Access the Rest of the Fundamentals Course

Financial Modeling Fundamentals Modules 2 and 3: Accounting and the 3 Financial Statements – Why the Financial Statements Exist

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Overview & Key Rules of Thumb

This guide introduces you to the most common **accounting topics** that will come up in interviews and on the job. It also summarizes the accounting lessons in our financial modeling courses.

You are almost guaranteed to receive questions on accounting, no matter your seniority or the roles you're applying for.

The most important topics include:

1. What the 3 financial statements are and why we need them (e.g., How do you decide what goes on the Income Statement or Cash Flow Statement?).

2. How to walk through interview questions related to the financial statements (e.g., What happens when Depreciation increases by $10?).

3. How to calculate metrics and ratios related to the 3 financial statements, such as Working Capital and Free Cash Flow, and what they mean.

We focus on those topics in this guide, briefly explain each one, and then present interview questions so you can test yourself at the end.

You **need** to review the accompanying "interview question" Excel model, as that file will make it 10x easier to understand everything.

We cover more advanced accounting topics, such as how to project the 3 statements, and how to work with items like equity investments, non-controlling interests, and net operating losses (NOLs) in the next guide.

Key Rule #1: Why We Need the 3 Financial Statements

Remember how everything in this course goes back to that formula in the last guide?

Company Value = Cash Flow / (Discount Rate – Cash Flow Growth Rate)

In finance, you need to understand the 3 financial statements to **estimate a company's cash flow and cash flow growth rate so that you can use them in that formula**.

The challenge is that the **CASH FLOW** a company generates is very different from its "profit" according to the accountants.

And that's the key reason we need a *set* of financial statements rather than just one: **to tell us how much cash flow a company is generating**.

Let's start with a simple example: imagine a company that offers online courses and coaching (kind of like the company whose guide you're reading).

Income Statement:		
Revenue:		**Year 1**
Online Courses:	$	550
Resume/CV Editing and Coaching:		100
Total Revenue:		**650**
Cost of Goods Sold (COGS):		
Online Courses:		20
Resume/CV Editing and Coaching:		50
Total Cost of Goods Sold (COGS):		**70**
Gross Profit:		
Online Courses:		530
Resume/CV Editing and Coaching:		50
Total Gross Profit:		**580**
Gross Margin %:		*89.2%*
Operating Expenses:		
Sales & Marketing:		150
Research & Development:		75
General & Administrative:		50
Total Operating Expenses:		**275**
Operating Income (EBIT):		**305**
Operating Margin:		*46.9%*
Other Income / (Expenses):		20
Interest Income / (Expense):		-
Pre-Tax Income (EBT):		**325**
Income Taxes:		(130)
Net Income (Profit After Taxes):	$	**195**
Net Income Margin:		*30.0%*

You pay for the courses upfront, you gain immediate access, and then you have lifetime access after you sign up.

There are no factories or offices, minimal capital is required, and we don't have to order inventory because there are no physical products to sell.

If we tracked the sales, expenses, and profits for this business, it might look like the diagram on the left.

"Revenue" represents our total sales across all segments, and "Cost of Goods Sold" represents expenses that can be linked to *individual* units sold (such as the materials and shipping, or human labor for services).

The Gross Margin tells you how much *additional* profit you would earn from each sale before fixed expenses like employees and rent.

Operating Expenses include items that **can't** be linked to individual products sold, such as marketing, rent, employee salaries, and customer support.

Operating Income tells you how much the business earned before "side activities," interest, and taxes, and Net Income gives you the company's **bottom line**: how much it earned AFTER all taxes and expenses in all categories.

Record-keeping is very simple because when we sell something, we get the actual cash for it, and when we incur an expense, we pay it in cash.

In this simple case, Net Income – Profit After Taxes – is VERY close to the cash flow generated each year.

But in real life, no company is this simple. Here are a few items that **create a difference** between Net Income and Cash Flow Generated:

Installment Payments and Accounts Receivable

Instead of requiring 100% upfront cash payments, we start allowing customers to pay via **monthly installments**. However, they still receive immediate access to the courses.

We need to recognize the courses sold as "revenue" upfront, even though we haven't received the full cash payment from customers yet.

That's because revenue recognition is based on the **delivery** of the products or services.

Let's say that a course costs $300, and you decide to pay in installments over 3 months. Here's what revenue vs. cash received looks like:

Receivables / Installment Payment Scenario:

	Month 1	Month 2	Month 3
Revenue:	$ 300	$ -	$ -
Cash Rec'd:	100	100	100

No Installment Payment Scenario:

	Month 1	Month 2	Month 3
Revenue:	$ 300	$ -	$ -
Cash Rec'd:	300	-	-

Let's say that this idea takes off, and many customers decide to pay via installments.

We earn an extra $50,000 in revenue as a result of these installment plans.

Here's what the Income Statement looks like before and after that extra $50K in revenue (Year 1 represents the "Before" state, and Year 2 represents the "After" state):

Income Statement:	Year 1	Year 2
Revenue:	$ 650	$ 700
Cost of Goods Sold (COGS):	70	70
Gross Profit:	580	630
Gross Margin %:	*89.2%*	*90.0%*
Operating Expenses:		
Sales & Marketing:	150	150
Research & Development:	75	75
General & Administrative:	50	50
Total Operating Expenses:	275	275
Operating Income (EBIT):	305	355
Operating Margin:	*46.9%*	*50.7%*
Other Income / (Expenses):	20	20
Interest Income / (Expense):	-	-
Pre-Tax Income (EBT):	325	375
Income Taxes:	(130)	(150)
Net Income (Profit After Taxes):	$ 195	$ 225
Net Income Margin:	*30.0%*	*32.1%*

Since revenue is based on the **delivery** of the courses, our revenue increases from $650K to $700K.

And then our Net Income jumps up from $195K to $225K.

But since we didn't collect this $50K in revenue in CASH, our cash balance has NOT increased by $50K.

The "cash that we're waiting on" is called **Accounts Receivable**, and you have to reflect it by adjusting the company's Net Income:

Net Income to Cash Adjustments:	Year 1	Year 2
Net Income:	$ 195	$ 225
Change in Accounts Receivable:	-	(50)
Net Change in Cash:	$ 195	$ 175

So installment payments create a **difference** between Net Income and Cash Generated. The Income Statement says we earned $225K, but we earned **only $175K in cash**.

Each time someone signs up for the course but does NOT pay 100% upfront in cash, the "Accounts Receivables" balance increases and our cash profits will be less than Net Income.

When this "Accounts Receivable" balance decreases, it means we've finally *collected* the cash. When that happens, the Net Change in Cash will exceed Net Income.

Prepaying Expenses

Then we get another bright idea: we decide to negotiate **better rates** with our vendors, suppliers, and landlord by offering to **pay expenses in advance**.

For example, if we normally pay $10,000 in rent each month, perhaps we can pay only $25,000 for 3 months, rather than $30,000, if we pay for those 3 months in advance.

Our Income Statement stays the same when we first make the cash payment because **the expense has not yet been incurred**.

We start recording that rental expense *only* when we've begun to occupy the building for the first of those 3 months.

But since we've made this cash payment in advance, it creates another differential between Net Income and Cash Generated.

Net Income to Cash Adjustments:	Year 1	Year 2
Net Income:	$ 195	$ 225
Change in Accounts Receivable:	-	(50)
Change in Prepaid Expenses:	-	(30)
Net Change in Cash:	**$ 195**	**$ 145**

The "Change in Prepaid Expenses" is shown as a negative because it **reduces our cash flow**.

Vendor Negotiation, Accounts Payable, and Accrued Expenses

Then, we get the bright idea to do **the opposite** with other vendors, such as a marketing firm we just hired.

We go to this firm and say, "Hey, please start working for us now… and accept a cash payment from us at some later date. Trust us; we'll pay you."

This might sound insane, but it happens in real life all the time: you get an invoice for something, the product or service is delivered, and then you pay after it's delivered.

Income Statement:	Year 1	Year 2
Revenue:	$ 650	$ 700
Cost of Goods Sold (COGS):	70	70
Gross Profit:	580	630
Gross Margin %:	*89.2%*	*90.0%*
Operating Expenses:		
Sales & Marketing:	150	165
Research & Development:	75	75
General & Administrative:	50	50
Total Operating Expenses:	275	290
Operating Income (EBIT):	305	340
Operating Margin:	*46.9%*	*48.6%*
Other Income / (Expenses):	20	20
Interest Income / (Expense):	-	-
Pre-Tax Income (EBT):	325	360
Income Taxes:	(130)	(144)
Net Income (Profit After Taxes):	$ 195	$ 216
Net Income Margin:	*30.0%*	*30.9%*

If this marketing firm's services cost $15,000, we'd have to record the expense on our Income Statement **as the services are delivered** (see the diagram on the left).

Our "Sales & Marketing" expense increases from $150K to $165K as a result. Our Net Income falls to $216K.

But remember: we haven't paid in cash yet.

So our Net Income to Cash Adjustments look like this:

Net Income to Cash Adjustments:	Year 1	Year 2
Net Income:	$ 195	$ 216
Change in Accounts Receivable:	-	(50)
Change in Prepaid Expenses:	-	(30)
Change in Accounts Payable:	-	15
Net Change in Cash:	**$ 195**	**$ 151**

Since we did NOT pay for this expense in upfront cash, our "Net Change in Cash" has *increased*.

You track these "owed payments" in line items called **Accounts Payable** and **Accrued Expenses**.

When they increase, your cash flow goes up because you're "delaying payment."

When they decrease, your cash flow goes down because you're finally paying in cash.

At this point, you have to start tracking these items – Receivables and Payables – separately:

Assets and Liabilities & Equity:	Year 1	Year 2
Assets:		
Cash:	$ 300	$ 451
Accounts Receivable:	-	50
Prepaid Expenses:	-	30
Total Assets:	**$ 300**	**$ 531**
Liabilities & Equity:		
Accounts Payable:	$ -	$ 15
Debt:	-	-
Equity:	300	516
Total Liabilities & Equity:	**$ 300**	**$ 531**

"Cash" is like cash in your bank account. Accounts Receivable tracks the payments we're owed. Prepaid Expenses tracks what we've *paid in advance* but have not yet incurred.

On the other side, Accounts Payable tracks *what we owe to other people*. Debt is like credit card or student loan debt, and "Equity" represents the cumulative profits we've saved up over time.

Items like Cash, Accounts Receivable, and Prepaid Expenses are **Assets** because they deliver a **future benefit** to us. For example, that Accounts Receivable balance of $50K means that we should expect $50K in cash from customers in the future.

Items like Accounts Payable and Debt are **Liabilities** because they represent a **future cost** for us. For example, the $15K Accounts Payable balance means that we'll have to pay $15K in cash for owed expenses in the future.

You can think of **Equity** as a **funding source for the business that will NOT result in future cash costs**. It includes money contributed by the owners, money raised by selling ownership in the business, and the company's saved-up cumulative profits over time.

Monthly Subscriptions and Deferred Revenue

At this point, we get another brilliant idea and decide to start selling a monthly subscription service where we interview bank CEOs.

But the catch is that *customers* will have to pay for a subscription in advance!

After all, we can't afford to produce those interviews unless people commit to paying for them.

So we open up pre-enrollments for this service, and we get $15,000 in payments from customers.

We can't recognize ANY of that as revenue yet because we haven't delivered any of these interviews!

So our Income Statement does **NOT** change yet. Instead, we have to create an account called "Deferred Revenue," and reflect upfront cash collected there:

Net Income to Cash Adjustments:	Year 1	Year 2
Net Income:	$ 195	$ 216
Change in Accounts Receivable:	-	(50)
Change in Prepaid Expenses:	-	(30)
Change in Accounts Payable:	-	15
Change in Deferred Revenue:	-	15
Net Change in Cash:	**$ 195**	**$ 166**

So once again, our Net Change in Cash is quite different from Net Income.

It has changed **yet again** because of this new situation – collecting cash payments from customers before delivering anything.

When "Deferred Revenue" (DR) increases, it means that we've collected cash but cannot yet recognize it as revenue, and it boosts our cash balance.

When DR decreases, it means we can finally recognize that cash as revenue because we've **delivered the product or service to customers**. And our cash balance decreases.

Selling Physical Products and Inventory

Next, we decide to expand by selling physical versions of the courses: books, printed guides, and so on.

To do that, we need to buy the supplies and raw materials for those products *before* we sell them.

Even though we have to pay for these supplies in cash, we cannot list them as expenses on the Income Statement until we sell the products.

So our Income Statement doesn't change: Net Income is still $216K.

But our Net Change in Cash declines because of these **Inventory Purchases**, which we've set to $30K here:

Net Income to Cash Adjustments:	Year 1	Year 2
Net Income:	$ 195	$ 216
Change in Accounts Receivable:	-	(50)
Change in Prepaid Expenses:	-	(30)
Change in Inventory:	-	(30)
Change in Accounts Payable:	-	15
Change in Deferred Revenue:	-	15
Net Change in Cash:	**$ 195**	**$ 136**

Because of all these items, there is now a substantial difference between the company's Net Income and the cash it generates.

Since we're **buying Inventory**, we reflect it with a negative; it reduces our cash flow.

If **Inventory decreased**, it would be the opposite scenario: we'd list it under COGS on the Income Statement, along with the revenue from selling the products, and the **Change in Inventory would be positive** in the "Net Income to Cash Adjustments" section.

At this point, you can see why we need separate "financial statements": because MANY items create differences between Net Income and Cash Generated.

So you can't use *just* a simple Income Statement once a company grows beyond a certain complexity level: You have to use two other "financial statements" to track everything.

You use the **Balance Sheet** to track a company's Assets, Liabilities, and Equity. Here's what our simple Balance Sheet looks like so far:

Assets and Liabilities & Equity:	Year 1	Year 2
Assets:		
Cash:	$ 300	$ 436
Accounts Receivable:	-	50
Inventory:	-	30
Prepaid Expenses:	-	30
Total Assets:	**$ 300**	**$ 546**
Liabilities & Equity:		
Accounts Payable:	$ -	$ 15
Deferred Revenue:	-	15
Debt:	-	-
Equity:	300	516
Total Liabilities & Equity:	**$ 300**	**$ 546**

You need this "Balance Sheet" because of items like Accounts Receivable, Inventory, and Prepaid Expenses – items that represent *differences* between Net Income and Cash Generated.

If we *didn't* have any of those items, we could get away with tracking the company's Cash, Debt, and Equity, and **not** create a full Balance Sheet at all.

And then you use the **Cash Flow Statement** to track adjustments to a company's Net Income:

Net Income to Cash Adjustments:	Year 1	Year 2
Net Income:	$ 195	$ 216
Change in Accounts Receivable:	-	(50)
Change in Prepaid Expenses:	-	(30)
Change in Inventory:	-	(30)
Change in Accounts Payable:	-	15
Change in Deferred Revenue:	-	15
Net Change in Cash:	**$ 195**	**$ 136**

Positive adjustments on the Cash Flow Statement mean that we've generated more cash than the company's Net Income suggests.

Negative adjustment means the opposite: we've generated *less* cash than the company's Net Income suggests.

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Key Rule #2: How Longer-Term Items Affect Cash Flow

The section above explains **why** the 3 financial statements – the Income Statement, Balance Sheet, and Cash Flow Statement – are necessary.

But there are many other items that could affect Net Income and Cash Generated.

Here's a summary of the most important ones:

Capital Expenditures and Depreciation

Let's say this company now wants to buy an office, or equipment such as computers for employees.

Since these items are all useful for "the long term" – more than 1 year – you must record them as "Capital Expenditures."

You record Capital Expenditures *only* on the Cash Flow Statement initially, and then you allocate their cost on the Income Statement gradually over time.

For example, if you spend $50K on equipment, and it's expected to last for 5 years, you'll record a cash outflow of $50K on the CFS and "Depreciation" of $10 on the Income Statement each year:

Cash Flow Statement:	Year 1	Year 2
Cash Flow from Operating Activities:		
Net Income:	$ 195	$ 210
Depreciation:	-	10
Change in Operating Assets & Liabilities:		
Change in Accounts Receivable:	-	(50)
Change in Prepaid Expenses:	-	(30)
Change in Inventory:	-	(30)
Change in Accounts Payable:	-	15
Change in Deferred Revenue:	-	15
Cash Flow from Operations:	**$ 195**	**$ 140**
Cash Flow from Investing Activities:		
Capital Expenditures (CapEx):	$ -	$ (50)
Cash Flow from Investing:	**$ -**	**$ (50)**
Cash Flow from Financing Activities:		
Cash Flow from Financing:	$ -	$ -
Net Change in Cash:	**$ 195**	**$ 90**

Income Statement:	Year 1	Year 2
Revenue:	$ 650	$ 700
Cost of Goods Sold (COGS):	70	70
Gross Profit:	**580**	**630**
Gross Margin %:	*89.2%*	*90.0%*
Operating Expenses:		
Sales & Marketing:	150	165
Research & Development:	75	75
General & Administrative:	50	50
Total Operating Expenses:	**275**	**290**
Depreciation:	-	10
Operating Income (EBIT):	**305**	**330**
Operating Margin:	*46.9%*	*47.1%*
Other Income / (Expenses):	20	20
Interest Income / (Expense):	-	-
Pre-Tax Income (EBT):	**325**	**350**
Income Taxes:	(130)	(140)
Net Income (Profit After Taxes):	**$ 195**	**$ 210**
Net Income Margin:	*30.0%*	*30.0%*

Capital Expenditures cause **cash flow to decrease initially**. Net Income also declines because of this Depreciation expense, but Depreciation is recorded only starting in the *first year after the CapEx spending*, so there isn't an "immediate effect."

Also, note that Depreciation is a **non-cash expense**, which is why it's an adjustment on the Cash Flow Statement above. It reduces the company's taxes, but it doesn't *cost the company anything in cash*. As a result, it *increases* the company's cash balance.

Investments and Investing Activities

If a company has extra cash, it may choose to spend it on short-term or long-term investments: anything from government bonds to stocks to real estate.

As with Capital Expenditures, you record the *initial impact* only on the Cash Flow Statement because these items **do not** impact a company's taxes *initially*.

And also as with Capital Expenditures, you will record the *after-effect* of these items – the interest or investment income – on the Income Statement. **That's because the company must pay taxes on the income it earns from these investments.**

Here's what it looks like:

Cash Flow Statement:	Year 1	Year 2
Cash Flow from Operating Activities:		
Net Income:	$ 195	$ 216
Depreciation:	-	10
Change in Operating Assets & Liabilities:		
Change in Accounts Receivable:	-	(50)
Change in Prepaid Expenses:	-	(30)
Change in Inventory:	-	(30)
Change in Accounts Payable:	-	15
Change in Deferred Revenue:	-	15
Cash Flow from Operations:	**$ 195**	**$ 146**
Cash Flow from Investing Activities:		
Capital Expenditures (CapEx):	$ -	$ (50)
Purchases of Short-Term Investment	-	(100)
Purchases of Long-Term Investment	-	(100)
Cash Flow from Investing:	**$ -**	**$ (250)**
Cash Flow from Financing Activities:		
Cash Flow from Financing:	$ -	$ -
Net Change in Cash:	**$ 195**	**$ (104)**

Income Statement:	Year 1	Year 2
Revenue:	$ 650	$ 700
Cost of Goods Sold (COGS):	70	70
Gross Profit:	**580**	**630**
Gross Margin %:	*89.2%*	*90.0%*
Operating Expenses:		
Sales & Marketing:	150	165
Research & Development:	75	75
General & Administrative:	50	50
Total Operating Expenses:	**275**	**290**
Depreciation:	-	10
Operating Income (EBIT):	**305**	**330**
Operating Margin:	*46.9%*	*47.1%*
Other Income / (Expenses):	20	20
Interest Income / (Expense):	-	10
Pre-Tax Income (EBT):	**325**	**360**
Income Taxes:	(130)	(144)
Net Income (Profit After Taxes):	**$ 195**	**$ 216**
Net Income Margin:	*30.0%*	*30.9%*

Purchasing investments initially reduces a company's cash flow, and the "after-effect" on the Income Statement is very small.

But there's one important difference compared with Capital Expenditures: **there's no associated non-cash adjustment here**.

That's because the interest or investment income is earned in cash and incurs cash taxes.

Raising Debt and Equity

We mentioned in the first guide that companies have two basic options for raising money to run and expand their businesses: **debt and equity**.

The trade-offs become clear once you understand how they appear on the financial statements.

When a company raises debt, it shows up *only* on the Cash Flow Statement because it doesn't affect the company's taxes at all. Similarly, when it *repays* debt principal – the outstanding balance – that also shows up only on the Cash Flow Statement.

However, the **interest expense** the company pays on that debt shows up on its Income Statement because the interest expense affects the company's taxes:

Cash Flow Statement:	Year 1	Year 2
Cash Flow from Operating Activities:		
Net Income:	$ 195	$ 198
Depreciation:	-	10
Change in Operating Assets & Liabilities:		
Change in Accounts Receivable:	-	(50)
Change in Prepaid Expenses:	-	(30)
Change in Inventory:	-	(30)
Change in Accounts Payable:	-	15
Change in Deferred Revenue:	-	15
Cash Flow from Operations:	**$ 195**	**$ 128**
Cash Flow from Investing Activities:		
Capital Expenditures (CapEx):	$ -	$ (50)
Purchases of Short-Term Investment	-	(100)
Purchases of Long-Term Investments	-	(100)
Cash Flow from Investing:	**$ -**	**$ (250)**
Cash Flow from Financing Activities:		
Debt Raised:	$ -	$ 300
Debt Principal Repayment:	-	(60)
Cash Flow from Financing:	**$ -**	**$ 240**
Net Change in Cash:	**$ 195**	**$ 118**

Income Statement:	Year 1	Year 2
Revenue:	**$ 650**	**$ 700**
Cost of Goods Sold (COGS):	70	70
Gross Profit:	**580**	**630**
Gross Margin %:	*89.2%*	*90.0%*
Operating Expenses:		
Sales & Marketing:	150	165
Research & Development:	75	75
General & Administrative:	50	50
Total Operating Expenses:	**275**	**290**
Depreciation:	-	10
Operating Income (EBIT):	**305**	**330**
Operating Margin:	*46.9%*	*47.1%*
Other Income / (Expenses):	20	20
Interest Income / (Expense):	-	(20)
Pre-Tax Income (EBT):	**325**	**330**
Income Taxes:	(130)	(132)
Net Income (Profit After Taxes):	**$ 195**	**$ 198**
Net Income Margin:	*30.0%*	*28.3%*

Raising debt **boosts** the company's cash balance. Think about what happens when you take out a **student loan**: you have to repay it *in the future*, but for now, you get more cash to pay for tuition.

When a company raises **equity**, on the other hand, it's shown as a simple cash inflow on the Cash Flow Statement, and nothing *ever* shows up on the Income Statement.

It sounds much better than debt initially, but by doing this, **the company sells part of itself to outsiders**. So raising equity still "costs" the company something; it's just that it's not a direct cash cost like interest on debt is.

For example, perhaps one investor group owns 50% of the company at first. But then the company raises equity, and as a result of new investors coming in, the existing group will own only 45% of the company afterward.

They will **not** be happy about this, and they might push back if the company wants to raise equity.

They could also start making other demands of the company, such as specific financial goals, or other "special favors."

Dividends and Share Repurchases

Speaking of "special favors," equity investors often want to be **paid back**.

They don't receive interest payments like debt investors do, but the company can still pay them in two ways: by issuing **dividends** to the equity investors, and by **repurchasing shares** from them.

Dividends are like "small cash payments" to equity investors. For example, if you purchase a share of a company for $10.00, in the future the company might issue you a dividend of $0.30.

In a **share repurchase**, the company buys back your shares so that you no longer own a percentage of the company. For example, if you bought a share for $10.00, the company might offer to buy it back for $12.00 or $13.00.

Neither dividends nor share repurchases affect a company's taxes, so neither one shows up on a company's Income Statement.

Instead, they both appear as negatives on the Cash Flow Statement and reduce the company's cash flow:

Cash Flow Statement:	Year 1	Year 2
Cash Flow from Operating Activities:		
Net Income:	$ 195	$ 189
Depreciation:	-	10
Deferred Income Taxes:	-	50
(Gains) / Losses:	-	15
Change in Operating Assets & Liabilities:		
Change in Accounts Receivable:	-	(50)
Change in Prepaid Expenses:	-	(30)
Change in Inventory:	-	(30)
Change in Accounts Payable:	-	15
Change in Deferred Revenue:	-	15
Cash Flow from Operations:	**$ 195**	**$ 184**
Cash Flow from Investing Activities:		
Capital Expenditures (CapEx):	$ -	$ (50)
Purchases of Short-Term Investment	-	(100)
Purchases of Long-Term Investments	-	(100)
Proceeds from ST Investment Sales:	-	85
Cash Flow from Investing:	**$ -**	**$ (165)**
Cash Flow from Financing Activities:		
Debt Raised:	$ -	$ 300
Debt Principal Repayment:	-	(60)
Equity Issuance:	-	100
Dividends Issued:	-	(50)
Share Repurchases:	-	(50)
Cash Flow from Financing:	**$ -**	**$ 240**
Net Change in Cash:	**$ 195**	**$ 259**

Income Statement:	Year 1	Year 2
Revenue:	**$ 650**	**$ 700**
Cost of Goods Sold (COGS):	70	70
Gross Profit:	**580**	**630**
Gross Margin %:	*89.2%*	*90.0%*
Operating Expenses:		
Sales & Marketing:	150	165
Research & Development:	75	75
General & Administrative:	50	50
Total Operating Expenses:	**275**	**290**
Depreciation:	-	10
Operating Income (EBIT):	**305**	**330**
Operating Margin:	*46.9%*	*47.1%*
Other Income / (Expenses):	20	20
Interest Income / (Expense):	-	(20)
Gains / (Losses):	-	(15)
Pre-Tax Income (EBT):	**325**	**315**
Income Taxes:	130	126
Current Portion:	130	76
Deferred Portion:	-	50
Net Income (Profit After Taxes):	**$ 195**	**$ 189**
Net Income Margin:	*30.0%*	*27.0%*

There is one important difference between these two methods of paying equity investors: share repurchases **reduce the company's share count** and therefore give more ownership back to the company.

We're not showing the share count in these simple diagrams, but you'd have to show the impact of share repurchases on the share count in real life.

Deferred Taxes

Just like an expense on the Income Statement does *not* necessarily mean the company has paid that expense in cash, the same is true of taxes.

There are almost always "Current" and "Deferred" portions of the Income Taxes on a company's Income Statement.

The company pays the "Current" portion in cash in the period shown, but it "defers" the Deferred portion to some future period.

This deferral happens for many reasons:

- Companies may use different **Depreciation** figures for tax purposes, mostly to reduce their taxes in early years.
- Some expenses **may not be deductible for tax purposes**, even though they're listed on the Income Statement.
- The company might get **tax credits** from its research & development activities.

Deferred Taxes always make the same impact: **You show the entire Income Tax expense on the Income Statement**, but on the Cash Flow Statement, you adjust for the non-cash portion:

Cash Flow Statement:	Year 1	Year 2
Cash Flow from Operating Activities:		
Net Income:	$ 195	$ 189
Depreciation:	-	10
Deferred Income Taxes:	-	50
(Gains) / Losses:	-	15
Change in Operating Assets & Liabilities:		
Change in Accounts Receivable:	-	(50)
Change in Prepaid Expenses:	-	(30)
Change in Inventory:	-	(30)
Change in Accounts Payable:	-	15
Change in Deferred Revenue:	-	15
Cash Flow from Operations:	**$ 195**	**$ 184**
Cash Flow from Investing Activities:		
Capital Expenditures (CapEx):	$ -	$ (50)
Purchases of Short-Term Investment	-	(100)
Purchases of Long-Term Investments	-	(100)
Proceeds from ST Investment Sales:	-	85
Cash Flow from Investing:	**$ -**	**$ (165)**
Cash Flow from Financing Activities:		
Debt Raised:	$ -	$ 300
Debt Principal Repayment:	-	(60)
Equity Issuance:	-	100
Cash Flow from Financing:	**$ -**	**$ 340**
Net Change in Cash:	**$ 195**	**$ 359**

Income Statement:	Year 1	Year 2
Revenue:	**$ 650**	**$ 700**
Cost of Goods Sold (COGS):	70	70
Gross Profit:	**580**	**630**
Gross Margin %:	*89.2%*	*90.0%*
Operating Expenses:		
Sales & Marketing:	150	165
Research & Development:	75	75
General & Administrative:	50	50
Total Operating Expenses:	**275**	**290**
Depreciation:	-	10
Operating Income (EBIT):	**305**	**330**
Operating Margin:	*46.9%*	*47.1%*
Other Income / (Expenses):	20	20
Interest Income / (Expense):	-	(20)
Gains / (Losses):	-	(15)
Pre-Tax Income (EBT):	**325**	**315**
Income Taxes:	130	126
Current Portion:	130	76
Deferred Portion:	-	50
Net Income (Profit After Taxes):	**$ 195**	**$ 189**
Net Income Margin:	*30.0%*	*27.0%*

If the opposite had happened – if the company had *owed* more in taxes than what its Income Statement had implied – then we would have done the opposite and shown the extra cash taxes with a negative next to "Deferred Income Taxes" on the CFS.

Gains, Losses, Impairments, and Write-Downs

Besides raising debt and equity, companies can also raise funds by **selling assets**.

For example, if the company has stock-market investments or physical equipment it doesn't need, and it wants extra cash, it could sell those assets.

Let's say that a company sells a short-term investment for $85.

The $85 does show up on the Cash Flow Statement within the Investing Activities section, but you also have to record a **Gain or Loss**, which shows up on the Income Statement.

If the company sells this item for *less than its book value* – its value on the Balance Sheet – it will record a **Loss**. If it sells this item for *more than its book value*, it will record a **Gain**.

For example, if the investment is listed at $100 on the Balance Sheet and the company sells it for $85, the company will record a Loss on the Income Statement:

Income Statement:	Year 1	Year 2
Revenue:	**$ 650**	**$ 700**
Cost of Goods Sold (COGS):	70	70
Gross Profit:	**580**	**630**
Gross Margin %:	*89.2%*	*90.0%*
Operating Expenses:		
Sales & Marketing:	150	165
Research & Development:	75	75
General & Administrative:	50	50
Total Operating Expenses:	**275**	**290**
Depreciation:	-	10
Operating Income (EBIT):	**305**	**330**
Operating Margin:	*46.9%*	*47.1%*
Other Income / (Expenses):	20	20
Interest Income / (Expense):	-	(20)
Gains / (Losses):	-	(15)
Pre-Tax Income (EBT):	**325**	**315**
Income Taxes:	(130)	(126)
Net Income (Profit After Taxes):	**$ 195**	**$ 189**
Net Income Margin:	*30.0%*	*27.0%*

Cash Flow Statement:	Year 1	Year 2
Cash Flow from Operating Activities:		
Net Income:	$ 195	$ 189
Depreciation:	-	10
(Gains) / Losses:	-	15
Change in Operating Assets & Liabilities:		
Change in Accounts Receivable:	-	(50)
Change in Prepaid Expenses:	-	(30)
Change in Inventory:	-	(30)
Change in Accounts Payable:	-	15
Change in Deferred Revenue:	-	15
Cash Flow from Operations:	**$ 195**	**$ 134**
Cash Flow from Investing Activities:		
Capital Expenditures (CapEx):	$ -	$ (50)
Purchases of Short-Term Investment	-	(100)
Purchases of Long-Term Investments	-	(100)
Proceeds from ST Investment Sales:	-	85
Cash Flow from Investing:	**$ -**	**$ (165)**
Cash Flow from Financing Activities:		
Debt Raised:	$ -	$ 300
Debt Principal Repayment:	-	(60)
Cash Flow from Financing:	**$ -**	**$ 240**
Net Change in Cash:	**$ 195**	**$ 209**

You then have to **reverse this Gain or Loss on the Cash Flow Statement** because it's non-cash.

When the company sells the investment for $85, it gets $85 in cash. It doesn't "lose cash" on the sale – and this is why we reverse the Loss at the top of the Cash Flow Statement.

And then, further down on the CFS, you show the $85 in proceeds within Cash Flow from Investing.

If the company sells the investment for $115 instead, it would get $115 in cash, and we would show a Gain of $15 on the Income Statement.

We would then reverse this Gain on the Cash Flow Statement, subtracting the $15, and show the total proceeds ($115) within Cash Flow from Investing.

Recording Gains and Losses on the Income Statement is just like how **you have to pay taxes on capital gains and how you can deduct capital losses when you sell stocks**.

Besides selling an asset at a different price, a company could also **write down** the value of an asset.

For example, let's say the company buys $100K of equipment, but then there's a natural disaster such as a tornado or hurricane, and some of the equipment is destroyed.

To accurately reflect its financial condition, the company should **NOT** show $100K for the equipment's value on the Balance Sheet anymore.

Instead, it should **write down** the value of the equipment that was destroyed.

This "write-down" is very similar to Depreciation: it's an expense on the Income Statement that reduces the company's Pre-Tax Income and Net Income, you add it back as a non-cash expense on the Cash Flow Statement, and it reduces the company's "Plants, Property & Equipment (PP&E)" on the Balance Sheet.

This write-down *increases* the company's cash balance because of the **tax savings**: it reduces the company's taxes since it's listed on the Income Statement, but the company doesn't pay for the expense in cash.

Income Statement:	Year 1	Year 2
Revenue:	**$ 650**	**$ 700**
Cost of Goods Sold (COGS):	70	70
Gross Profit:	**580**	**630**
Gross Margin %:	*89.2%*	*90.0%*
Operating Expenses:		
Sales & Marketing:	150	165
Research & Development:	75	75
General & Administrative:	50	50
Total Operating Expenses:	**275**	**290**
Depreciation:	-	10
Amortization of Intangible Assets:	-	10
Stock-Based Compensation:	-	20
Operating Income (EBIT):	**305**	**300**
Operating Margin:	*46.9%*	*42.9%*
Other Income / (Expenses):	20	20
Interest Income / (Expense):	-	(20)
Goodwill Impairment:	-	(50)
PP&E Write-Down:	-	(10)
Gains / (Losses):	-	(15)
Pre-Tax Income (EBT):	**325**	**225**
Income Taxes:	130	90
Current Portion:	130	40
Deferred Portion:	-	50
Net Income (Profit After Taxes):	**$ 195**	**$ 135**
Net Income Margin:	*30.0%*	*19.3%*

Cash Flow Statement:	Year 1	Year 2
Cash Flow from Operating Activities:		
Net Income:	$ 195	$ 135
Depreciation:	-	10
Amortization of Intangible Assets:	-	10
Stock-Based Compensation:	-	20
Goodwill Impairment:	-	50
PP&E Write-Down:	-	10
Deferred Income Taxes:	-	50
(Gains) / Losses:	-	15
Change in Operating Assets & Liabilities:		
Change in Accounts Receivable:	-	(50)
Change in Prepaid Expenses:	-	(30)
Change in Inventory:	-	(30)
Change in Accounts Payable:	-	15
Change in Deferred Revenue:	-	15
Cash Flow from Operations:	**$ 195**	**$ 220**
Cash Flow from Investing Activities:		
Capital Expenditures (CapEx):	$ -	$ (50)
Acquisitions:	-	(250)
Purchases of Short-Term Investment	-	(100)
Purchases of Long-Term Investments	-	(100)
Proceeds from ST Investment Sales:	-	85
Cash Flow from Investing:	**$ -**	**$ (415)**
Cash Flow from Financing Activities:		
Debt Raised:	$ -	$ 300
Debt Principal Repayment:	-	(60)
Equity Issuance:	-	100
Dividends Issued:	-	(50)
Share Repurchases:	-	(50)
Cash Flow from Financing:	**$ -**	**$ 240**

But the key difference is that this write-down is a **one-time**, or **non-recurring**, event.

Unlike Depreciation, the company does not expect to keep writing down its assets every year.

Stock-Based Compensation

Companies can pay their employees via salaries and bonuses, but they can also pay employees with **stock** and **stock options**.

For example, if an employee earns $100,000 per year, the company might also grant 1,000 shares of the company's stock to this employee each year as a bonus. Those shares give the employee ownership of a very small percentage of the company.

Stock-based compensation shows up as an expense on the Income Statement and therefore reduces a company's Pre-Tax Income, but just like Depreciation, it is a **non-cash expense** that you add back on the Cash Flow Statement.

So the impact on cash is similar: the company's cash flow goes up because it pays less in taxes.

However, there's a critical difference between stock-based compensation and depreciation: stock-based compensation creates extra shares and dilutes investors.

So if the company had 1 million shares outstanding before the employee award above, afterward it will have 1,001,000 shares outstanding.

In other words, by issuing stock (or options) to employees, **the company is diluting itself**.

Accounting rules require companies to show SBC as a non-cash expense on the Cash Flow Statement.

But because of this dilution, you count it as a REAL cash expense when you estimate a company's cash flows – after all, it reduces the company's value to investors.

Goodwill & Other Intangible Assets

The last two items in this section don't relate to Net Income vs. Cash Generated, exactly, but they are important to know for interviews.

Two assets on companies' Balance Sheets – "Goodwill" and "Other Intangible Assets" – are created *primarily* when one company buys another one.

Start by thinking about a simple question: **If you buy another company, how do you record it on your financial statements?**

The answer is what you might expect: **you combine the financial statements** by *adding* the other company's statements to your own… with a few tweaks.

To keep things simple, let's assume that you pay for this other company 100% in cash and that this other company's Balance Sheet looks like this:

Balance Sheet:		Year 1
Assets:		
Current Assets:		
Cash:	$	100
Total Current Assets:		**100**
Long-Term Assets:		
Property, Plant & Equipment:		30
Total Long-Term Assets:		**30**
Total Assets:	**$**	**130**
Liabilities & Equity:		
Current Liabilities:		
Accounts Payable:	$	30
Total Current Liabilities:		**30**
Long-Term Liabilities:		
Debt:		-
Total Long-Term Liabilities:		**-**
Equity:		**100**
Total Liabilities & Equity:	**$**	**130**

So the owner has contributed some money to start this business, which explains the $100K in Equity, and has also purchased some property and equipment.

Currently, there's very little to this business: sales are minimal, and we want to acquire it mostly to get valuable **intellectual property**.

Even though the Balance Sheet says the company is worth only $100K, the owner won't sell for that amount.

Instead, he demands $250K for the business.

Since we *really* want this other business, we decide to accept his terms and offer $250K for it.

Here's what happens if we pay $250K in cash and combine this other company's Balance Sheet with ours:

Balance Sheets @ Year 2 End:	BIWS	Other Co.	Transaction Adjustments:	Combined:
Assets:				
Total Current Assets:	$ 531	$ 100	$ (250) <--- The cash we offer.	**$ 381**
Total Long-Term Assets:	310	30	-	**340**
Total Assets:	$ 841	$ 130	$ (250)	**$ 721**
Liabilities & Equity:				
Total Current Liabilities:	$ 60	$ 30	$ -	**$ 90**
Total Long-Term Liabilities:	290	-	-	**290**
Equity:	491	100	(100) <--- Gets wiped out!	**491**
Total Liabilities & Equity:	$ 841	$ 130	$ (100)	**$ 871**
BALANCE CHECK:	**OK!**	**OK!**		**($150)**

The Balance Sheet goes out of balance because we paid $250K, but the other company's Equity was worth only $100K.

Do you see the problem?

Whenever we pay more for a company than the Equity on its Balance Sheet says it's worth, the combined Balance Sheet will go out of balance.

That's because the seller's Equity gets wiped out, but we pay **MORE** than this wiped-out Equity.

The solution is to create two new Assets, Goodwill and Other Intangible Assets, to represent the premium we pay for the other company.

Here's what happens when we use those to "plug the gap":

Balance Sheets @ Year 2 End:	BIWS	Other Co.	Transaction Adjustments:	Combined:
Assets:				
Total Current Assets:	$ 531	$ 100	$ (250) <--- The cash we offer.	**$ 381**
Goodwill:	-	-	100	**100**
Other Intangible Assets:	-	-	50	**50**
Total Long-Term Assets:	310	30	-	**340**
Total Assets:	$ 841	$ 130	$ (250)	**$ 871**
Liabilities & Equity:				
Total Current Liabilities:	$ 60	$ 30	$ -	**$ 90**
Total Long-Term Liabilities:	290	-	-	**290**
Equity:	491	100	(100) <--- Gets wiped out!	**491**
Total Liabilities & Equity:	$ 841	$ 130	$ (100)	**$ 871**
BALANCE CHECK:	**OK!**	**OK!**		**OK!**

First, we check to see if the company has "Other Intangible Assets" that might be worth something: patents, trademarks, intellectual property, and customer relationships would all qualify.

An "Intangible Asset" is any asset that's **not** a physical asset and is also **not** a financial instrument.

We look at the company and value its Intangible Assets at $50K (we'd value them by discounting their expected future cash flows to their Present Value).

That's fine, but we still have a gap of $100K:

Purchase Price Allocation:	Year 2
Purchase Price:	**$ 250**
Write-Off of Seller's Equity:	100
Other Intangible Assets:	50
Total Allocation:	**$ 150**
"The Gap":	**$ 100**

To plug this gap, we create another Asset called **Goodwill**. It's equal to the $100K "gap," and it represents the "miscellaneous value" of this premium we just paid.

On the financial statements, Goodwill doesn't do much of anything.

It sits on the company's Balance Sheet, and it might be written down or impaired in the future if the buyer determine that the acquired company wasn't worth so much.

The treatment is the same as the treatment for the PP&E Write-Down above: It's an Income Statement expense that gets added back as a non-cash adjustment on the Cash Flow Statement.

Other Intangible Assets, however, amortize over time.

You create an item called the "Amortization of Intangible Assets" on the Income Statement, and then you add it back as a non-cash charge on the Cash Flow Statement.

It reduces the Intangible Assets on the Balance Sheet each year until they reach $0:

Income Statement:	Year 1	Year 2
Revenue:	$ 650	$ 700
Cost of Goods Sold (COGS):	70	70
Gross Profit:	580	630
Gross Margin %:	*89.2%*	*90.0%*
Operating Expenses:		
Sales & Marketing:	150	165
Research & Development:	75	75
General & Administrative:	50	50
Total Operating Expenses:	275	290
Depreciation:	-	10
Amortization of Intangible Assets:	-	10
Stock-Based Compensation:	-	20
Operating Income (EBIT):	305	300
Operating Margin:	*46.9%*	*42.9%*
Other Income / (Expenses):	20	20
Interest Income / (Expense):	-	(20)
Gains / (Losses):	-	(15)
Pre-Tax Income (EBT):	325	285
Income Taxes:	130	114
Current Portion:	130	64
Deferred Portion:	-	50
Net Income (Profit After Taxes):	$ 195	$ 171
Net Income Margin:	*30.0%*	*24.4%*

Balance Sheet:	Year 1	Year 2
Assets:		
Current Assets:		
Cash:	$ 300	$ 421
Short-Term Investments:	-	-
Accounts Receivable:	-	50
Inventory:	-	30
Prepaid Expenses:	-	30
Total Current Assets:	300	531
Long-Term Assets:		
Property, Plant & Equipment:	-	70
Goodwill:	-	100
Other Intangible Assets:	-	40
Long-Term Investments:	-	100
Total Long-Term Assets:	-	310
Total Assets:	$ 300	$ 841
Liabilities & Equity:		
Current Liabilities:		
Accounts Payable:	$ -	$ 45
Deferred Revenue:	-	15
Total Current Liabilities:	-	60
Long-Term Liabilities:		
Debt:	-	240
Deferred Tax Liability:	-	50
Total Long-Term Liabilities:	-	290
Equity:	300	491

Cash Flow Statement:	Year 1	Year 2
Cash Flow from Operating Activities:		
Net Income:	$ 195	$ 171
Depreciation:	-	10
Amortization of Intangible Assets:	-	10
Stock-Based Compensation:	-	20
Deferred Income Taxes:	-	50
(Gains) / Losses:	-	15
Change in Operating Assets & Liabilities:		
Change in Accounts Receivable:	-	(50)
Change in Prepaid Expenses:	-	(30)
Change in Inventory:	-	(30)
Change in Accounts Payable:	-	15
Change in Deferred Revenue:	-	15
Cash Flow from Operations:	$ 195	$ 196
Cash Flow from Investing Activities:		
Capital Expenditures (CapEx):	$ -	$ (50)
Acquisitions:	-	(250)
Purchases of Short-Term Investment	-	(100)
Purchases of Long-Term Investments	-	(100)
Proceeds from ST Investment Sales:	-	85
Cash Flow from Investing:	$ -	$ (415)
Cash Flow from Financing Activities:		
Debt Raised:	$ -	$ 300
Debt Principal Repayment:	-	(60)
Equity Issuance:	-	100
Dividends Issued:	-	(50)
Share Repurchases:	-	(50)
Cash Flow from Financing:	$ -	$ 240

The exact impact of an acquisition is complex and can't be summed up in a simple rule.

However, the **Amortization of Intangibles** makes the same impact as Depreciation: the company's Net Income falls, but its cash flow increases because of the tax savings.

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