes in working capital were a positive contributor to cash flow, but not in any significant amounts....

### **CHANGES IN WORKING CAPITAL**

Accounts Receivable	-194
Inventory	-6
Other current assets	-28
Accounts Payable	275
Other current liabilities	217
Cash from changes in Working Capital	264

### **CASH FROM OPERATIONS AND WORKING CAPITAL 2901**

As described earlier, the primary function of cash flow analysis is to identify the degree to which an enterprise is able to fund its ongoing investments and capital expenditures from operations. Disney has a consistent history of generating sufficient cash from operations to fund most of its investments.....

### **CASH USED FOR INVESTMENTS**

	<b><u>2003</u></b>
Investments in Property and Equipment	-1049
Acquisitions	-130
Divestitures	166
Sale of investments	40
Investments	-14
Other	-47

### **NET CASH INVESTMENTS -1034**

### **CASH FLOW AFTER INVESTMENTS 1867**

In the three year period of 2001 – 2003, Disney produced positive **FREE CASH FLOW** of \$2.010 billion!

What did it do with this Free Cash Flow?

### **FINANCING**

Borrowed Money	1635
Repayment of Borrowed Money	-2059
Dividends	-429
Other	-670
<b>NET CASH FROM FINANCING</b>	<b>-1523</b>

<b>CHANGE IN CASH</b>	<b>344</b>
<b>Cash and Cash Equivalents Beginning of Year</b>	<b>1,239</b>
<b>Cash and Cash Equivalents End of Year</b>	<b>1,583</b>
<b><u>Change in Cash and Cash Equivalents</u></b>	<b><u>344</u></b>

The final section of the Disney 2003 Statement of Cash Flow shows that liquidity increased, with the cash and cash equivalent balance increasing by \$344 million. The company used the remainder of its excess cash to reduce debt by about \$400 million, pay dividends of \$429 million, which seems to be a consistent dividend payout program, and it bought back stock of about \$670 million.

**At the end of fiscal year 2003, Disney had had total outstanding debt of approximately US\$ 13 billion. Does this seem to be reasonable?**

Depending upon the analyst's view of the future performance of Disney, the answer is probably "yes".

A company's ability to maintain a certain level of debt is primarily a function of the nature of the riskiness of its business and industry, and its consequent cash flow volatility. Disney is a very large, well established business, with relatively stable revenue and cash flow, and a history of performance. In the three years through 2003, it produced Free Cash Flow of \$2 billion.

If there is a reasonable judgment that Disney can continue to produce free cash flow in this range, then total debt of about \$13 billion could be amortized in six years. Of course, if the company is doing well, there is no reason to pay off all debt, nor would the company wish to suspend its dividend. The fact that the debt can be repaid or refinanced creates a high degree of confidence in the suppliers of debt.

Refinancing of debt as a "way out" by itself is not an acceptable answer to a company's credit quality. The refinancing will take place only if the providers of credit believe that a company can produce positive free cash flow to amortize the debt if further refinancing becomes unavailable, for whatever reason. This is known as "refinancing" risk.

Does the Disney entertainment business have significant business risk? The answer is clearly yes. But it is the job of professional managers to work through these risks and manage them.

Standard & Poor's described the Disney strategic position and risk in a report published in May, 2008....

*"As a content-oriented company, DIS's top strategic priorities include creativity and innovation, international expansion, and leveraging new technology applications. Under CEO Robert Iger, we see senior management aggressively exploring new avenues to offer its branded content, characters and entertainment franchises across emerging digital platforms such as broadband and wireless, while making further investments in other areas such as video games. Recent initiatives include: a deal to provide content from its ABC networks and the film*

studios on Apple's video iPod, the launch of Disney Mobile cellular phone service, and an ad-supported streaming of ABC's shows.”

*“We have a neutral fundamental outlook on the movies and entertainment sub-industry. We believe continued gradual shifts from traditional distribution windows to newer platforms such as video-on-demand and iPods create potential challenges for entertainment content providers already vulnerable to industry saturation and rampant piracy. We are also wary of potential disruptions after the recent writers' strike. However, we see content providers starting to reinvent business models to capitalize on a nascent digital market, which will likely expand rapidly and generate increasingly meaningful contributions to revenue in the years ahead.”*

Disney is in a very dynamic and challenging industry, and it has been managed relatively well. Subsequent to 2003, Disney's operating performance has improved steadily, due largely to improved profit margins. Revenue growth has been moderate, but net income has grown substantially since 2003, as has Return on Equity, which was 14.9% in 2007. Free Cash Flow has grown to \$6 billion.

#### **Income Statement** (Million \$)

	<u>2007</u>	<u>2006</u>	<u>2005</u>	<u>2004</u>
Revenue	35,510	34,285	31,944	30,752
Operating Income	8,272	6,914	5,446	5,258
Net Income	4,674	3,374	2,569	2,345

#### **Balance Sheet & Other Financial Data** (Million \$)

Cash	3,670	2,411	1,723	2,042
Total Assets	60,928	59,998	53,158	53,902
Common Equity	30,753	31,820	26,210	26,081
Capital Exp	1,566	1,299	1,823	1,427
Cash Flow	6,165	4,810	3,908	3,555
% Net Income of Revenue	13.1	9.8	8.0	7.6
% Return on Equity	14.9	11.6	9.8	9.4

Any extensive credit analysis of Disney would review the risks, operations, and future prospects of its various key businesses. But a quick review of historic cash flow and operations, along with an assessment of the appropriateness of its capital structure, provides a basic assessment of the credit risk of an enterprise. It's easy to make a preliminary determination that Disney's debt level relative to its cash flow is moderate, and that the credit risk of Disney is low.

The next example shows a very different situation – Enron in 2000, just prior to its surprise bankruptcy and liquidation.

## **II. Enron Corporation, 1998 through 2000**

The epic of Enron's extraordinary risk and fall has been well documented in a book and movie of the same title “The Smartest Guys in the Room”. The former Chairman and CEO of Enron were convicted of criminal fraud and sentenced to prison. Enron's bankers have been sued for complicity in the fraud, which was presumably designed to overstate Enron's performance, and

its financial position. In the years just prior to its demise, analysts were almost universal in their praise of the company's performance and its prospects. In retrospect, many of the analysts did not understand how the company made money, nor the degree to which it was taking very high business risks.

A review of Enron's cash flow prior to 2001 indicates that analysts should have been much more skeptical about the company's financial stability and future. Enron consistently did not produce sufficient operating cash flow to fund its investments. Its Free Cash Flow was consistently negative.

During the 1990's, Enron transformed itself from an oil and gas pipeline company into a trading company. Gross revenue skyrocketed from US\$13 billion in 1996 to US\$100 billion in 2000. This is a growth rate that is hard to fathom, let alone manage.

In reality, much of the growth was due to trading activity, and, for credit analysis, it's more appropriate to look at net revenue, after the cost of merchandise that is traded. This is analogous to the reporting of revenue for most financial institutions, which is net of interest expense. Gross revenue is misleading, because, for a bank, it is primarily a function of interest rate levels. The better measure is the "net spread" – revenue after cost of funds. In retrospect, Enron was more like a bank than an energy company.

In a review of the Enron fiasco well after the fact, a senior manager of Moody's, in a private interview with the author, stated that "if we had reviewed Enron in our Financial Institutions group, rather than in our Energy group, we might better have identified the problem".

For Enron, revenue after "cost of traded merchandise" shows a very different situation. Net revenue growth was substantial, but actual net revenue was very small relative to gross revenue, and income was also small relative to gross revenue and the size of the assets employed.

From the standpoint of cash flow, Enron was investing in excess of its operating cash flow in every single year since before 1996. This should have been a warning for every analyst who was judging the risks and credit quality of the company.

	2000	1999	1998	1997
(millions)				
<b>Total Revenue</b>	<b>100.8</b>	<b>40.1</b>	<b>31.3</b>	<b>20.3</b>
Cost of Production	94.5	34.8	26.4	17.3
Net Revenue	6.3	5.4	4.9	3.0
Net Revenue/ Total Rev	6.2%	13.3%	15.6%	14.6%
Operating Expense	4.3	4.5	3.5	2.9
Operating Income	2.0	0.9	1.4	0.1
Net Other Income	0.5	1.2	0.2	0.6

EBIT	2.5	2.1	1.6	0.7
<b>Net Income (after tax and interest)</b>	<b>1.0</b>	<b>0.9</b>	<b>0.7</b>	<b>0.1</b>
<b>Profit Margin (net income / Net Revenue)</b>	<b>15.6%</b>	<b>16.7%</b>	<b>14.4%</b>	<b>3.5%</b>
<b>Asset Productivity (Revenue / Total Assets)</b>	<b>9.6%</b>	<b>16.0%</b>	<b>16.1%</b>	<b>13.1%</b>

Enron's profitability was not very high, as measured by Return on Equity, but its leverage was very high. Return on equity was never more than 10%, and leverage was steadily increasing. At the end of 2000, Assets were 5.7 times equity (equity was less than 20% of total assets). Debt was increasing at a substantial rate, while profitability was stable, and free cash flow was negative. In each year, capital expenditures exceeded the generation of cash from operations.

Over this four year time period, Enron's ROE of about 10%, was produced by the use of high leverage, moderate profit margins, and very low asset productivity. At the end of year 2000, Enron had total assets of about US\$65 billion, and this produced net revenue of only \$6.3 billion. With what seem to be reasonable profit margins, Enron had to use high leverage to generate a mediocre ROE.

	2000	1999	1998	1997
(\$million)				
<b>Total Assets</b>	<b>65,503</b>	<b>33,381</b>	<b>29,350</b>	<b>22,552</b>
<b>Total Liabilities</b>	<b>54.033</b>	<b>23,811</b>	<b>22.302</b>	<b>15,504</b>
<b>Net Worth</b>	<b>11,470</b>	<b>9,570</b>	<b>7,048</b>	<b>7,048</b>
Leverage (Assets / Equity)	571%	348%	416%	320%
<b>Return on Equity (ROE)</b>	<b>8.54%</b>	<b>9.33%</b>	<b>9.97%</b>	<b>1.47%</b>
Cash from Operations	3,000	2,228	1,873	276
Capital Expenditures	3,314	3,085	3,564	2,092

Even before examining the Statement of Cash flow for Enron, the basic situation by 2000 should have raised a certain degree of skepticism about the nature of Enron's capital structure relative to the volatility of its cash flow. The company was growing very rapidly in a business (energy trading) that, by definition, is very risky. It's reported profitability was moderate, at best, and its leverage was increasing dramatically.

A simple cash flow analysis showed a situation that was even more serious. At first glance, Enron seemed to be producing substantial increases in cash flow from operations. The situation changes significantly if the change in working capital is extracted from cash from operations.

Prior to the year 2000, working capital used cash as the company expanded. Working capital was a use of cash, as is usually the situation in a growing company.

In the year 2000, as trading activities expanded exponentially, working capital became a source of cash. While the explanation is not obvious, it is reasonable to question the very large decline in inventory levels, and it is probable that the increase in current liabilities was an indirect form of short term debt.

	<u>2000</u>	<u>1999</u>	<u>1998</u>	<u>1997</u>
Cash from Operations	3,000	2,228	1,873	276
EBITDA	4,513	3,330	2,752	736
Cash from change in Working capital	1,769	(1000)	(233)	(65)
Cash from Operations and Change in Working Capital	4,779	1,228	1,640	211

The extremely large increase in cash from operations and working capital is unusual. It would be prudent for a credit analyst to assume that it was not sustainable. If Enron's business continued as it had been, it would not be unreasonable to assume that it could produce cash from operations in the range of \$1.5 billion to \$2.0 billion on a sustainable basis. But even this assumption is risky, as the nature of Enron's business was becoming increasingly risky and volatile.

Enron's need for cash to fund its investing activities was substantial, and growing every year. In 2000, it's cash flow after investments was positive at \$515 million. In the 3 years prior to that, it was negative each year by close to \$2 billion.

	<u>2000</u>	<u>1999</u>	<u>1998</u>	<u>1997</u>
Net Cash Investments	(4,264)	(3,607)	(3,965)	(2,146)
Cash Flow after Investments	515	(2,279)	(2,325)	(1,935)

In the year 2000, Enron did have positive cash flow after investments, including the change in working capital. If the working capital contribution was actually a form of hidden debt, then it was still continuing a long pattern of investing more than it was producing from operations.

Enron funded its cash flow deficit with a combination of debt and equity.

The company also seemed to maintain an extraordinarily low level of cash compared to the rapidly growing size of its balance sheet. At the end of 2000, it had cash and cash equivalents of \$1.374 billion, compared to total assets of \$65.5 billion.

One of the key factors of success for a trading company is liquidity and market confidence. Enron not only did not maintain much liquidity, it also managed to fund much of its trading activity through special purpose subsidiary companies where the debt did not appear on its balance sheet. In effect, Enron was operating with much greater leverage than was shown on the financial statements.

When the suppliers of short term credit to Enron finally realized that they did not fully understand how the company was generating its revenue, and funding its activities, they suspended credit availability. This led to the rapid demise and bankruptcy of the company. But, as illustrated here, these suppliers of credit should have been very skeptical of a company that was consistently investing more cash than it generated from its operating activities. At the end, the suppliers of credit to Enron were clearly not convinced that these investments would generate sufficient cash in the future to amortize all of Enron's outstanding debt.

***“Companies go bankrupt for three reasons....***

***They run out of cash***

***They fear that they will run out of cash***

***Their suppliers of credit fear that they will run out of cash”***

### **Debt Capacity and Future Free Cash Flow**

The performance benchmark that should be monitored by corporate CEO's and boards of directors, as well as equity and credit analysts, is a simple one – cash generation. Cash generated by the operations of the enterprise is what is returned to investors, both debt and equity. The ability to generate cash from operations, after the need to invest in working capital and capital expenditures, is the ultimate source of providing the desired returns to equity and debt investors. While the sale of assets, or the entire company, might produce the desired return, the sale will take place only if the assets or company have value.

Ultimately, all value rests in the present value of future cash flows.

There are periods of time where investment opportunities (acquisitions and capital expenditures) will exceed the ability of an enterprise to fund them entirely from internally generated cash flow. But eventually, these investments must produce a positive return in order to repay the debt or to produce a positive return on the capital used to make the investments.

The market value of an enterprise is the present value of its future free cash flow. A smart CEO will focus on the underlying factor of the market value of an enterprise – cash flow. He or she will miss fundamental factors if the only focus is on the market value of the company in the form

of the price of the stock. The focus must be on generating Free Cash Flow. By doing so, they will maximize the value of the enterprise - the present value of future free cash flow.

A good CEO or business owner will also understand the risks of using debt in the capital structure, and the fact that there is a limit to the amount of debt that can be employed. This limit is determined by the amount of free cash flow that will be available in the future, with a high degree of confidence, to service debt.

If free cash flow is negative, and financing is required to maintain a certain level of liquidity (cash and cash equivalents), the managers of an enterprise will have to find a source to provide this financing. More often than not, they will approach a lending institution (bank). Over time they may try to raise debt or equity from capital market sources if that option is available to them. The ability to raise external sources of funding, debt or equity, is dependent upon the managers' ability to adequately, and credibly, explain a strategy for the business that will show how it will produce future free cash flow.

How does a bank credit analyst or lending officer respond to a request to fund a free cash flow deficit? What does the credit analyst or lender do when the company asks for a loan?

The equity and credit analyst role is to assess and judge whether or not the company's strategy makes sense. This will be done in the context of the industry model, competitive factors, quality of management, adequacy of the capital structure, and the macro-economic environment.

This brings us back to the fundamental questions of the extension of credit that were covered in previous lessons. What's the purpose and how will it be repaid?

*“Lending is not based primarily on money or property. No sir, the first thing is character”  
– J.P. Morgan*

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. This means that the analyst must understand all of the issues raised by Mr. Morgan – money, property, and character.