# **MGT 8803 ACCOUNTING MODULE**

# **WEEK 2 SCRIPTS OF VIDEOS**

## Video 1 – Cash and Accounts Receivable

Beginning with this session, we're going to be going down the balance sheet and giving more detail about each of the items starting with cash. Cash is anything a bank will accept for deposit. It includes things like checks, money orders, and bank credit card slips, such as Visa, MasterCard, American Express, Discover, as opposed to a company's own credit card slip. When a company sells merchandise where the customer uses something like a MasterCard, the company can take those slips to its bank, and the bank will accept it for a deposit, of course after deducting a charge of maybe 3%, 4%, whatever it is. However, when a company sells merchandise using its own credit card, for example, let's say, Neiman Marcus sells merchandise to a customer that uses a Neiman Marcus credit card. Well, Neiman Marcus cannot take that slip to its bank. Rather, Neiman Marcus has to collect that itself. That would be an account receivable to Neiman Marcus, not cash. But again, a bank credit card slip sale, like a MasterCard, would be considered cash, because a bank will accept it for deposit. Now, most companies include, along with cash, something called cash equivalents. These are investments that the company has made, that come due within three months. These are considered so close enough to being cash, that they're just put together with cash on the balance sheet. As an example of that, let's take a look at the financials of UPS. On page 69, we see the last heading from the bottom is titled Cash and Cash Equivalents. And it reads, "Cash and cash equivalents consist of highly liquid investments, that are readily convertible into cash. We consider securities with maturities of three months or less, when purchased, to be cash equivalents." So that's the standard, three months or less. Why three months as opposed to two months or five months? It's just an arbitrary choice that has been made and most companies just adhere to that.

The next item that typically appears on the balance sheet is accounts receivables. The main issue there is what to do about bad debts. Inevitably, some of the receivables are not going to be collected -- no matter how well the company's efforts are there are going to be some debts that just don't get collected. Well, one option might be to reduce the net sales. However, that is not done. Once the sale is made it's considered to be a legitimate sale and we don't undo it. Rather, we record an expense on the income statement called a bad debt expense. It would have the same effect on net income as reducing the net sales, but this is the way we do it, we record a bad debt expense. Now, suppose that a company sold merchandise on credit in 2019 and then in 2020 it finds out that this customer went bankrupt or maybe ran off to Argentina and is never expected to return again. So if you would recognize the bad debt expense in 2020, when we learned about the bad debt, this would violate the matching principal because the sale was made in 2019 and the matching principal says that we should recognize expenses in the same period as the related revenues are recognized and since the sale was made in 2019 and therefore the revenue was recognized in 2019, the expense should also be recognized in 2019. The way we do this is by using approaches called allowance methods. This is where we estimate losses. And as an example of company talking about this estimation, let's look at the UPS Financial Statements. Turn to page 70, and look at 2nd heading that says Accounts Receivable. The second line in that paragraph reads, “Losses on accounts receivable are recognized when they are incurred, which requires us to make our best estimate of the probable losses inherent in our customer receivables at each balance sheet date. These estimates require consideration of historical loss experience, adjusted for current conditions, trends in customer payment frequency, and judgments about the probable effects of relevant observable data, including present economic conditions and the financial health of specific customers and market sectors”. So, these are the things that UPS considers when it's making estimates for the bad debt expense.

On the balance sheet, we will find the net amount of accounts receivable arrived at by starting with the accounts receivable and deducting something called allowance for bad debts. This allowance for bad debts is referred to as a contra-asset account because it is a deduction from the asset, accounts receivable, to get the net amount of accounts receivable. As an example of how this is shown, let's look at the financial statements for NCR. On page 107 look at the last bold-faced item that says Accounts Receivable. Under that it lists different categories of accounts receivable, namely Trade, Other. And then it gives the gross amount of accounts receivable and after that is says, less allowance for doubtful accounts. So that's the contra-asset account that we were just referring to, and after that we get the total accounts receivable net amount.

There are two approaches to making the estimates for bad debt expense and the allowance amount. The first is referred to as the percentage of credit sales method. With this method we obtain the bad debt expense simply by taking a percentage of credit sales, typically based on the company's past history. The company will look at its previous credit sales, it will look at its collections and it will make a judgment about whether that's expected to continue, if not it will tweak it some and then this is the amount of bad debt expense recorded on the income statement, and it's also the amount that's added to the allowance for bad debts on the balance sheet. Keep in mind that bad debt expense is an account that appears on the income statement, so it does not carry over from one year to the next. The allowance account is a balance sheet account, and as such, it does carry over from one year to the next. The amount at the end of one year becomes the balance at the beginning of the next year. As an example of this first method, suppose that the company had credit sales during the year totaling $500,000. And based on its past history of collections it estimates that two percent of those credit sales will just never be collected. So it would obtain the bad debt expense by taking two percent of $500,000 arriving at the amount of $10,000 recorded as bad debt expense and then adds that to the allowance account on the balance sheet.

Now notice that this method does not consider anything about accounts receivable or what's already in the allowance for bad debt accounts. Since it ignores these, many people believe that there is a better approach that would consider these two things and so we now turn to the next method. And that's referred to as the percentage of receivables method. In this method we first obtain the New Allowance for Bad Debts, in other words an updated allowance for bad debts, by taking a percent or percentages, and I'll talk about that plural possibility a little bit later. Anyway, percentages of the ending balance in accounts receivable. And then we obtain the bad debt expense by taking this new allowance for bad debts and deducting the previous allowance for bad debts. As an example, suppose the previous allowance for bad debts amounted to $1,800 and suppose that the accounts receivable balance totals $100,000. Now, what's shown next is referred to as an aging of accounts receivable, and this is where the series of percentages this was the plural in the statement that I gave earlier. We have four different age categories on the grounds that the older the receivable is, the less likely it is to be collected. The amount of age categories is arbitrary, the cut-off dates are arbitrary as well, and this example is four age categories. In the first category, the accounts are less than 30 days old and we have made an estimate that one percent of those are uncollectible, so we take one percent of 62,000 to arrive at 620, and so on until the last category we have over 120 days old for those we have estimated that 20% will be uncollectible and 20% of 3,000 would be 600 and so we add those four amounts together to get a new allowance for bad debts totaling $3,070. So then next we obtain the bad debt expense by taking this new allowance amount of 3070, subtracting the previous amount on our books, which is 1,800 and that gives us 1,270 for the amount of bad debt expense that will be recorded on the income statement and that will then also be added to the allowance account on the balance sheet. As an example of a company talking about this aging of receivables approach, let’s look at NCR. Turn to page 61 to the third bold-faced heading titled Allowance for Doubtful Accounts. It says, "NCR establishes provisions for doubtful accounts using percentages of accounts receivable balances to reflect historical average credit losses and specific provisions for known issues." So because they make reference to using percentages of accounts receivable balances they are using this aging of receivables approach.

## Video 2 – Notes Receivable

We will now discuss Notes Receivable. These are formal contracts that are signed when a customer buys merchandise or services on credit and they are typically for big ticket items. These contracts will specify due dates for the payments, they'll specify interest that must be paid, the interest rates and these are classified as current or long term depending on the due date. If they are due within a year they are current assets, if they are due beyond one year they are long-term assets. Now for some terminology for Notes Receivable. The Principal amount is the face amount of the note, in other words the amount that was borrowed by the borrower. The Interest Rate is the percentage of the principal that the maker is charged to be able to borrow the money. The Maturity Value refers to the Principal plus the interest, and we obtain the amount of interest by computing the product of three things. It's the Principal, times the interest rate, times the fraction of time that corresponds to the interest rate. Usually the interest rate is an annual rate, and so the fraction of time is the fraction of a year. As an example, suppose on January first, a company sold equipment and received a 90-day, $5,000 note receivable, and the annual interest rate is 14%. So we would calculate the interest by taking the principal of $5,000 multiplied by the 14% annual interest rate and then multiply that by 90 over 365, the fraction of one year. That would give us $172.60 as the amount of interest.

Companies sometimes don't wish to wait until the due date to be able to collect a receivable. They may need the cash earlier, or they may feel that they don't want to bother with collecting the receivables themselves, so they will perhaps sell the receivables. When the receivables are accounts receivable this selling is usually referred to as factoring accounts receivable. With notes receivable, the terminology is often a little bit different, it's often called discounting notes receivable. At any rate, we may have contingent liabilities that arise from the discounting or factoring, when it's done with recourse. To illustrate what recourse means, let's look at the following example. Suppose Company A sells equipment to Company B and rather than receiving cash they receive a note receivable. But Company A does not wish to wait until the due date to collect the note receivable, so they take it to their bank and they discount this note at the bank with recourse. Co. B would be notified that they have to pay the bank. If B defaults, the term with recourse means that the bank can go after Company A to collect the money. And so, therefore, when Company A discounted the note, it has a potential liability that we call a contingent liability, and so the question is, does this need to be reported on the balance sheet in the liability section. And the answer is no, it's not an actual liability, it's just a potential liability that will not likely arise because it's not likely that B will default. At any rate, all that needs to be done is that this contingent liability should be disclosed in the notes to the financial statements. This concludes our discussion of receivables. In our next session, we'll begin a discussion of accounting for inventory.

## Video 3 – Inventory & Costs of Goods Sold

Today's lesson will cover inventory and cost of goods sold. Inventory refers to merchandise that is either manufactured or purchased for resale. There are two issues related to inventories dealing with ownership. The first is goods in transit. Suppose you have a company based in Atlanta that sells merchandise to a company that's in Miami. And suppose it leaves Atlanta on December 27th and does not arrive in Miami until January 3rd. So on December 31st, the balance sheet date, it's in transit. And the question is, should it be included on the balance sheet of the selling company in Atlanta or the buying company in Miami? And the answer is, whoever is responsible to pay for the shipping records the inventory on its balance sheet. So if the Atlanta company pays for the shipping, the Atlanta company would include it in its balance sheet. Whereas if the Miami company paid for the shipping, it would be the Miami company including it in its balance sheet. And that also has implications for when the sale and the purchase would be recorded. If the Atlanta company paid for the transportation, then they own it until January 3rd and the sale would not be recorded by them until January 3rd. And the purchase would not be recorded by the Miami company until January 3rd. However, if the Miami company paid for the shipping, then they take ownership at December 27th and therefore the sale and the purchase would be recorded on December 27th.

The second ownership issue relates to goods on consignment. Sometimes rather than selling merchandise to another company, a company will give those goods on consignment telling them that if they don't sell the merchandise, they can return it to them or if they do sell the merchandise, they can keep a certain percentage, perhaps 10% and just return 90% to the seller. So suppose that Neiman Marcus receives merchandise from a vendor on consignment. So the question is, does Neiman Marcus report that inventory on its balance sheet or will it be the vendor? It will actually be the vendor, not Neiman Marcus, because title does not transfer for these goods on consignment. The title remains with the vendor. And while possession might be 9/10 of the law, for accounting purposes we need the full 100% in order to put the inventory on the balance sheet.

Inventory is also used to determine the amount of cost of goods sold that appears on the income statement. To get cost of goods sold, we take the beginning inventory cost, and add to that net purchases which we'll talk about in a minute. That'll give us the amount of goods available for sale. And then we deduct the cost of the goods that were not sold, namely the ending inventory, to arrive at the cost of goods sold. So to get net purchases, we take the cost of purchases and if the company pays for the transportation, we add that amount that we call freight-in. And if there're any purchase returns made, those are deducted as well as allowances. Allowances would be that instead of a return, the seller might say we'll just knock off 20% because of the defects that there were and so this 20% that's knocked off is deducted as an allowance. We also deduct for any purchase discounts. That is, discounts made for early payment when those terms are available. They would not have been reflected in the original purchase amount. So now when the payment is made early and they receive the discount, we deduct the purchase discounts. And this gives us the amount of net purchases.

Cost of goods sold, as we've seen when we talked about the income statement, is deducted from sales to arrive at the first of several preliminary profit figures that we call gross margin. One of two approaches are used to report the gross margin. One is called the gross method. The other is called the net method. As an example, suppose that an item having a cost of $150 is sold for a price of $250. Suppose it's priceline.com that's buying airline tickets from an airline for $150 and it sells it to its customer for $250. In the gross method, we would report $250 as sales revenue, $150 as cost of goods sold and the gross margin of $100. Whereas in the net method, we would just report this net amount of $100 as a sales revenue with no cost of goods sold, while arriving at the same gross margin of $100 as the gross method. So you might think, what's the big deal? Why do we care? We're getting the same gross margin. Well, many companies do care. Because the gross method will show higher sales revenue and many financial statement users like to focus on sales revenue and sales growth, so many companies have incentives to try to maximize sales revenue. However, in order to use the gross method, the company really has to assume ownership risks. So if a company just acts as a broker to enact a transaction between a buyer and the seller, they must use the net method. Let’s look at the UPS financials on page 83, middle of the third line from the top. It states, “Based on our evaluation of the control model, we determined that all of our major businesses act as the principal rather than as the agent within their revenue arrangements. This required a change in reporting for certain of our Supply Chain & Freight businesses where previously revenue was reported net of associated purchased transportation costs. Revenue and the associated purchased transportation costs are now both reported on a gross basis within our statements of consolidated income.”

There are a couple of approaches for keeping track of inventories. One is called the perpetual inventory system where the records are updated whenever a purchase or sale is made and because it involves a lot of record keeping, it's most often used when each item has a relatively high value. In other words, when it's really worth all that time and effort. The other system, called the periodic inventory system, does not update records every time there's a purchase or a sale. It's used when inventory is composed of a large number of diverse items, each with a relatively low value because it's just not worth the bother to update inventory and cost of goods sold for every transaction. And so under the periodic system approach, what's done is once a year, the company's personnel will go out to where the inventory is and they'll have to take a count. It's referred to as a physical inventory count. And that will establish the amount of inventory and cost of goods sold to put in the financial statements. Now even companies that have perpetual inventory systems will also take the physical count once a year just to be able to compare that count to what's on their records. And that will enable them to determine what amount of inventory loss, often called a shrinkage, occurs. With the periodic system, you're not able to determine the amount of inventory shrinkage. Let's now look at the Home Depot financial statements. Turn to page 36 and look at the last paragraph. It reads, "Independent physical inventory counts or cycle counts are taken on a regular basis in each store and distribution center to ensure that amounts reflected in merchandise inventories are properly stated.” So by talking about comparing that to what's on their records, they must be using a perpetual system. Continuing on it says, "Shrink, or in the case of excess inventory, swell, is the difference between the recorded amount of inventory and the physical inventory”. This session is now concluded. In our next session, we'll discuss some further issues related to inventories.

## Video 4 – Inventory Costs Flows

Last time we talked about several issues related to inventory and cost of goods sold, and today, we'll continue our discussion of inventory, talking about inventory cost flows. Suppose you're a company like Kroger who sells, among other things, boxes of Cheerios. Now, suppose you bought a batch of boxes of Cheerios two weeks ago at a price of, say, $2.50 a box. And then, last week, you bought another batch of Cheerios boxes and paid a slightly higher price, $2.75. Now, today you sell a box of Cheerios, and the question is, is the cost of that box the $2.50 that you paid two weeks ago, or is it the $2.75 that you paid one week ago? There's no way of knowing. And, indeed, with most products, there's no way of being able to identify which batch it came from. In those instances where it can be done, then we are able to determine the cost exactly, and we call that specific identification. An example of specific identification would apply to a car dealership. A car dealership will know exactly the cost of every single car that it has on its lot. Where we cannot specifically identify the cost, we have other approaches that are typically used. One approach is called first-in, first-out, or FIFO for short, and that's where we presume that the cost of the merchandise sold is coming from the earliest batches purchased. On the other hand, another approach is called LIFO, last-in, first-out, and that presumes that what's being sold first is the latest purchases that were made. And then the last method is called the weighted average approach, and that involves an average cost of all the purchases made, weighted by the number of units.

As an example for all three approaches, suppose Kernel King buys and sells corn, and they had following transactions occurring in June. First, on June 1st, it purchased 10 tons at $6 a ton, then on June 8th, it purchased another 10 tons, paid a higher price, $9 per ton. And then, June 27th, they sold half of these at $11 a ton. So we want to know how much profit did Kernel King make during June? So, let's look at case one. That presumes they sold the old corn. That would be the FIFO method. So the sales amount, the sales revenue, would be $11 times 10 tons. The cost of goods sold determination presumes that the 10 tons came from the earliest purchase, the June 5th purchase, at $6 a ton. So we had a cost of goods sold of $60, giving us a gross margin of $50. Case two presumes we sold the new corn. That is the LIFO approach. Okay, sales, again, is $110, but now the cost of goods sold uses the $9 a ton from the most recent purchase of June 18th. And so that gives us a different gross margin than we had for case one, $20 instead of $50. Case three says that we're selling mixed corn from both batches. So that's a weighted average approach. Again, the sales revenue is still $110, but now for the cost of goods sold, we're going to use the average of the $6 and $9, that being $7.50, so $7.50 times 10 tons gives us the $75. Now we get a gross margin of $35, which is different from the first two gross margins.

We see that the kind of system that we're using for the inventory cost flow will give us different amounts of cost of goods sold typically, and therefore different amounts for gross margins. So you might wonder, which system is best? And the answer is, it depends on which financial statement is considered the most important. If you consider the income statement the most important, then LIFO is the way to go. On the income statement, you find cost of goods sold. If want the want the most up-to-date number in cost of goods sold, you want LIFO, because LIFO puts the most recent costs into cost of goods sold, because it assumes you're selling the most recent purchases first. So with LIFO, you have the most up-to-date cost of goods sold, and therefore LIFO is considered to give you a better measure of income than FIFO. Now what if you're main focus is the balance sheet? If so, you would want to use FIFO. FIFO gives a better measure, because on the balance sheet, what you see is the ending inventory. And if you want the most up-to-date cost for your ending inventory, you go with FIFO, because FIFO presumes you're selling the earliest merchandise first, and therefore what you have left in the ending inventory is the most recent purchases, the most up-to-date cost. And so, therefore, FIFO is a better measure for the balance sheet. Many companies will use LIFO for some inventories and FIFO for other inventories.

This is something called the LIFO conformity rule. To understand what that's about, let's talk about a situation where prices are increasing over time, which is the usual case. Normally, prices do increase over time. If you think about a company wanting to report high amounts of profits on its financial statements, which is what they typically like to do, they will want cost of goods sold that's low. And so the system that gives you low cost of goods sold when prices are rising will be FIFO. So companies would like to use FIFO for financial reporting because it shows higher profits than LIFO would. And weighted average would fall somewhere in between. Now, let's talk about tax accounting, even though we said at the outset of this course that we're not going to deal with tax accounting, but here we have to talk about it a little bit. So, for tax accounting, you don't want high profits, in fact you want low profits because you want to pay a low amount of taxes, and taxes are based on the profits. So, to get a low amount of profits, you want a high amount of cost of goods sold on the income statement. And so, when prices are rising, the method that gives you the highest amount of cost of goods sold would be LIFO, because LIFO puts the most recent purchases, which have the higher cost, into cost of goods sold. So, for tax purposes, a company wants to use LIFO, but for financial reporting purposes, it would want to use FIFO. Now, ordinarily, companies can use one method for tax reporting, and another method for financial reporting. However, inventory is an exception. The government has ruled essentially that a company cannot have its cake and eat it too with inventories. They have come up with this LIFO conformity rule which says that if a company wants to use LIFO tax purposes, it must also use LIFO for GAAP financial reporting. Now that's not to say they always use the same method for each. A company could use FIFO for tax reporting and LIFO for financial reporting. But if they want to use LIFO for tax purposes, they must also use LIFO for financial reporting.

The last topic in inventories is a major exception to the cost principle. Recall that the cost principle said that assets on the balance sheet need to be reported at their historical cost. For inventories though, we have a rule called lower of cost or net realizable value. Inventories will be reported at the lower of the cost amount or the net realizable value, which is essentially a market value less any selling or disposal costs. The justification for this rule is referred to as the principle of conservatism. By conservatism, we're not talking about how anybody dresses or how they vote politically -- what we're talking about is the inclination that companies have to report high profits and high assets. They like to inflate profits and assets. They typically don't understate them. And so because of this concern about overstating assets and profits, we will have inventory being lowered if the amount goes below the cost, but we will never report it above the cost. So, under this lower of cost or NRV rule, inventory is reported at less than cost when either the future of value of the inventory is in doubt, because of reasons like damage, usage, or obsolescence, or if it could be replaced at a new price that's less than the original cost. Let's now look at the NCR financial statements. Turn to the page 61 and about a third of the way down, you'll see a bold-faced heading that says Inventories. It reads "Inventories are stated at the lower of cost or net realizable value using the average cost method." In other words, the weighted average method. Skip down to the third line. It then says "The company regularly reviews inventory quantities on-hand, future purchase commitments with suppliers, and the estimated utility of inventory. If the review indicates a reduction in utility below carrying value," -- carrying value is simply just the amount currently appearing on the balance sheet for inventory -- so then, "Inventory is reduced to a new cost basis. Excess and obsolete write-offs are established based on forecasted usage, orders, technological obsolescence, and inventory aging." So if any of these things happen, then the company writes down the inventory and they record either a loss on the income statement or they increase cost of goods sold. Either way, that reduces the amount of net income reported on income statement. This concludes our discussion of inventory. In our next lesson, we'll talk about investments and prepaid expenses.

## Video 5 – Prepaid Expenses & Investments

In this lesson, we conclude the current asset section of the balance sheet by discussing prepaid expenses and investments. First prepaid expenses. They include things like prepaid rent and prepaid insurance, where you're paying something in advance and getting the benefits later on. Because of the matching principle, we do not record these as expenses when the payment is made, but rather we spread the expenses over the periods that we're benefiting from these expenditures. For example, if we've paid rent in advance for two years, we would not record the rent as an expense all immediately. We'd record some of it the first year, and some of it for the second year.

Now let's talk about investments. Marketable securities are short-term investments in stocks or bonds. We'll talk about long-term investments in a minute. For marketable securities, there is a major exception to the cost principle, which is the principle that states assets should be reported on the balance sheet at cost. We've already talked about one exception, for inventories, referred to as a lower of cost or NRV rule. For marketable securities, we even have a more major exception. It's called mark to market. This means that investment in stocks will be reported at their market values. Bonds, on the other hand, are reported at cost if the intention is to hold them to maturity. If not, then they are marked to market like stocks. You may recall that objectivity was the main reason for the cost principle. But because the prices of these investments can be found in periodicals and on the internet, they're considered to be objective enough to where those numbers can replace the cost on the balance sheet. That's referred to as mark to market. Not only can we lower the amounts below cost, but if the market amounts are above cost, we will increase the amounts above cost. As an example, let's look at the financial statements of UPS. First, turn to page 70. The first sentence on the page reads, "Marketable securities are either classified as trading or available for sale securities and are carried at fair value." In other words, they are recorded at their market value. Now we'll turn to page 84 to see what it further has. At the top of that page, you see a table that describes the current marketable securities. In the left-hand column it has the cost, totaling $813 million. In the right-hand column, it has the estimated fair value, which totals an amount that's less, $810 million, an amount less by $3 million. It is this lesser amount, this $810 million estimated fair value that is reported on the UPS balance sheet for its marketable securities.

Turning to long-term investments, the accounting depends on the percentage of ownership. If a company owns more than 50% of another company's stock, it must consolidate the financial statements. What that means is, it combines the financial statements of both companies as if they were one company. Indeed, all the financial statements that we've been making reference to so far -- Home Depot, UPS, and NCR -- these have all been consolidated financial statements. Let's look at Home Depot right now. Turn to page 36. In the second paragraph, the first sentence reads, "The consolidated financial statements include our accounts and those of our wholly owned subsidiaries.” In other words, the companies that it has 100% ownership of. "All significant intercompany transactions have been eliminated in consolidation."

When a company owns between 20% and 50% of another company's stock, it must use what's referred to as the equity method of accounting. Suppose we have a company like Sears, and suppose it owns 40% of another company. Therefore they have 40% of the votes of any matters that come to the Board of Directors, including the payment of dividends. Now suppose Sears is having a bad year, profit-wise. So they want to make that up by receiving a lot of dividend revenue. Because they own 40% of the other company’s stock, they will have a significant influence in any vote to pay dividends to them. On the other hand, suppose Sears is having a real good year and they don't need as much dividend revenue from this other company. They will want to save that for later on. Their 40% vote might be to pay no dividends this year. The point is that they exercise a lot of influence in decisions such as the payment of dividends. Because of this potential manipulation of their net income, the FASB has ruled that when a company exercises significant influence over another company, and that's determined to be between 20% and 50% of stock ownership, they must use what's called the equity method, in which they do not recognize dividends when they receive them, but rather they will recognize dividend revenue as it's being earned by the company they've invested in. So my example of Sears owning 40% of another company's stock, if the other company had profits of $100,000, then Sears would have to report 40% of that, in other words $40,000 as income from the investment, even if they received no dividends at all from that company. As an example of reference made to the equity method, let's turn to the financials of NCR. In the middle of page 56, there is a boldface heading, Basis of Consolidation. Let's start from the second sentence, which reads, "Long term investments in affiliated companies in which NCR owns between 20% and 50%, and therefore exercises significant influence, but which it does not control," meaning it does not own more than 50%, "are accounted for using the equity method."

If a company owns less than 20% of another company's stock, then the accounting is the same as for short-term investments, in other words, the mark to market rule. This concludes our discussion of prepaid expenses and investments. Next time we'll talk about property, plant, and equipment.

## Video 6 – Property, Plant, and Equipment

In today's session, we'll talk about property, plant and equipment. There are two types of property, plant and equipment -- one type being fixed assets, also referred to as tangible assets, and the other category is the intangible assets, such as patents, copyrights, trademarks, which have no physical substance, but are resources. Anyway, back to the fixed assets. There are several types within that category. We have land, in which there's no depreciation. We have buildings, equipment, and land improvements, which do have depreciation. By the way, land improvements include things like paved parking lots, fences, and lighting. And then we have natural resources -- things like timber fields, oil wells, mines -- where we actually extract the assets out of the ground. And we have depletion for that. For the intangible assets, we have something called amortization. Now these things -- amortization, depletion, depreciation -- they all really mean the same thing and we'll talk about them in a minute, but first, let's look at the financials of UPS to see some examples within their property, plant and equipment assets. Look at the UPS financial statements on page 88. At the top, you'll see a listing of their property, plant and equipment, and so they list things like vehicles, aircraft, land, buildings and so on. Depreciation, depletion, and amortization all refer to the same thing. They refer to the process of cost allocation that assigns the cost of the asset to the periods benefited. This relates to the Matching Principle, which says that when we make an expenditure for these assets, we do not record them as expenses right away, but rather, we spread the expenses over the periods in which we are benefiting from them. And so for certain tangible assets, we call this depreciation. For natural resources, we call it depletion. For intangible assets, we call it amortization. For land, we don't do any of that. Land is never expensed. Land doesn't get used up, it doesn't deteriorate like these other assets do.

Before we cover depreciation, we need to address the cost of assets. To get the cost of purchased assets, you need to include all the costs that were incurred to get the asset ready for initial use. So if the company incurred a freight cost to get the assets to them, that needs to be included. Any installation costs need to be included. If they incur costs in testing equipment before it's initially used, that must also be included. Now suppose a company is constructing the asset, rather than purchasing it. The cost of these self-constructed assets needs to include all expenditures that are incurred to build the asset and make it ready for its intended use. This would include materials that are used to build the asset, construction labor, some share of general company overhead, and something called capitalized interest. Now, this refers to interest that's paid during the construction period. Ordinarily, when interest is incurred, it's recorded as an expense on the income statement right away. However, during a construction period, interest that is incurred is treated as an asset. It becomes part of the cost of the equipment, building, or whatever is being constructed, and then later on, when depreciation expense is taken, that's when it turns into an expense. This interest that becomes an asset is referred to as capitalized interest. Capitalization means treating something as an asset, rather than an expense. To see an example of reference being made to capitalized interest, let's look at the financial statements of UPS. Turn to page 70. The next to last paragraph reads, “Interest incurred during the construction period of certain property, plant and equipment is capitalized, until the underlying assets are placed in service.”

What if a company spends money on an asset after it has owned it for, let's say, a couple of years? This is an expenditure on an existing asset. The way it's treated depends on whether we consider it an ordinary expenditure, or a capital expenditure. An ordinary expenditure typically benefits only the period in which they're made. Things like repairs, maintenance, and minor improvements are considered to be benefiting only the period in which the expenditure is made, and therefore, they will be expensed immediately on that year's income statement. The other type of expenditure is called a capitalized expenditure, and those are ones which benefit the company over several periods, not just the current one. And, because of the Matching Principle, which says that we need to recognize the expenses in the periods that were benefiting from those expenses, we do not expense them immediately, but rather, we capitalize them on the balance sheet, meaning we treat them as assets, and then, those assets will be depreciated over the periods in which we are benefiting from those assets. Now, companies typically like to capitalize rather than expense. They like to postpone expenses. They want profits to look as high as possible early on. And so, because there's a tendency to want to capitalize, the regulators have imposed some rather strict criteria that are needed in order to capitalize. The criteria are that either the expenditure has to increase the productive life of the asset or, it has to increase the capacity of the asset. An example of increasing capacity might be if you actually add a wing to a building. Now, if you're just fixing something, if you're just restoring something to its original condition, it is not considered to be adding capacity, so that would not qualify as a capital expenditure. Let's look at the financial statements of UPS again. Turn to page 70. The last sentence of the third to last paragraph reads, "For substantially all of our aircraft, the cost of major airframe and engine overhauls, as well as routine maintenance and repairs, are charged to expense as incurred." So, these are ordinary expenditures that are expensed immediately. These are not capital expenditures. This concludes today's session on Property, Plant and Equipment. Next time, we're going to be talking about depreciation. We're going to look at the various methods of depreciating property, plant and equipment.

## Video 7 - Depreciation

Today, we will continue our discussion of property, plant, and equipment, by focusing on depreciation. We'll be talking about several methods of determining depreciation, and for each of these methods, there are two estimates that are required by management. One is the estimate of the useful lives of the assets. And by that, we really mean the intended lives. So, for example, if a building could be used by the company for 50 years, but they only intend on using it for 10 years, then one must use the 10-year intended life to determine depreciation. In addition, management has to estimate the salvage value of the asset, which is the amount that they believe that they will receive when they sell the asset at the end of its intended life. The salvage value is also sometimes referred to as residual value, or scrap value. To see an example of the discussion of useful life estimates, let's turn to the financials of UPS. On page 70, look at the third paragraph from the bottom. It reads: “Depreciation and amortization”, which is a term that we'll talk about later, “are provided by the straight-line method”, which is one of the methods that we'll talk about, “over the estimated useful lives of the assets, which are as follows: vehicles, six to 15 years, aircraft, 12 to 30 years, buildings, 20 to 40 years, leasehold improvements, lesser of asset useful life or lease term, plant equipment, 3 to 20 years, and technology equipment, three to five years”.

Now let us discuss the four most common methods of depreciation. The first is called straight-line depreciation, and this is the one that the vast majority of publicly-traded companies use. In this method, the cost of the asset is allocated equally over the periods of an asset's estimated useful life. We arrive at the annual amount by taking the cost, subtracting the salvage value, and dividing that difference by the estimated useful life. A second method is called the units of output method. In that method, the more output that's produced, the more depreciation is recorded. We're not going to get into the details of how that's done, though. The next two methods are referred to as accelerated depreciation methods. One of these is called sum of the years digits, and the other is called double declining balance. And, again, we're not going get into the mechanics of how they're done. Let's just discuss the concept of accelerated depreciation, which means that we record more depreciation expense in the early years of the asset and, therefore, less depreciation expense in the later years. And the reason I say therefore is because, regardless of what method that we're using, the total amount of depreciation over the life of the asset will be the same for all methods. They differ in the distribution of the amount of expense across periods. The straight-line method has an equal amount each year, whereas accelerated methods have more in the early years and so, therefore, less in the later years. There are several justifications that are often given for accelerated depreciation, that is why we can justify more depreciation expense in the early years and less in the later years. The main reasoning is that many assets become obsolete or lose productivity more so in the early years than in the later years. And so, therefore, let's record more depreciation expense in the early years and less in the later years. Another reason sometimes given for accelerated depreciation relates to the matching principle, which says that we want to match expenses in the same periods as the related revenues are recognized. Assets are often more productive in the early years, thereby generating more revenues in the early years. So the idea here is to also recognize more depreciation expense in the early years. And, finally, a third reason that's sometimes given for justifying accelerated depreciation is that, in the later years, the company will likely have more repairs and maintenance expense for the assets than in the early years, and so, therefore, to sort of even things out, we have more depreciation expense in the early years.

Now let's talk about the balance sheet presentation for depreciation. First, we have the asset account, such as equipment. And then, there's a deduction for accumulated depreciation, which is the running total of depreciation since the asset was acquired. This accumulated depreciation account is a contra asset account. It's actually the second type of contra asset account that we've encountered. You may recall that, when we talked about accounts receivable, we discussed an account called allowance for bad debts, which is also a contra asset account. These contra asset accounts are deductions from the asset accounts to arrive at the net asset account, in this case, net equipment, which is often referred to as the book value of the equipment. To see the presentation for Home Depot, please turn to page 45 of the Home Depot financials. The third item from the bottom of the top section has Property and Equipment, at Cost. Right below that it has Less Accumulated Depreciation and Capital Lease Amortization. And then, after that, it arrives at Net Property and Equipment.

Let's now talk about disposal of assets, which includes selling assets, trading in an asset for another asset, or casualty losses from things like fires or floods that destroy an asset, or maybe just throwing away an asset. That's referred to an asset retirement. When assets are disposed of, we often have a gain or a loss on the disposal of the asset. The gain or loss is determined by comparing the proceeds to the book value. The proceeds just refers to whatever is received for the asset, generally cash. If the proceeds are more than the book value, then we record a gain. Whereas, if the proceeds are less than the book value, we record a loss. These gains and losses appear in the income statement. Gains are like revenues, which increase net income. Losses are like expenses, which reduce net income.

Now let's talk about how we account for natural resources like oil wells, timber fields, copper mines, where the asset is actually extracted out of the ground. For these, we have something similar to depreciation expense. It's just given a different name. It's called depletion expense. The way depletion expense is determined is actually very similar to the units of output method of depreciation that we discussed earlier, where we said that, in that method, the more output we have, the more depreciation expense we record. Same thing here. The more output we have, the more extraction of timber, or petroleum, or copper, the more depletion expense that we will record. This wraps up our discussion of depreciation and depletion. Next time, we will continue by discussing intangible assets.

## Video 8 – Intangible Assets

Today we're going to discuss intangible assets. These are assets that have no physical substance, but they are resources. Things like copyrights, patents, trademarks. The way we account for intangible assets depends on whether they have a definite life or an indefinite life. For those that have a definite life, they are amortized, which is really the same concept as depreciation, but for some reason for intangible assets, it's referred to as amortization instead of depreciation. We amortize those intangible assets having a definite life over the minimum of the economic life and the legal life. Some assets have legal lives. A patent has a legal life of 20 years. A copyright has a legal life of 50 years beyond the author's demise. The economic life, in other words, the perceived benefit, may be less than that. For instance, if you have a patent where management believes they're only going to receive benefits for five years even though it's got a legal life of 20 years, they must amortize over the five years. Let's look at the NCR financials. Turn to page 72. The very top of the page reads, “NCR's purchased intangible assets were specifically identified when acquired and are deemed to have finite lives.” And then right below, you see a table that lists these intangible assets. Things like reseller and customer relationships, intellectual property, customer contracts, and trade names. Also, to the right of that they've got a column that gives you the amortization periods, the years that they used to amortize these assets. Now turn to the UPS financials on page 71. The paragraph right before the italicized heading, “Self-Insurance Accruals” reads, “Finite-lived intangible assets, including trademarks, licenses, patents, customer lists, non-compete agreements, and franchise rights are amortized on a straight-line basis over the estimated useful lives of the assets, which range from 2 to 22 years.”

For intangible assets that have an indefinite life, we do not amortize them. Instead, they're tested for something called impairment on an annual basis. Basically that involves comparing the book value of the asset to some estimate of future cash flows, and if this estimate of future cash flows is deemed by management to be less than the book value, then the asset is said to be impaired. The result is that the asset that has to be written down, and a loss is shown on the income statement, thereby reducing that income. Turn again to page 71 of the UPS financials. The beginning of the fourth paragraph reads, “A trade name with a carrying value of $200 million and licenses with a carrying value of $5 million as of December 31, 2018 are considered to be indefinite-lived intangible assets, and therefore are not amortized. Indefinite-lived intangible assets are reviewed for impairment at least annually.” Now, turn to the Home Depot financials. On page 38, you'll see the first boldface heading, “Other Intangible Assets”. The second sentence in that paragraph reads, “Intangible assets with indefinite lives are tested in the third quarter of each fiscal year for impairment, or more often if indicators warrant.” Then, the first sentence in the following paragraph reads, “In January 2019, we recognized a pretax impairment loss of $247 million for certain trade names as a result of a shift in strategy for our MRO business.” So in summary, the indefinite-lived intangible assets are tested for impairment, whereas the finite-lived intangible assets are routinely amortized.

Now we need to talk about one specific intangible asset in a little more detail, and that intangible asset is referred to as goodwill. Goodwill arises when only when a company purchases an entire business unit. Not simply when it purchases a piece of equipment or a piece of land or any specific asset, but rather when it purchases an entire business unit such as an entire company or an entire division of a company. Goodwill arises when the purchase price is greater than the fair market value of the net assets. By net assets we mean the assets minus the liabilities because after all, when you're buying a business you're buying both its assets and its liabilities. So goodwill arises when the purchase price of the business is greater than the fair market value of these net assets and goodwill is the difference between these two amounts. Goodwill is considered an indefinite-lived intangible asset and therefore is tested annually for impairment. Let’s look at some examples of companies referring to goodwill. On page 71 of the UPS financial statements, the first sentence on the page reads, “Costs of purchased businesses in excess of net identifiable assets acquired, in other words goodwill, and indefinite-lived intangible assets are tested for impairment at least annually, unless changes in circumstances indicate an impairment may have occurred sooner.” Now turn to the NCR financials, page 71. Right after the tables, the paragraph states, “Late in the quarter ended June 30, 2018, we determined there was an indication that the carrying value of the net assets assigned to the Hardware reporting unit may not be recoverable.” Now go down to the next to last paragraph on the page. It reads, “As a result, in the three months ended June 30, 2018, the Company recorded impairment charges of $21 million related to property, plant, and equipment held and used in NCR’s hardware reporting unit, $16 related to purchased intangibles and $146 million for goodwill assigned to the Hardware reporting unit.”

## Video 9 – Research & Development

In this session, we discuss how to handle research and development. You might think that the matching principle would dictate that research and development costs should be capitalized because after all, research and development generally does not only benefit the current period but benefits future periods as well, and the matching principle tells us that if we do have benefits in future periods, we should spread the expenses over those future periods as well as the current period. But the rule is that R&D is not capitalized. Instead, it's expensed immediately. The reason is because the FASB believes that there is so much uncertainty as to whether or not R&D will provide any benefits at all, so therefore it must be expensed. I just want to mention that the international financial reporting standards distinguish between research and development. For the research costs, those must be expensed. The development costs however are capitalized. But again, with US GAAP, both research and development costs are expensed immediately when incurred. Look at page 58 of the NCR financials. The second boldfaced heading says, Research and Development Costs, and right afterwards, it reads, “Research and development costs primarily include payroll and benefit-related costs, contractor fees, facilities costs, infrastructure costs, and administrative expenses directly related to research and development support and are expensed as incurred, except certain software development costs that are capitalized after technological feasibility of the software is established”.

This is a good segue into our next topic which deals with an exception to this rule about R&D dealing with software development. Software development costs are a special form of R&D that may be capitalized because it's considered that the economic viability can be determined more accurately and earlier than other forms of R&D. So capitalization will begin when this notion of technological feasibility is reached. Software costs that are incurred prior to that point are expensed just like any other R&D would be. So what do we mean by technological feasibility? We mean that sufficient development progress has been made to ascertain that the software will meet its design specifications. In other words, it's when management believes that the software will work. The capitalization ends and then amortization begins when the product is available for general release. So to summarize, before the point of technological feasibility, the R&D for the software is expensed. Between the point of technological feasibility to the general release of the software, any of the costs incurred are capitalized, and then after general release, these capitalized costs are then amortized to expense. Now let's turn to NCR's financials again. On page 62, go to the second paragraph after the boldfaced heading that says, Capitalized Software. The paragraph begins: “Costs incurred for the development of software that will be sold, leased, or otherwise marketed are capitalized when technological feasibility has been established. These costs are included within other assets and are amortized on a sum-of-the-years' digits or straight-line basis.” These were two of the methods of depreciation that we discussed in a previous lesson. “Over the estimated useful lives ranging from three to five years, using the method most closely approximates the sales pattern of the software. Amortization begins when the product is available for general release. Costs capitalized include direct labor and related overhead costs. Costs incurred prior to technological feasibility or after general release are expensed as incurred”. So what they're saying there is entirely consistent with what we had mentioned earlier about how the software development costs are handled. This now concludes our discussion of the assets section of the balance sheet and in our next session, we'll start on the liability section of the balance sheet.

## Video 10 – Liabilities

In this lesson, we begin discussing the liabilities section of the balance sheet. First, we're going to talk about current liabilities, and then, non-current liabilities. Current liabilities are those that are due within one year. Examples include accounts payable, wages payable, income taxes payable. Many of these accounts have the word “payable” in it, but not all. Some have the word “accrued”, such as accrued interest. The terms payable and accrued are interchangeable. Some liability accounts use the word unearned or deferred. An example would be unearned revenues. These represent monies that the company receives in advance of sending their goods out, or performing their services. Suppose a company receives cash from customers who buy gift cards, let's say for meals at their restaurants. So that is a liability because the restaurant will need to provide meals at a later date. So they've got a liability to provide meals, and this is referred to as unearned revenues. When current liabilities are deducted from current assets, the net amount is often called working capital.

Now, we'll talk about contingent liabilities. These are potential liabilities that may occur. There are three types. The first type is when the liability is probable and can be reasonably estimated. For this type, a liability is recorded on the balance sheet. The most common of these is warranty liabilities. Suppose a company sells a product in 2019 that has a two year warranty and a warranty claim is made for a defect in 2020. If the company were to record an expense for this warranty claim in 2020, they'd be violating the matching principle because they recorded the revenue in 2019. So, instead, what is done is that when the sale is made, in 2019, the company has to record an estimated warranty liability, as well as an expense on the income statement. As an example, turn to the financials of NCR. On page 58, the first bold-faced heading says, "Warranty and Sales Returns." And it reads, "Provisions for product warranties and sales return allowances are recorded in the period in which NCR becomes obligated to honor the related right, which generally is the period in which the related product revenue is recognized." in other words, when the sale is made. "The company accrues warranty reserves," this just says they record the warranty liability and the warranty expense, "based upon historical factors such as labor rates, average repair time, travel time, number of service calls per machine, and cost of replacement parts. When a sale is consummated, a warranty reserve is recorded, based on the estimated cost to provide the service over the warranty period."

The second type of contingent liability is when it is reasonably possible or when the amount cannot be reasonably estimated. Does “reasonably possible” mean a 20% likelihood? A 30% likelihood? “Reasonably possible” is the exact language used by the FASB and it means whatever management believes it to mean. At any rate, this type of contingent liability just needs to be disclosed in the notes to the financial statements -- they're not recorded on the balance sheet as actual liabilities. Let’s turn to the financials of UPS. On page 111, look at the third line of second paragraph from the top of the page. It reads, "We accrue for legal claims when, and to the extent that, amounts associated with the claims become probable and can be reasonably estimated." Now, this is rather unusual for lawsuits, saying that they can reasonably estimate what the loss will be. And, if it is probable, then they actually do have to record a liability. But the usual situation is, where either it's not probable that they will have a loss, or they cannot reasonably estimate it, then only disclosure in the notes is required. That is mentioned in the next paragraph, so let's read that. It says, "For those matters as to which we are not able to estimate a possible loss or range of loss, we are not able to determine whether the loss will have a material adverse effect on our business, financial condition, or results of operations of liquidity. For matters in this category, we have indicated in the descriptions that follow the reasons that we are unable to estimate the possible loss or range of loss." So, what they're saying is, they will describe the nature of the lawsuits, but they are not recording liabilities for them on the balance sheet.

The third type of contingent liability is when the loss is remote. Does “remote” mean less than a 10% chance? Less than a 5% chance? “Remote” is the exact language used by the FASB and it means whatever management believes it to mean. At any rate, this type of contingent liability does not even need to be disclosed at all.

Now, we turn to long-term liabilities. These are liabilities that are not due within one year. They are transferred to the current liability section of the balance sheet the year before they come due. As an example, turn to the UPS financials on page 66. Near the middle of the page, underneath the heading “Current Liabilities”, we see an item called “Current maturities of long-term debt and commercial paper”. The December 31, 2018 amount of $2805 represents the amount that had formerly been classified as a long-term liability, but is now due within one year from December 31, 2018, so it has been re-classified as a current liability.

Examples of long-term liabilities include notes payable that have due dates beyond one year. Mortgages payable are just a special form of notes payable that have collateral associated with them. Lease obligations and deferred taxes will be discussed, later in this lesson and bonds payable will be discussed in the next session. Pension obligations are rather complex, so we're not going to cover them at all. When we record long-term liabilities on a balance sheet, we consider a time value of money concept, which says that a dollar to be received in the future is not the same as a dollar now. Because of things like inflation, or the investment value of money, money in the future is not worth the same as money right now. And so, therefore, we record these long-term liabilities at their present values, where we take the future amounts and discount them to obtain present values. In this module, we do not cover how that's done; in your finance module, you will discuss about how present values are determined.

Now, let's talk about lease obligations. We distinguish between an operating lease and a capital lease. An operating lease is just simply a short-term rental agreement, and therefore, the amount that's paid is recorded as an expense on the income statement -- rent expense, or lease expense. On the other hand, a capital lease is where an asset and liability will be recorded on the balance sheet. So, to give you some background for that, suppose you had a company that wants to buy a building for $10 million and it will issue a note payable for the $10 million. So they'd have a liability, and an asset, both for $10 million. You might think it's a wash, because both assets and liabilities are the same amount. However, when it comes time, maybe for some future borrowing, if the company already shows a $10 million liability, even if they have the same amount in assets, they may not easily be able to borrow money. Lenders might be wary of them being able to pay, so companies don't like to show large amounts of liabilities on their balance sheet, even though it might be offset by having the same amount of assets. And so, therefore, instead of buying assets, companies sometimes like to lease them. In the past, many companies would structure leases in ways that made them look almost like purchases. So the FASB has ruled that if the lease term is more than one year, it must be capitalized. An asset and liability are recorded at the present value of the future payments, and we call that a capital lease. Let’s turn to Home Depot's financials. On page 45, the sixth item in its list of Net Property and Equipment says “Capital leases.” Then, on page 46, the right-hand column at the top of the page is titled Capital Leases, and next to it is one titled Operating Leases. So, Home Depot has both forms of leases, and if you look at the capital lease column, at the end of that, it shows $992 million of long-term capital lease obligations, which exclude the current installments.

Now, let's talk about another liability called deferred taxes. This results from the difference between taxable income on the Income Statement versus taxable income for the IRS. And I might add that what we're talking about here is timing differences, rather than permanent differences. A permanent difference results when the item appears on one of the two, but not on the other. An example might be interest on municipal bonds. Interest received from bonds purchased, say, from the city of Atlanta, would be treated as revenue on the company's Income Statement, just like any other revenue. However, for tax purposes, Congress has decided that they want to promote investment in municipal bonds, so they do not tax this interest. It will never appear as revenue on the IRS tax return. So this is a permanent difference, and this is not what deferred taxes refers to. Again, deferred taxes refers to just a timing difference, where the item appears on both the Income Statement and the IRS tax return, but just in different time periods. A common item giving rise to deferred taxes is depreciation, where companies use straight line depreciation most often for financial statements, but they'll use some form of accelerated depreciation for the tax return. So, let's look at NCR's financials, and, actually, we'll see that deferred taxes often give rise to liabilities, but, sometimes, they give rise to assets. On page 80, the top of the page shows a bold-faced heading that says "Deferred income tax assets." It includes things like employee pensions and other benefits, other balance sheet reserves and allowances, and so on. Below that, there's another bold-faced heading, titled "Deferred income tax liabilities." This includes things like intangibles, capitalized software, and other. So, at any rate, companies often have deferred taxes, resulting in liabilities, assets, or, perhaps both, like you see with NCR. In our next session, we'll conclude our discussion of liabilities by covering bonds payable.

## Video 11 – Bonds

We now continue our discussion of liabilities by covering bonds payable. Bonds are ways of raising large sums of money by companies. Instead of going to a bank and borrowing, a company will borrow from the general public by issuing bonds. Bonds are often publicly traded. When the bonds are redeemed by the bond-holders, the company must repay the principle amount, sometimes called the face-amount of the bonds, plus they will pay interest periodically. They typically pay interest once a year or twice a year. The face value is the amount the company needs to pay the bondholders when the bonds mature and this amount is not necessarily the initial selling price of the bond. The selling price depends on the relationship between the stated interest rate on the bonds and the market rate of interest. The reason that the market rate of interest is often different than the stated rate is because it takes some time from when the bond contract is determined to the time that the investment bank actually puts these bonds out to the public. During this time lag, the market rate of interest may have changed.

Suppose a company has bonds that are paying a stated rate, in other words, the bond contract rate, is 7%. But now suppose that the market is paying 8%, that is, 1% higher for bonds that have similar risk characteristics. Why would someone invest in bonds that are paying a 7% interest rate when they can get similar bonds that are paying 8% interest? Well, they would only do that if the company issuing bonds offers them a discount. Say for example, these were $100,000 face value bonds and the company said, "Well, you only need to pay in $95,000 and you'll get $100,000 when the bonds mature in return for you accepting a 1% lower interest rate than the market is offering”. Now suppose we have the opposite situation, where the stated interest rate is more than the market. Suppose the stated interest rate again is 7%, but now the market rate is only 6%. So of course people would want to invest in these bonds, but the company knows this and they know that a person would actually be willing to pay extra -- they'd be willing to pay a premium in order to receive the extra interest. So bonds that have a face value of $100,000 might sell for $102,000 because they're offering the extra 1% interest every year. Let’s now look at the UPS financials. On page 106, you see a list of their long-term liabilities. A little past halfway down the list they have 8.375% debentures, and they've actually got two categories of those. By the way, Debentures means unsecured bonds. The 8.375% is the stated rate that those bonds are paying their bondholders.

The presentation for bonds that are issued at a discount will show the face amount listed first. in the example shown, we see $100,000 and then the discount of $3000 is deducted to arrive at the net amount of $97,000, which we refer to as the carrying value of the bonds. So the carrying value will be less than the face amount. With a premium, on the other hand, we start out with the face amount, in this case $100,000 and we would add the premium amount, which in this example is $4000, to arrive at the net amount of $104,000, again called the carrying value, and we see that for a premium the carrying value of the bond is more than the face value.

Bonds sometimes have a feature of convertiblity. That is, they may be convertible into shares of stock at the option of the bondholder. This feature is not common, but sometimes you do see that with bonds. Another feature that sometimes is associated with bonds is that of callability. This is where the company that issues the bonds has the option to require that the bonds be redeemed before the maturity date. The reason this happens is because the company, let's say, is paying 5% interest on those bonds and suppose that the interest rates have gone down to 2%. By calling in those bonds, they can then issue new bonds and only have to pay 2% interest instead of 5%. At any rate, when bonds are called-in, there's usually a gain or a loss on this early retirement. If the cash that's paid to the bondholders is more than the carrying value of the bonds, then a Loss on Retirement is recorded, whereas if the cash paid to the bondholders is less than the carrying value of the bonds, then a Gain on Retirement is recorded. These gains or losses appear on the income statement, the gains increasing the net income, the losses decreasing the net income. Turn to the UPS financials, page 107. About two-thirds down the page, there are two bullet points. Look at the third sentence of the first bullet point. It says, “These debentures are redeemable in whole or in part at our option at any time.” Hence, these bonds are callable by UPS.

Let's now conclude by comparing features of bonds versus capital stock. These are two forms that a company can use to raise money from the public -- borrowing in the form of bonds or issuing shares of stock. For bonds, if we look at the first bullet point listed, this indicates that bonds must be repaid to the bondholders. Whereas, if you look at the first bullet point for capital stock, we see that no repayment is ever needed to be made to the stockholders. Looking at the second bullet point for bonds, we see that bonds need to pay interest to the bondholders. That's required. Whereas, in the second bullet point for capital stock, we see that companies need not pay dividends. They often do, but it's not required. The third bullet point for bonds indicates that interest is reported as an expense and therefore reduces net income. Whereas, in the third bullet point for capital stock, we see that dividends are not expenses, they're merely distributions of earnings. They do not reduce net income. So these first three bullet points would seem to suggest that there's an advantage in issuing stock. No repayment, no paying of dividends is necessary, no expense to reduce net income. So what's the advantage of bonds? Well, look at the fourth bullet point that says no dilution of ownership for bonds, whereas the fourth bullet point for stocks says that we have a dilution of ownership when we issue capital stock. If a stockholder owns 1% of the company and the company issues additional shares of stock and that stockholder doesn't buy any, then that stockholder will subsequently own less than the 1% that he had before, so there's a dilution. In contrast, when bonds are issued, there's no effect on the percentage of ownership of the company. So that would be an advantage of issuing bonds. This concludes our discussion of the liability section of the balance sheet. In the next session, we will start on the stockholder's equity section of the balance sheet.

## Video 12 – Capital Stock

In this lesson, we begin the discussion of the stockholder's equity section of the balance sheet, first focusing on capital stock. In the stockholder's equity section, there are two categories. One is paid in capital, the other is retained earnings. The paid-in-capital section involves the accounts that deal with capital stock. Before talking about these accounts, let's talk about shares of stock. A company has a number of authorized shares that are allowed to be sold and these authorized shares can end up either being issued, meaning sold, or unissued, meaning never been sold. Now these issued shares, the ones that have been sold, can either be outstanding, which means still in the hands of the stockholders, or the company may have bought back some shares from stockholders, and those are called treasury shares. The key one is the number of outstanding shares because the outstanding shares are the ones that have voting rights, receive dividends, and are used in determining earnings per share. Recall that EPS is the ratio of the net income divided by the number of shares and so the denominator, the number of shares, is the outstanding shares. Let’s look at the financials of Home Depot. Turn to page 31 and about 3/4 of the way down, you'll see an item that says, Common Stock, par value five cents. We'll talk about par value later. Then, it says, authorized, 10,000 shares, issued 1782 at February 3, 2019 and then skip over to where it says, outstanding, 1105 shares at February 3, 2019.

Companies often have two categories of capital stock -- common stock and preferred stock. To see an example of that, let's turn to NCR's financials, page 53. About 3/4 of the way down, you'll see a bold-faced heading titled Stockholders' Equity, then it says NCR's Stockholders' Equity, and underneath that, it lists preferred stock and then, common stock. For the preferred stock, if you look at the columns and numbers, instead of numbers, you'll see dashes, indicating that, while they've authorized preferred stock to be sold, they have not yet issued any shares of preferred stock. The term preferred stock would seem to suggest that there are preferences associated with these shares, and indeed, there are. One preference is relating to dividends. Before common shareholders can receive any dividends, preferred shareholders must receive the dividends that are coming to them. We'll discuss the details of how dividends are distributed to the preferred and common shareholders in a subsequent session. The other preference relates to liquidation. If a company liquidates and is unable to fully pay creditors and shareholders, well first, the creditors must get paid. But among the stockholders, the preferred shareholders must get their share before the common shareholders get anything. So what's the advantage of common stock? The advantage of common stock is that they have the main voting rights. Not always exclusive voting rights -- sometimes there are limited voting rights for preferred shareholders. But the common shareholders do have the main voting rights and therefore, they are the true owners of the corporation. They decide on the Board of Directors and so on.

Sometimes, there are different classes of common stock that have different rights. Turn to the financial statements of UPS, page 113. The first sentence on the page reads, “We maintain two classes of common stock, which are distinguished from each other by their respective voting rights. Class A shares of UPS are entitled to 10 votes per share, whereas class B shares are entitled to one vote per share. Class A shares are primarily held by UPS employees and retirees, as well as trusts and descendants of the Company's founders, and these shares are fully convertible into Class B shares at any time. Class B shares are publicly traded on the New York Stock Exchange under the symbol UPS”. So it mentioned this convertibility feature and indeed, just like we talked about bonds sometimes having a convertibility feature into shares of stock, here we have one class of common stock able to be converted into another class. Sometimes preferred stock can be converted into shares of common stock. Turn to NCR’s financials, page 73. Right after the second boldfaced heading titled “Conversion Features”, it reads, “The Series A Convertible Preferred Stock is convertible at the option of the holders at any time into shares of common stock at a conversion price of $30 per share and a conversion rate of 33.333 shares of common stock per share of Series A Convertible Preferred Stock.”

Shares of capital stock usually have a value associated with them called par value or stated value. This is just a nominal value assigned to and printed on the face of each share of the corporation’s stock. It has no tie-in at all to the worth of the stock, that is, to the market value of the stock. The creation of par value goes back about a century ago, before the stock market crashed in 1929. Companies were paying out lots of dividends and when the companies ran into trouble and went belly up, the creditors were left with nothing. So, to try to protect creditors, many states instituted these notions of par value, which said that a company could not issue stock below an amount called the par value. To protect the creditors, this amount could not be distributed as dividends. However, no minimum amount was ever established for par values. So, think about a company wanting to have as much flexibility as possible. They want to have par values that are very low because they're not allowed to issue the stock below the par value. They can issue it above, but not below. So, a discount is not allowed -- only a premium is permitted. Let's look at the financials of NCR first. On page 53, we see near the bottom, the boldface heading Stockholders' Equity. In that section, we see preferred stock, where it says par value of $0.01 per share. Same thing with the common stock, right below that. Par value of just $0.01. Right below that, we see another account titled Paid-in-Capital. The accounts preferred stock and common stock can only contain the total par amounts, so any amounts above par must be placed in a separate account, which is often called Additional Paid in Capital, but which NCR just calls Paid in Capital.

Sometimes, companies buy back shares of stock from the shareholders. This is referred to as treasury stock. This happens for various reasons. Sometimes, the company will want to issue stock options to their top management and they will have not enough unissued shares of stock, so they'll have to buy back shares in order to give these stock options as compensation to top executives. Sometimes, companies want to prop up the price of their stock through supply and demand, so they do that by buying back shares of stock. Another reason sometimes, is to increase the earnings per share. Recall that earnings per share is the net income divided by the number of shares outstanding. One way of increasing earnings per share is to increase net income. The other way is to reduce the number of shares outstanding. That is, reduce the denominator by buying back shares of stock from shareholders. Treasury stock is not considered an asset. If you think about a company that buys shares of stock of another company as an investment, that is treated as an asset. But, buying back shares of the company's own stock is not considered an asset. Instead, it's a deduction in the stockholders' equity section of the balance sheet and therefore it's called a contra-equity account. Let’s look at Home Depot's financials. On page 31, the third item from the bottom of the page says “Treasury stock, at cost, 677 shares and so forth. Looking at the first column of numbers, you see a negative 58,196. There are parentheses around that number, indicating it's being deducted in the stockholders' equity section because it is a contra-equity account. When treasury stock is purchased from shareholders, it is recorded at the cost, not the par value. The par value is not relevant at all in reporting amounts for treasury stock. Sometimes, treasury stock is reissued to shareholders. When that happens, there's no gain or loss reported for the sale of treasury stock. When a company sells assets, as we've seen in an earlier session, there very often have a gain or a loss reported on the income statement. However, the FASB does not want companies affecting their net income by engaging in transactions involving their own stock, so no gain or loss is recognized when treasury shares are reissued. This concludes today's session and in the next session, we'll talk about the retained earnings component of stockholders' equity.

## Video 13 –Cash Dividends

In today's session, we're going to be covering the stockholder's equity section further, specifically the retained earnings portion of stockholder's equity, and more specifically, cash dividends, which decreases retained earnings. There are three important dates to discuss in relation to cash dividends. The first is the date of declaration. That's when the board of directors votes to pay dividends, and it is at that time that the dividend payment becomes a liability of the corporation, and so it's on that date that the liability for dividends would appear on the company's balance sheet. Let’s skip over to the third date, which is the date of payment. That's when the cash dividends are actually paid out by the company. The middle date, called the date of record, just indicates who is to receive the dividends. So for example, if a company declared dividends on October first, and they paid the dividends on November first, then the question becomes what happens if there is a sale of shares of stock, between October first and November first -- who gets the dividends? The date of record, which is established by the board of directors on the date of declaration, determines who receives the dividends. So, for my example, suppose the date of record was established as October 20th. So, whoever owns the stock on October 20th is the one that receives dividends, and everybody knows this, so that'll be reflected in the price of the stock if it is sold between the declaration date and the payment date.

When discussed preferred stock versus common stock in a previous session, we mentioned that preferred stock has a couple preferences -- a liquidation preference and a dividend preference. We will now provide more detail about the dividend preferences that may be associated with preferred stock. One type of preference is called the current dividend preference, and another is called the cumulative dividend preference. Let's first talk about the current dividend preference. This is where the preferred stockholders get a percentage of total par, that percentage being called dividend rate, and then the common stockholders get the remainder of whatever has been declared. So as an example, suppose a company has 10,000 shares of 5% preferred stock, the 5% being the dividend rate, having a par value of $10 per share. We calculate the current dividend preference by taking 5% of 10,000 times $10 -- 10,000 times $10 would be $100,000 -- that is the total par -- and 5% of that would be $5,000. So if the company declared dividends in the amount of $4,800, the preferred shareholders would get it all, and the common shareholders would get nothing. If the company declared dividends of $5,500, the preferred shareholders would get 5,000, and the common shareholders would get the remaining $500. Suppose a company were to declare $1,000,000 in dividends. The preferred shareholders would get only $5,000, and the common shareholders would get the remaining $995,000.

Now let's talk about the cumulative dividend preference. This is where the preferred stockholders get the current dividend preference, plus they also get any dividends in arrears. Arrears refers to the missed dividends from past years, the dividends that they would've gotten had the company declared dividends in the amount of the dividend rate. Once the preferred stockholder's current dividend preference plus the dividends arrears are satisfied, then, and only then, the common stockholders get the remainder of what's been declared. Recall the example that I gave before, where the company has 10,000 shares of 5% preferred stock, with a par value of $10. Suppose no dividends have been paid for the past three years prior to the current year. We determine the cumulative dividend preference for the current year by taking the current dividend preference, which we calculated earlier to be $5,000, and we multiply it by four, the four coming from the three years in arrears plus the current year. So, 4 times $5,000 would be $20,000 – this is the amount of cumulative dividend preference. Suppose the company declared dividends in the amount of $18,000. The preferred shareholders would get it all, and then $2,000 would remain in arrears. Suppose the company declared $25,000 in dividends. The preferred shareholders would get $20,000, and the common shareholders would get $5,000. If the company declared $1,000,000 in dividends, the preferred shareholders would still just get $20,000, and the common shareholders would get the remaining $980,000. So the question becomes, how are these dividends in arrears treated on the company's balance sheet? Are they reported as liabilities? The answer is: they do not represent actual liabilities and thus they're not recorded in the accounts and they're not put on the balance sheet. The reason for this is that the company really never has to declare dividends, they never have to pay dividends, and so therefore these dividends in arrears, while they're likely to be paid in the future, there's no legal obligation to do so, and therefore, there's no actual liability. However, the amount of dividends in arrears does need to be disclosed in the notes to the financial statements. Turn to page 73 in the NCR financials. In the middle of the third line from the top of the page, it reads, “Holders of Series A Convertible Preferred Stock are entitled to a cumulative dividend at the rate of 5.5% per annum, payable quarterly in arrears.” This concludes this session on cash dividends. In the next session, we'll conclude our discussion of stockholder's equity.

## Video 14 – Other Stockholders’ Equity Items

In this session, we conclude the discussion of stockholders' equity by talking about some additional stockholders' equity items. First, we'll talk about stock dividends. As opposed to the cash dividends that we discussed the previous session, stock dividends are distributions of additional stock in proportion to the shareholder's current holdings. So, for example, if a company declared a 10% stock dividend and a shareholder currently has 100 shares to stock, then the shareholder would receive an additional 10 shares. Why does a company issue stock dividends instead of cash dividends? Well, one reason could be that they just don't have the cash available. Another reason could be that they would rather invest their cash in other things. A third reason relates to the accounting for stock dividends, which involves a transfer from retained earnings to paid-in capital. Sometimes, when companies have high amounts of retained earnings and they're not paying dividends, stockholders have been known to complain about it. They feel that the company is earning a lot of profits and therefore, they should distribute some of those earnings. To avoid the clamor that might be raised by the stockholders, companies could issue stock dividends, thereby transferring some of these retained earnings to paid-in capital. Alright, so the effects of stock dividends are, first, they increase the number of shares outstanding and secondly, as I just mentioned, they transfer retained earnings to paid-in capital. Note that the total stockholders' equity's not changing. There's just a rearrangement within stockholders' equity – from retained earnings to paid-in-capital. Stock dividends have no effect on assets. They also have no effect on the percentage ownership of stock by the shareholders. If a shareholder currently owns 3% of the company's total stock, then even after a stock dividend, the shareholder will still own 3% of the company's total stock.

Now let's talk about stock splits. These are designed to increase the number of shares of stock and reduce the par value per share, so that there will be no effect on the accounts, specifically no effect on the common stock or the preferred stock account that appears on the balance sheet. So for example, suppose that there was a two for one stock split. That would mean that the number of shares would double. If before the stock split, the company had 1,000 shares of stock, then after this two for one stock split, they would then have 2,000 shares. Suppose the par value were two dollars before the stock split, then a two for one stock split would reduce the par value in half to one dollar, so that the total amount of paid-in capital would stay the same. Before the stock split, 1,000 shares times $2 -- total of $2,000; after the stock split, 2,000 shares times $1 -- same $2,000. Why do companies do stock splits? Generally it is to reduce the market value per share of their stock -- to make it more affordable for the everyday person to buy their stock. So, not only does it reduce the par value, but when you double the number of shares, the market price will be cut in half as well because, after all, the total market value of the company is not changing just because a company doubles the number of shares of stock.

Sometimes, companies do reverse stock splits. As that term seems to indicate, this is just the opposite of a stock split. This decreases the number of shares of stock and increases the par value per share. Like a stock split, a reverse split has no effect on the accounts on the balance sheet and no effect on total paid-in capital. Suppose a company has 2,000 shares of stock at one dollar par value. A one for two stock split would decrease the number of shares from 2,000 to 1,000, but it would double the par value per share from one dollar to two dollars, so that both before and after the reverse stock split, the total paid-in capital would be $2,000. Why do companies do reverse stock splits? One reason is because various stock exchanges have rules about the minimum trading price of the stock. So for example, if the rule is the stock has to have a trading price of at least a dollar, then if a company's stock price is projected to be going below a dollar, to avoid being de-listed, they might do a reverse stock split to prop up the market value per share. Another reason for why companies sometimes do reverse stock splits is that certain institutional investors like pension funds have rules about the market value per share of stocks they invest in. I believe five dollars per share is one of the lower limits for some pension funds. So if a stock is trading below five dollars, the pension fund would not be able to invest in it, and if a company sees a stock about to go below that five dollar amount, then by doing a reverse stock split, they increase the price so that the pension funds can still invest in their company.

The stockholders' equity section often contains an item called non-controlling interests. These relate to consolidated balance sheets, which recall from a previous session, are produced when a company owns more than 50% of another company. The non-controlling interest would be, in these consolidated balance sheets, the portion of owners' equity that's not controlled by the parent. Suppose a company owns 70% of another company, then those balance sheets would be consolidated and the question is how to account for the remaining 30% of the equity, which is referred to as non-controlling interest? Several years ago there were three options that companies could use and did use. One was to put this non-controlling interest in stockholders' equity. A second option was to put it in the liability section, and a third approach was to put it in what I'll call no man's land. In other words, between liabilities and stockholders' equity, and in fact, many companies used that approach. A few years ago, the FASB finally ruled that non-controlling interests must be reported in the stockholders' equity section. Turn to the NCR financials on page 53. In the stockholders' equity section, three lines from the bottom of the page, we see that NCR reports “Noncontrolling interests in subsidiaries.”

Let’s now discuss stock-based compensation. When a company compensates its employees with salaries or wages in the form of cash, the amounts are reported as expenses on the income statement. What about when a company compensates its employees by giving them things like stock options, the option to purchase shares of stock at a future time, typically at a bargain price? For the longest time, there were debates about whether or not this should be recorded as an expense on the income statement or not at all. Until a few years ago, companies could essentially do whatever they wanted and most companies did not report it on the income statement as an expense. Nowadays, however, stock-based compensation must be expensed, much to the chagrin of many companies, particularly startup companies that compensate their employees to a large degree with things like stock options, so they now have to report large amounts of expense on the income statement that they did not have to previously. Let’s look at NCR’s financials on page 81. Right under the heading, “Stock Compensation Plans”, it reads, “The Company recognizes all share-based payments as compensation expense in its financial statements based on their fair value.” Now turn to the UPS financials on page 73. Right under the heading, “Stock-Based Compensation”, it states, “All share-based awards to employees are measured based on their fair values and expensed over the period during which an employee is required to provide service in exchange for the award.” This concludes our discussion of stockholders' equity, and in fact, we have also concluded our discussion of the entire balance sheet. In the next session, we'll talk about how we use financial ratios to analyze financial statements of companies.