# IB Interview Guide, Module 4: Accounting and the 3 Financial Statements

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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**

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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.

Return to Top.

## Key Rule #3: The Income Statement

The **Income Statement** lists a company's revenue, expenses, and taxes, with its after-tax profit at the very bottom, over a period (one quarter, one month, or one year).

To appear on the Income Statement, each item must meet the following criteria:

1. **It must correspond to ONLY the period shown on the Income Statement**. If you're paying for an asset that will last for 10-20 years, the initial money spent would not appear on a 1-year Income Statement. But your monthly rent *would* appear.

2. **It must affect the company's taxes.** For example, interest paid on debt is tax-deductible, so it appears on the Income Statement. But repaying debt principal is not tax-deductible, so it does not appear on the Income Statement.

To the right, you can see a screenshot demonstrating common items on the Income Statement.

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

**Revenue and Cost of Goods Sold (COGS):** Revenue is the value of the products/services that a company sells in the period, and COGS represents the expenses that are linked *directly* to the sale of those products/services.

For example, if each widget you sell costs $10 to order and ship, $10 * # Widgets Sold would show up within COGS.

**Operating Expenses:** Costs that are not directly linked to individual products sold – employee salaries, rent, marketing, and research and development – show up here.

**Depreciation and Amortization (D&A):** These items are non-cash expenses related to allocating *capital purchases*, such as spending on factories or equipment or patents or anything else that lasts over 1 year, over time.

These items will be useful for many years, so you have to allocate the initial amount spent over many years rather than showing the entire amount on the Income Statement.

In real life, Depreciation and Amortization are often **embedded** within COGS or Operating Expenses. We show them separately for clarity, but they'll *rarely* be separate in real life.

When D&A is embedded within other line items, you have to look at the **Cash Flow Statement** to get the total number.

**Stock-Based Compensation:** This represents the cost of paying employees with stock or stock options rather than cash. Companies estimate the value of these awards, and then record their estimates on the Income Statement.

Like D&A, this is almost **never** shown separately in real life; it's almost always embedded within the company's Operating Expenses.

**Other Income and Expenses:** Items such as Interest Income, Interest Expense, Gains and Losses, Write-Downs, and Impairments show up here.

If a company has any "side activities" that aren't part of its core business, income from those activities will also show up here.

**Everything in this section impacts a company's taxes and represents SOMETHING in the current period, but these items are NOT a part of the company's core business of selling products/services**.

Some of these items – Gains and Losses, Write-Downs, and Impairments – are **non-cash**, which means they reduce a company's taxes but don't result in a cash payment.

**Taxes and Net Income:** Net Income represents the company's "bottom line" – how much in after-tax profits it has earned.

As we described above, Income Taxes are split into Current and Deferred. In real life, it is *very* rare to see the actual split on the Income Statement, but we have shown it for clarity.

A few other points on Income Statement revenue, expenses, and taxes:

1. **They do not need to be related to a company's operational activities** – Gains and Losses and Interest Expense all appear, but they are not related to selling products to customers.

2. **They do not need to be cash expenses or cash revenue** – For example, Depreciation and Amortization are both non-cash expenses. Also, companies often record revenue and expenses here before they receive or pay them in cash, which is the whole reason *why* the 3 financial statements exist in the first place.

3. **Sometimes, items may be embedded within other items** – For example, Depreciation is often embedded within COGS or Operating Expenses; other times it is a separate item, either wholly or partially. Stock-Based Compensation is almost always embedded within Operating Expenses.

Here are a few more rules of thumb about what appears on the Income Statement:

- **Always Appears:** Revenue, COGS, Operating Expenses, Depreciation, Amortization, Stock-Based Compensation, Interest Income and Expense, Gains / (Losses), Write-Downs, Impairments, Other Income / (Expenses), Taxes, and Net Income.

- **Never Appears:** Capital Expenditures, Purchasing or Selling Investments or PP&E (Plants, Property & Equipment), Dividends, Issuing or Repaying Debt Principal, Issuing or Repurchasing Shares, and Changes to Balance Sheet Items such as Cash, Debt, Accounts Receivable, or Accounts Payable.

The items on the "Always Appears" list meet the criteria above because:

1. **They affect the company's taxes** (e.g., paying an employee's salary reduces the company's taxable income); and

2. **They correspond to the period shown on the Income Statement** (e.g., monthly rent corresponds only to what you're incurring *in that month*).

The items on the "Never Appears" list fail the criteria above because:

1. **They do not affect the company's taxes** (e.g., Dividends are not tax-deductible, and neither is repaying debt); or

2. **They do not correspond to the period shown on the Income Statement** (e.g., Capital Expenditures refers to purchasing Assets that often last for 10-20 years).

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**Key Rule #4: The Balance Sheet**

The **Balance Sheet** shows the company's **resources** – its Assets – and how it **paid for** those resources – its Liabilities & Equity – at a specific point in time.

Think about your personal Balance Sheet: maybe you've invested $50K in the stock market, you have $30K in cash in your bank account, and you own a house that's worth $500K.

**Those are Assets because they can all be sold for cash, or they'll deliver a cash benefit to you in the future.**

How did you pay for the cash, your house, and your investments?

First, you **saved up money** from your job. For example, maybe you've saved $200K, cumulatively, after taxes, over many years.

You also **borrowed money** – the mortgage on your house, which is worth $380K – to pay for some of it.

So, your "personal Balance Sheet" might look like this:

| Personal Balance Sheet: | | | |
|---|---|---|---|
| **Assets:** | | | |
| **Current Assets:** | | | |
| Cash: | $ | 30 | <-- Cash in your checking account. |
| **Total Current Assets:** | | **30** | |
| **Long-Term Assets:** | | | |
| House: | | 500 | <-- What you paid for that house when you first bought it. |
| Stock Market Investments: | | 50 | <-- What it sounds like; could also be "short-term." |
| **Total Long-Term Assets:** | | **550** | |
| **Total Assets:** | **$** | **580** | |
| **Liabilities & Equity:** | | | |
| **Current Liabilities:** | | | |
| Credit Card Debt: | $ | - | <-- You're smart and have no credit card debt! |
| **Total Current Liabilities:** | | **-** | |
| **Long-Term Liabilities:** | | | |
| Home Mortgage: | | 380 | <-- But you did borrow to buy that house. |
| **Total Long-Term Liabilities:** | | **380** | |
| **Equity:** | **$** | **200** | <-- Saved-up, after-tax earnings from your job. |
| **Total Liabilities & Equity:** | **$** | **580** | |
| **BALANCE CHECK:** | | **OK!** | |

These MUST equal each other; if you have $580K in resources, you must have gotten the money from somewhere.

Here are the key Balance Sheet rules:

**1. The Balance Sheet shows the company's resources (its Assets) and how it paid for those resources – its Liabilities & Equity – at a specific point in time.**

So, the Income Statement shows revenue and expenses **from** January 1, 20XX **to** December 31, 20XX, but the Balance Sheet only shows the company's resources **ON** January 1, 20XX or **ON** December 31, 20XX.

**2. Assets must always equal Liabilities + Equity – if the Balance Sheet does not balance, it's wrong.**

If you want a house – an asset – that costs $1 million, could you use a $380K mortgage and $200K in saved-up income to pay for it?

No! The Balance Sheet would go out of balance!

You'd have to **borrow or save more**.

So, you either take out a mortgage for $800K, or you wait and save up an additional $620K.

**3. An Asset is something that will result in, directly or indirectly, additional cash in the future, or is something that can be sold for cash.**

You typically split Assets into "Current" or "Short-Term" (anything that lasts for less than 1 year) and "Non-Current" or "Long-Term" (anything that lasts for more than 1 year).

**4. A Liability is something that will result in, directly or indirectly, less cash in the future.**

Again, you typically split these into "Current" or "Short-Term" and then "Non-Current" or "Long-Term."

Liabilities are usually related to **external parties** – lenders, suppliers, or the government.

**5. An "Equity" line item is a funding source, like a Liability, but it will not result in less cash in the future.**

Like Liabilities, the items in the "Equity" category are also funding sources.

*Unlike* Liabilities, the Equity line items *don't* necessarily result in less cash in the future.

They also tend to relate more to the company's *internal operations* and how it's saving money over time, whereas Liabilities relate more to *external parties* such as lenders.

Below, you'll see a typical Balance Sheet, along with explanations of how each item meets the definition of an Asset, a Liability, or an Equity line item:

| Balance Sheet: | | | How Does This Item Satisfy the Definitions of Assets, Liabilities, and Equity? |
|---|---|---|---|
| **Assets:** | **Start of Period** | **End of Period** | |
| **Current Assets:** | | | **Assets - Generate cash or can be sold for cash.** |
| Cash: | $ 300 | $ 610 | |
| Short-Term Investments: | - | - | Earn interest - more cash - or can be sold for cash. |
| Accounts Receivable: | - | 50 | Will get more cash from customers eventually. |
| Inventory: | - | 30 | Will turn into products and sell for cash. |
| Prepaid Expenses: | - | 30 | Will reduce taxes in the future, saving us cash. |
| **Total Current Assets:** | **300** | **720** | |
| **Long-Term Assets:** | | | |
| Property, Plant & Equipment: | - | 30 | Can be used to manufacture goods, producing cash. |
| Goodwill: | 100 | 50 | Possible future synergies will produce more cash. |
| Other Intangible Assets: | 50 | 40 | Customer relationships, brand, etc. result in more sales. |
| Long-Term Investments: | - | 100 | Earn interest - more cash - or can be sold for cash. |
| **Total Long-Term Assets:** | **150** | **220** | |
| **Total Assets:** | **$ 450** | **$ 940** | |
| **Liabilities & Equity:** | | | **Liabilities - Will cost the company cash.** |
| **Current Liabilities:** | | | |
| Accounts Payable: | $ - | $ 15 | Recorded the expense, but must pay **CASH** in the future! |
| Accrued Expenses: | - | 10 | Recorded the expense, but must pay **CASH** in the future! |
| Deferred Revenue: | - | 15 | Must pay expenses and taxes on this revenue in the futur |
| **Total Current Liabilities:** | - | **40** | |
| **Long-Term Liabilities:** | | | |
| Debt: | - | 240 | Must pay interest and repay debt principal. |
| Deferred Tax Liability: | - | 50 | Must pay higher cash taxes in the future. |
| **Total Long-Term Liabilities:** | - | **290** | |
| **Equity:** | | | **Equity - Funding, but no cash cost.** |
| Common Stock & Additional Paid-In Capit | 50 | 170 | Stock issued to others to fund the business. |
| Retained Earnings: | 400 | 485 | "Saved up, after-tax earnings" - add NI, subtract Dividends |
| Treasury Stock: | - | (50) | Always record repurchases as a negative. |
| Accumulated Other Comprehensive Incor | - | 5 | FX rate effects, unrealized gains/losses, misc. items. |
| **Total Equity:** | **$ 450** | **$ 610** | |
| **Total Liabilities & Equity:** | **$ 450** | **$ 940** | |
| **BALANCE CHECK:** | **OK!** | **OK!** | |

### Definitions of Key Assets:

- **Cash:** Just like cash in your bank account.
- **Short-Term Investments:** Anything that generates some interest income and is less liquid than cash – a money-market account, for example.

- **Accounts Receivable:** The company has recorded this as revenue on its Income Statement but hasn't received it in cash yet. It's like an "IOU" from a customer. And it will turn into cash when the customer pays.

- **Inventory:** The physical parts and supplies that the company needs to manufacture and sell products.

- **Prepaid Expense:** The company has paid these expenses in cash but hasn't recorded them as expenses on the Income Statement yet because they haven't been incurred.

The most common Long-Term Assets include:

- **Property, Plant & Equipment (PP&E):** Factories, buildings, land, and equipment that will be useful for more than a year and contribute to the company's core business.

- **Goodwill:** The cumulative premiums that the company has paid over other companies' Shareholders' Equity when acquiring them.

- **Other Intangible Assets**: The cumulative values of patents, trademarks, and intellectual property from acquired companies. Unlike Goodwill, this balance amortizes over time because these items have fixed useful lives.

- **Long-Term Investments:** These also generate interest or investment income, but are less liquid and longer-lasting than Cash or Short-Term Investments.

**Definitions of Key Liabilities:**

- **Short-Term Debt or "Revolver":** Borrowing that incurs interest expense and that is owed back in less than a year. It's sort of like a credit card because it represents short-term borrowing.

- **Accounts Payable:** The company has recorded these as expenses on the Income Statement, but hasn't yet paid them in cash – it's used for one-time items with specific invoices, such as legal services.

- **Accrued Expenses:** The company has recorded these as expenses on the Income Statement, but hasn't yet paid them in cash – it's used for recurring monthly items without invoices, such as employee wages, utilities, and rent.

- **Deferred Revenue:** The company has collected cash in advance from customers for products/services that it has not yet delivered. It will recognize Deferred Revenue as real revenue over time as it delivers the products/services.

The most common Long-Term Liabilities include:

- **Deferred Tax Liability:** This represents a **timing difference** in taxes. For some reason, the company paid less in taxes than what it owed in some earlier period, and it must make up the difference by paying more to the government in the future.

- **Long-Term Debt:** Similar to a mortgage, a car loan, or a student loan: debt that must be repaid in over a year's time.

**Definitions of Key Equity Line Items:**

- **Common Stock & Additional Paid-In Capital (APIC**): This item represents the market value of shares **at the time the company issued those shares**. When a company goes public, the total dollar value of shares issued shows up here. This does **NOT** change even if the share price changes afterward. Non-U.S.-based companies call these items "Share Capital" and "Share Premium."

- **Retained Earnings:** This item represents the company's saved-up, after-tax profits, minus any dividends it has issued. This item is like the $200K you saved up, after taxes, in the "personal Balance Sheet" example above.

- **Treasury Stock:** This item represents the cumulative value of shares the company has repurchased from shareholders. Just like Common Stock & APIC, the values here are based on the share prices **at the time the company repurchased the shares**. This value does **NOT** change even if the company's share price changes afterward.

- **Accumulated Other Comprehensive Income (AOCI):** This is a section for "miscellaneous saved-up income" – items like the effect of foreign currency exchange rate changes go here, as well as "unrealized" gains and losses on certain types of securities.

A few extra notes on this section:

With Common Stock & APIC, let's say a company issues 100 million shares. The par value of each share is $1.00, and the market value of each share is $10.00.

Common Stock would increase by 100 million * $1.00, or $100 million.

APIC would increase by 100 million * ($10.00 – $1.00), or $900 million.

**If the company's share price now goes from $10.00 to $25.00 or $100.00 or $1.00, COMMON STOCK AND APIC DO NOT CHANGE.**

We almost always combine these items into a single line item – Common Stock & APIC – to streamline models.

With Treasury Stock, let's say the company repurchases $500 million in shares at a price of $50.00 per share.

You'd record that as a negative $500 million on the Cash Flow Statement and *reduce* Treasury Stock by $500 million, **making it even more negative**.

If the share price then goes from $50.00 to $100.00 or $1.00, **Treasury Stock does not change**.

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**Key Rule #5: Cash Flow Statement**

The **Cash Flow Statement**, like the Income Statement, tracks **changes over a period** (one year, quarter, month, etc.).

It exists for 2 main reasons:

1) **You may have recorded non-cash revenue, expenses, or taxes on the Income Statement**. If you did, then you need to make an adjustment on the Cash Flow Statement to reflect this.

   Remember, these cash/non-cash differences are the whole reason *why* the 3 financial statements exist in the first place!

2) **There may be additional cash inflows and outflows that have NOT appeared on the Income Statement**. For example, Capital Expenditures and Dividends both impact a company's cash balance, but neither one appears on the Income Statement.

Here's what a typical Cash Flow Statement looks like, along with a summary of each section:

**Cash Flow from Operations (CFO)** – Starts with Net Income at the top, adjusts for non-cash items, and then factors in how *operational* Balance Sheet items change in that period.

**Rough Proxy:** Corresponds to Current Assets and Current Liabilities… but that's not exactly true, since cash, investments, and debt do **NOT** show up here, whereas some longer-term items such as Deferred Revenue do.

So, it's **better** to think of this section as: "Net Income, non-cash adjustments, and operational Balance Sheet items."

**Cash Flow from Investing (CFI)** – Anything related to the company's investments, acquisitions, and PP&E shows up here.

Purchases are negative because they use up cash, and sales are positive because they result in more cash.

**Rough Proxy:** Corresponds to Long-Term Assets… but that's not exactly true since investments within Current Assets can also show up here.

**Cash Flow from Financing (CFF)** – Items related to debt, dividends, and issuing or repurchasing shares show up here.

**Rough Proxy:** Corresponds to Long-Term Liabilities and Equity… but this is also not exactly true!

For example, items like Deferred Tax Liabilities are impacted by adjustments in the CFO section.

| Cash Flow Statement: | | |
|---|---|---|
| **Cash Flow from Operating Activities:** | | |
| Net Income: | $ | 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 on Investment Sales | | 15 |
| **Change in Operating Assets & Liabilities:** | | |
| Change in Accounts Receivable: | | (50) |
| Change in Inventory: | | (30) |
| Change in Prepaid Expenses: | | (30) |
| Change in Accounts Payable: | | 15 |
| Change in Accrued Expenses: | | 10 |
| Change in Deferred Revenue: | | 15 |
| **Cash Flow from Operations:** | **$** | **230** |
| **Cash Flow from Investing Activities:** | | |
| Capital Expenditures (CapEx): | $ | (50) |
| Purchases of Short-Term Investment | | (100) |
| Purchases of Long-Term Investment | | (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:** | **$** | **240** |
| **FX Rate Effects:** | | 5 |
| **Net Change in Cash:** | **$** | **310** |
| **Beginning Cash Balance:** | **$** | **300** |
| **Ending Cash Balance:** | **$** | **610** |

Meanwhile, Common Stock & APIC, for example, is impacted not just by the equity issuances shown here, but also by Stock-Based Compensation in the CFO section.

These rough proxies are useful for figuring out where *most* items go, but remember that there are always exceptions and that companies' financial statements vary **TREMENDOUSLY**.

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**Key Rule #6: How to Link the Financial Statements**

We cover this topic in more detail in the sections on how to **project the financial statements**, but it's helpful to understand these links for interview questions as well.

So, we'll lay out the principles and then explain the step-by-step process.

**Principle #1: Each item on the Balance Sheet must have a corresponding line item on the Cash Flow Statement, and vice versa.**

The change in each item on the Balance Sheet must be reflected **once and only once** on the Cash Flow Statement.

When an Asset goes up, cash flow goes down, and when a Liability goes up, cash flow goes up, and vice versa.

Think about what it means when an Asset like Inventory "goes up": **it means the company spent cash to acquire more Inventory.**

And then think about what it means when a Liability like Accounts Payable "goes up": **it means the company has delayed cash payment, resulting in more cash.**

**Principle #2: The CFO section of the Cash Flow Statement is derived from the Income Statement and operational items on the Balance Sheet, and the CFI and CFF sections are projected directly on the CFS and then flow into the Balance Sheet.**

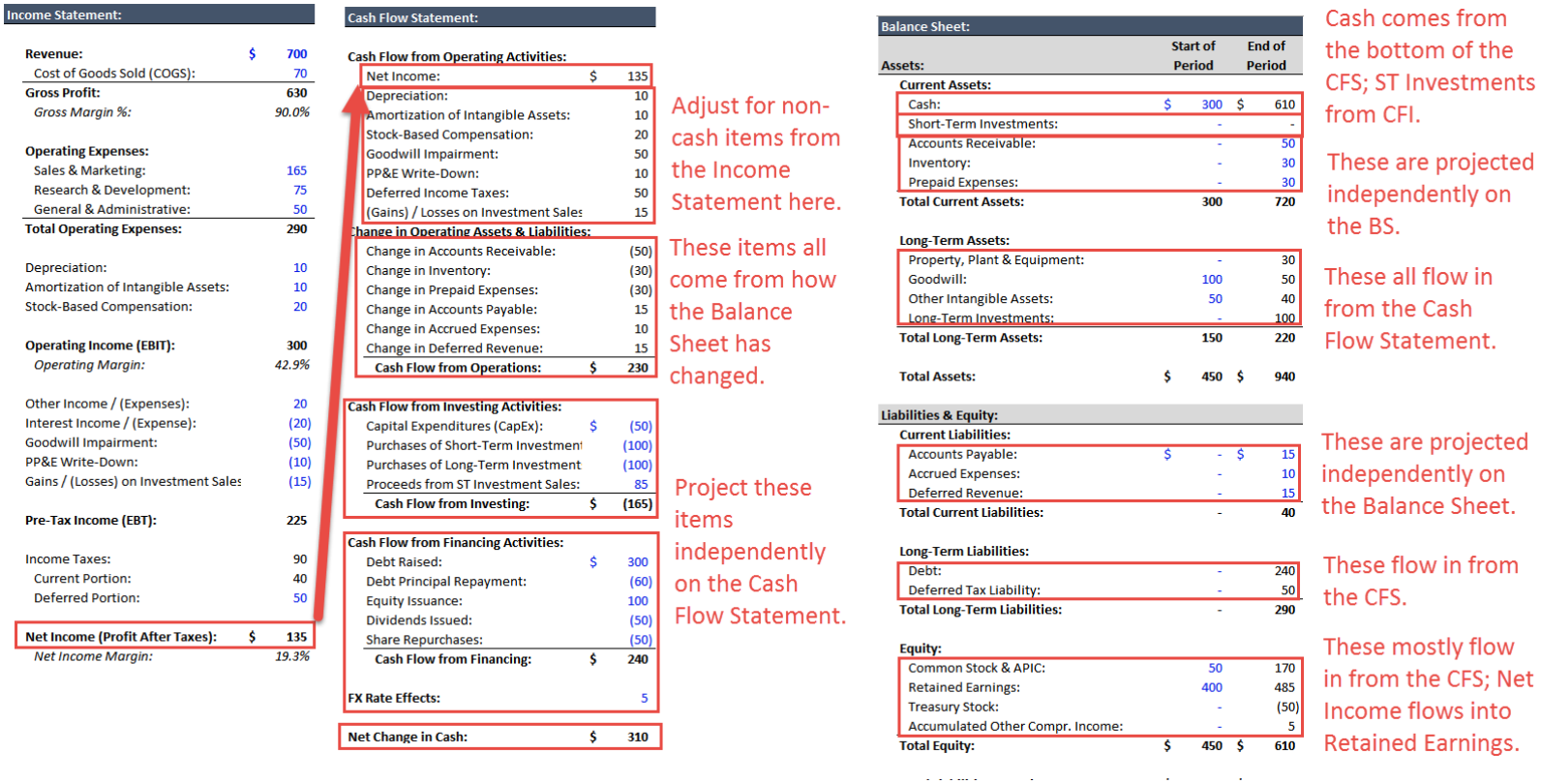
So, you don't "project" items like the Change in Accounts Receivable directly on the Cash Flow Statement. Instead, these items are based on how the company's Balance Sheet has changed over time.

**Principle #3: When you're linking in items from the Cash Flow Statement to the Balance Sheet, SUBTRACT when you're on the Assets side and ADD when you're on the Liabilities & Equity side.**

Here are a few examples:

- **PP&E** – **Subtract** both Depreciation and CapEx when you link them to the PP&E on the Balance Sheet.
- **Debt** – **Add** both debt issuances and repayments when you link them to Debt.
- **Investments** – **Subtract** Gains and Losses, purchases, and proceeds from sales.

Here's a diagram for the process of linking the statements:




And here's the step-by-step process:

**1) Project the entire Income Statement first and link in Net Income at the top of the CFS**.

Link Net Income from the Income Statement in as the top line of the Cash Flow Statement.

**2) Adjust for Non-Cash Items on the Income Statement**.

For example, you'd make positive adjustments for Depreciation & Amortization, Stock-Based Compensation, Impairments, and Write-Downs because they're all non-cash expenses.

Items like Gains and Losses and Deferred Taxes might have either positive or negative signs.

**3) Project the items in CFI and CFF separately**.

You have to forecast the company's CapEx and investing activities, and what it plans to do with equity and debt issuances, share repurchases, and so on.

FX Rate Effects, if they exist, also fall into the "separate and independent" category.

**4) Sum up all the sections to calculate the Net Change in Cash**.

Add up CFO, CFI, CFF, and FX Rate Effects to calculate the Net Change in Cash at the bottom.

**5) Link Net Income and the Net Change in Cash to the Balance Sheet**.

Cash at the bottom of the Cash Flow Statement flows into Cash on the Balance Sheet, and Net Income at the top of the CFS flows into Retained Earnings.

**6) Link each Non-Cash Adjustment to the appropriate line item**.

For example, link Depreciation to PP&E and the Amortization of Intangibles to Other Intangible Assets.

On the **ASSETS side**, you **subtract** links, and on the **LIABILITIES & EQUITY side**, you **add** links.

**7) Link each CFI and CFF item to the appropriate line item on the Balance Sheet**.

You link many CFI items to Long-Term Assets, and you link many CFF items to Long-Term Liabilities and Equity.

For example, you link CapEx under CFI to PP&E and you link Share Repurchases under CFF to Treasury Stock.

On the **ASSETS side**, you **subtract** links, and on the **LIABILITIES & EQUITY side**, you **add** links.

**8) Check that the Balance Sheet balances**.

If it does not, review the line items on the BS and CFS and check that they satisfy all the principles above.

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**Key Rule #7: U.S. GAAP vs. IFRS and Different Financial Statements**

So far, we have assumed that any company's financial statements are similar to those of U.S.-based companies.

However, there are many different accounting systems worldwide, and not all companies present their financial statements in the same way.

**The core concepts are the same**. Companies in all countries and industries create the Income Statement, Balance Sheet, and Cash Flow Statement to record their activities.

And the financial statements exist for the same basic reason: there's a difference between Net Income and Cash Generated.

The *names* of the statements may differ: For example, the Income Statement might be called the "Consolidated Statement of Earnings" or the "Profit & Loss Statement," and the Balance Sheet might be called the "Statement of Financial Position."

**However, the MAIN difference, by far, is that companies outside the U.S. tend to use the DIRECT METHOD to create the Cash Flow Statement rather than the INDIRECT METHOD**.

With the Direct Method, companies record the *actual cash received from customers* and *cash paid out*.

So, the Cash Flow Statement does **NOT** start with Net Income and then make adjustments for other items.

Instead, it might start with "Cash Received" or "Cash Paid" and then list other items such as Interest and Taxes separately.

Here's an example of a Cash Flow Statement for a non-U.S.-based company:

| Cash Flow Statement: | | |
|---|---|---|
| **Cash Flow from Operating Activities:** | | |
| Cash Generated from Operations: | £ | 788 |
| Ordinary Dividends Paid: | | (85) |
| Special Dividends Paid: | | - |
| Net Interest and Financing Charges: | | (22) |
| Taxes Paid: | | (65) |
| **Cash Flow from Operations:** | **£** | **616** |
| **Cash Flow from Investing Activities:** | | |
| Purchase of PP&E: | -£ | 400 |
| Proceeds from Sale of PP&E: | | 1 |
| Purchases of Intangible Assets: | | (21) |
| Redemption of Loan Notes: | | 4 |
| **Cash Flow from Investing:** | **-£** | **416** |
| **Cash Flow from Financing Activities:** | | |
| Net Proceeds from Share Capital: | £ | 1 |
| Share Repurchases: | | (26) |
| Repayment of Bank Loans: | | (273) |
| Repayment of Finance Leases: | | (10) |
| Aircraft Sale and Leaseback Proceed | | 316 |
| Net Decrease in Money Market Depo | | 41 |
| Change in Restricted Cash: | | 148 |
| **Cash Flow from Financing:** | **£** | **197** |
| **FX Rate Effects:** | | (29) |
| **Net Change in Cash:** | **£** | **368** |
| **Beginning Cash Balance:** | **£** | **645** |
| **Ending Cash Balance:** | **£** | **1,013** |

**This statement is quite problematic for several reasons**.

First off, it's almost impossible to link this to the Balance Sheet since items like AR and AP are not shown.

Second, "Cash Generated from Operations" doesn't match any item on the Income Statement.

Third, Dividends are listed in Cash Flow from Operating Activities, but they are financing-related.

Finally, Interest and Taxes should be on the Income Statement. If a non-cash adjustment is required, the adjustment can be shown on the CFS.

The Cash Flow from Investing and Financing sections are mostly OK, so we don't need to adjust much there.

**When you encounter this type of Cash Flow Statement, you need to find a reconciliation between "Cash Generated from Operations" and Net Income or Operating Income, and then change around the Cash Flow Statement.**

Here's an example for this company:

| Reconciliation of Operating Profit to Cash Generated from Operations: | | |
|---|---|---|
| Operating Profit: | £ | 497 |
| **Adjustments for Non-Cash Items:** | | |
| Depreciation: | | 102 |
| Loss on Disposal of PP&E: | | - |
| Amortization of Intangible Assets: | | 10 |
| Stock-Based Compensation: | | 18 |
| **Changes in Working Capital and Other Operational Items:** | | |
| Change in Accounts Receivable: | | 74 |
| Change in Accounts Payable: | | 64 |
| Change in Provisions: | | 29 |
| Change in Other Non-Current Assets: | | 8 |
| Change in Derivative Financial Instruments: | | - |
| Change in Deferred Revenue: | | (14) |
| **Cash Generated from Operations:** | **£** | **788** |

The company is still doing things a bit differently because these items are based on adjustments to *Operating Income*, not Net Income, but it's good enough.

They're giving us the non-cash adjustments and changes in operational Balance Sheet items, which is all we need.

At this point, we would take this information and change the company's Cash Flow Statement so that it looks something like this:

This version of the Cash Flow Statement is much easier to work with because it **starts with Net Income.**

Then, it makes the standard non-cash adjustments, including a few items related to Deferred Taxes and Interest (some interest can be non-cash as well).

Then it shows the changes in the operational Balance Sheet items, like Accounts Receivable and Accounts Payable.

We didn't change much in the Investing Activities and Financing Activities sections, but we did move the Dividends down to Cash Flow from Financing instead.

**We *always* prefer to make these adjustments when we work with companies that use the Direct Method on their Cash Flow Statements**.

All the interview questions and remaining sections of this guide will assume this treatment as well.

This Cash Flow Statement setup makes it much easier to walk through interview questions, and bankers also expect you to use this setup when you explain these questions.

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| Cash Flow Statement: | | |
|---|---|---|
| **Cash Flow from Operating Activities:** | | |
| Net Income: | £ | 398 |
| **Adjustments for Non-Cash Items:** | | |
| Depreciation: | | 102 |
| Loss on Disposal of PP&E: | | - |
| Amortization of Intangible Assets: | | 10 |
| Stock-Based Compensation: | | 18 |
| Deferred Income Taxes: | | 15 |
| Additional Cash Interest Paid: | | (3) |
| **Changes in Working Capital and Other Operational Items:** | | |
| Change in Accounts Receivable: | | 74 |
| Change in Accounts Payable: | | 64 |
| Change in Provisions: | | 29 |
| Change in Other Non-Current Assets | | 8 |
| Change in Derivative Financial Instru | | - |
| Change in Deferred Revenue: | | (14) |
| **Cash Generated from Operations:** | **£** | **701** |
| **Cash Flow from Investing Activities:** | | |
| Purchase of PP&E: | -£ | 400 |
| Proceeds from Sale of PP&E: | | 1 |
| Purchases of Intangible Assets: | | (21) |
| Redemption of Loan Notes: | | 4 |
| **Cash Flow from Investing:** | **-£** | **416** |
| **Cash Flow from Financing Activities:** | | |
| Net Proceeds from Share Capital: | £ | 1 |
| Share Repurchases: | | (26) |
| Dividends: | | (85) |
| Repayment of Bank Loans: | | (273) |
| Repayment of Finance Leases: | | (10) |
| Aircraft Sale and Leaseback Proceed | | 316 |
| Change in Money Market Deposits: | | 41 |
| Change in Restricted Cash: | | 148 |
| **Cash Flow from Financing:** | **£** | **112** |
| **FX Rate Effects:** | | (29) |
| **Net Change in Cash:** | **£** | **368** |
| **Beginning Cash Balance:** | **£** | **645** |
| **Ending Cash Balance:** | **£** | **1,013** |

**Key Rule #8: How to Walk Through Accounting Interview Questions**

Some of *the* most common interview questions are the ones about how a change affects the 3 financial statements.

For example:

- "Depreciation goes up by $10. What happens on the statements?"
- "A company buys $100 of Inventory. What happens on the statements?"
- "A company sells a factory that's worth $100 on its Balance Sheet for $120. What happens on the statements?"

**For all these questions, you should look at our 3-statement "interview question" model.**

The best way to understand these changes is to enter them in Excel and see firsthand how the statements change.

With that said, we also wanted to give you **rules of thumb** you can use for the **5 major categories of changes**:

1. Changes to True Cash Items on the Income Statement.
2. Changes to Non-Cash or Re-Classified Items on the Income Statement.
3. Changes to Operational Items on the Balance Sheet.
4. Changes to Non-Operational Balance Sheet Items or Cash Flow Statement Items.
5. Multi-Step Scenarios and Changes on the Financial Statements.

In the sections below, we'll explain each category using screenshots and examples.

We recommend going in this order when answering these questions:

1. Explain how the Income Statement changes, if at all.
2. Explain how the Cash Flow Statement changes, if at all.
3. Explain how the Balance Sheet changes and why it still balances, i.e. why Assets still equal Liabilities + Equity.

**1) Changes to True Cash Items on the Income Statement**

For example, what happens if a company's **revenue** increases by $100, or its COGS or Operating Expenses increases by $100?

This category is **easy** because you don't have to modify anything on the Cash Flow Statement.

All that happens is that revenue or expenses on the Income Statement change, Net Income changes, and Cash and Retained Earnings on the Balance Sheet change.

Here's an example of what happens when revenue increases by $100:

| Income Statement | Current Period: Before Changes: | After Changes: |
|---|---|---|
| **Revenue:** | $ 1,300 | $ 1,400 |
| Cost of Goods Sold (COGS): | 100 | 100 |
| **Gross Profit:** | 1,200 | 1,300 |
| Operating Expenses: | 200 | 200 |
| Depreciation: | - | - |
| Stock-Based Compensation: | - | - |
| Amortization of Intangibles: | - | - |
| **Operating Income:** | 1,000 | 1,100 |
| (+) Interest Income: | - | - |
| (-) Interest Expense: | - | - |
| Gain / (Loss) on Sale of PP&E: | - | - |
| Gain / (Loss) on Sale of ST Inv.: | - | - |
| (-) Goodwill Impairment: | - | - |
| (-) PP&E Write-Down: | - | - |
| **Pre-Tax Income:** | 1,000 | 1,100 |
| Income Tax Provision: | 400 | 440 |
| Current Portion of Taxes: | 400 | 440 |
| Deferred Portion of Taxes: | - | - |
| **Net Income:** | 600 | 660 |
| (-) Preferred Dividends: | - | - |
| **Net Income to Common:** | $ 600 | $ 660 |

| Balance Sheet | Beginning of Current Period: | End of Current Period: Before Changes: | After Changes: |
|---|---|---|---|
| **Assets:** | | | |
| **Current Assets:** | | | |
| Cash & Cash-Equivalents: | $ 100 | $ 700 | $ 760 |
| Short-Term Investments: | 100 | 100 | 100 |
| Accounts Receivable: | 100 | 100 | 100 |
| Prepaid Expenses: | 100 | 100 | 100 |
| Inventory: | 100 | 100 | 100 |
| **Total Current Assets:** | 500 | 1,100 | 1,160 |
| **Long-Term Assets:** | | | |
| Plants, Property & Equipment: | 1,000 | 1,000 | 1,000 |
| Other Intangible Assets: | 300 | 300 | 300 |
| Long-Term Investments: | 100 | 100 | 100 |
| Goodwill: | 100 | 100 | 100 |
| **Total Long-Term Assets:** | 1,500 | 1,500 | 1,500 |
| **Total Assets:** | $ 2,000 | $ 2,600 | $ 2,660 |
| **Liabilities & Equity:** | | | |
| **Current Liabilities:** | | | |
| Revolver (Short-Term Debt): | $ 100 | $ 100 | $ 100 |
| Accounts Payable: | 200 | 200 | 200 |
| Accrued Expenses: | 200 | 200 | 200 |
| **Total Current Liabilities:** | 500 | 500 | 500 |
| **Long-Term Liabilities:** | | | |
| Deferred Revenue: | 200 | 200 | 200 |
| Deferred Tax Liability: | 200 | 200 | 200 |
| Long-Term Debt: | 100 | 100 | 100 |
| **Total Long-Term Liabilities:** | 500 | 500 | 500 |
| **Total Liabilities:** | $ 1,000 | $ 1,000 | $ 1,000 |
| **Equity:** | | | |
| **Shareholders' Equity:** | | | |
| Common Stock & APIC: | 600 | 600 | 600 |
| Treasury Stock: | (100) | (100) | (100) |
| Retained Earnings: | 300 | 900 | 960 |
| Accum. Other Compr. Income: | 100 | 100 | 100 |
| **Total Shareholders' Equity:** | 900 | 1,500 | 1,560 |
| Preferred Stock: | 100 | 100 | 100 |
| **Total Equity:** | $ 1,000 | $ 1,600 | $ 1,660 |
| **Total Liabilities & Equity:** | $ 2,000 | $ 2,600 | $ 2,660 |
| **Balance Sheet Balanced?** | OK! | OK! | OK! |

For this question, you could probably *skip* the Cash Flow Statement because all that happens is that Net Income increases by $60 and Cash at the bottom increases by $60.

If expenses increased by $100 instead, the opposite would happen, and Net Income, Cash, and Retained Earnings would all be down by $60.

Here's a summary of what happens:

- **Examples:** Revenue, COGS, Operating Expenses, and Interest Income / (Expense).

- **What Changes as a RESULT of These Items Changing:** Pre-Tax Income, Net Income, Cash, and Retained Earnings.

- **How the Balance Sheet Balances:** Cash and Retained Earnings both change.

**2) Changes to Non-Cash or Re-Classified Items on the Income Statement**

These changes follow a set pattern: Pre-Tax Income and Net Income change, but you add back or subtract the change on the Cash Flow Statement.

Cash and Retained Earnings change, and then something else on the Balance Sheet also changes. The tricky part is what that "something else" is, but it is usually intuitive.

The classic example is **Depreciation**, but they could ask about plenty of other items in the same category: Amortization, Stock-Based Compensation, or an Asset Write-Down.

Here's a list of non-cash items and what they match up with on the Balance Sheet:

- Depreciation – PP&E.
- Amortization – Other Intangible Assets.
- Stock-Based Compensation – Common Stock & APIC.
- Gains / (Losses) on PP&E – PP&E.
- Write-Downs – The Asset you are writing down.
- Impairment Charges – The Asset you are impairing.

Here's what the classic question about Depreciation increasing by $10 looks like on the right:

You record the $10 extra of Depreciation on the Income Statement, which reduces the company's Pre-Tax Income by $10, and its Net Income by $6 (assuming a 40% tax rate).

**Don't even mention Operating Income – just simplify it and say Pre-Tax Income declines by $10**.

And then here are the Cash Flow Statement and Balance Sheet:

| Income Statement | Current Period: Before Changes: | After Changes: |
|---|---|---|
| **Revenue:** | $ 1,300 | $ 1,300 |
| Cost of Goods Sold (COGS): | 100 | 100 |
| **Gross Profit:** | 1,200 | 1,200 |
| Operating Expenses: | 200 | 200 |
| Depreciation: | - | 10 |
| Stock-Based Compensation: | - | - |
| Amortization of Intangibles: | - | - |
| **Operating Income:** | 1,000 | 990 |
| (+) Interest Income: | - | - |
| (-) Interest Expense: | - | - |
| Gain / (Loss) on Sale of PP&E: | - | - |
| Gain / (Loss) on Sale of ST Inv.: | - | - |
| (-) Goodwill Impairment: | - | - |
| (-) PP&E Write-Down: | - | - |
| **Pre-Tax Income:** | 1,000 | 990 |
| Income Tax Provision: | 400 | 396 |
| Current Portion of Taxes: | 400 | 396 |
| Deferred Portion of Taxes: | - | - |
| **Net Income:** | 600 | 594 |
| (-) Preferred Dividends: | - | - |
| **Net Income to Common:** | $ 600 | $ 594 |

| Cash Flow Statement | Current Period: Before Changes: | Current Period: After Changes: |
|---|---|---|
| **Operating Activities:** | | |
| **Net Income to Common:** | $ 600 | $ 594 |
| **Non-Cash Expenses & Other Adjustments:** | | |
| (+) Depreciation: | - | 10 |
| (+) Stock-Based Compensation | - | - |
| (+) Amortization of Intangibles | - | - |
| (+) Deferred Income Taxes: | - | - |
| (Gain) / Loss on Sale of PP&E: | - | - |
| (Gain) / Loss on Sale of ST Inv.: | - | - |
| (+) Goodwill Impairment: | - | - |
| (+) PP&E Write-Down: | - | - |
| **Changes in Operating Assets & Liabilities:** | | |
| Accounts Receivable: | - | - |
| Prepaid Expenses: | - | - |
| Inventory: | - | - |
| Accounts Payable: | - | - |
| Accrued Expenses: | - | - |
| Deferred Revenue: | - | - |
| **Cash Flow from Operations:** | 600 | 604 |
| **Investing Activities:** | | |
| (-) Buy Short-Term Investment | - | - |
| (+) Sell Short-Term Investment | - | - |
| (-) Buy Long-Term Investments | - | - |
| (+) Sell Long-Term Investments | - | - |
| (-) Capital Expenditures: | - | - |
| (+) PP&E Sale Proceeds: | - | - |
| **Cash Flow from Investing:** | - | - |
| **Financing Activities:** | | |
| (-) Common Dividends Issued: | - | - |
| (+) Issue Long-Term Debt: | - | - |
| (-) Repay Long-Term Debt: | - | - |
| (+) Issue Short-Term Debt: | - | - |
| (-) Repay Short-Term Debt: | - | - |
| (+) Issue Preferred Stock: | - | - |
| (-) Repay Preferred Stock: | - | - |
| (-) Repurchase Shares: | - | - |
| (+) Issue New Shares: | - | - |
| **Cash Flow from Financing:** | - | - |
| **FX Rate Effects:** | - | - |
| **Beginning Cash:** | $ 100 | $ 100 |
| **Increase / (Decrease) in Cash:** | $ 600 | $ 604 |
| **Cash & Cash Equivalents:** | $ 700 | $ 704 |

| Balance Sheet | Beginning of Current Period: | End of Current Period: Before Changes: | End of Current Period: After Changes: |
|---|---|---|---|
| **Assets:** | | | |
| **Current Assets:** | | | |
| Cash & Cash-Equivalents: | $ 100 | $ 700 | $ 704 |
| Short-Term Investments: | 100 | 100 | 100 |
| Accounts Receivable: | 100 | 100 | 100 |
| Prepaid Expenses: | 100 | 100 | 100 |
| Inventory: | 100 | 100 | 100 |
| **Total Current Assets:** | 500 | 1,100 | 1,104 |
| **Long-Term Assets:** | | | |
| Plants, Property & Equipment: | 1,000 | 1,000 | 990 |
| Other Intangible Assets: | 300 | 300 | 300 |
| Long-Term Investments: | 100 | 100 | 100 |
| Goodwill: | 100 | 100 | 100 |
| **Total Long-Term Assets:** | 1,500 | 1,500 | 1,490 |
| **Total Assets:** | $ 2,000 | $ 2,600 | $ 2,594 |
| **Liabilities & Equity:** | | | |
| **Current Liabilities:** | | | |
| Revolver (Short-Term Debt): | $ 100 | $ 100 | $ 100 |
| Accounts Payable: | 200 | 200 | 200 |
| Accrued Expenses: | 200 | 200 | 200 |
| **Total Current Liabilities:** | 500 | 500 | 500 |
| **Long-Term Liabilities:** | | | |
| Deferred Revenue: | 200 | 200 | 200 |
| Deferred Tax Liability: | 200 | 200 | 200 |
| Long-Term Debt: | 100 | 100 | 100 |
| **Total Long-Term Liabilities:** | 500 | 500 | 500 |
| **Total Liabilities:** | $ 1,000 | $ 1,000 | $ 1,000 |
| **Equity:** | | | |
| **Shareholders' Equity:** | | | |
| Common Stock & APIC: | 600 | 600 | 600 |
| Treasury Stock: | (100) | (100) | (100) |
| Retained Earnings: | 300 | 900 | 894 |
| Accum. Other Compr. Income: | 100 | 100 | 100 |
| **Total Shareholders' Equity:** | 900 | 1,500 | 1,494 |
| Preferred Stock: | 100 | 100 | 100 |
| **Total Equity:** | $ 1,000 | $ 1,600 | $ 1,594 |
| **Total Liabilities & Equity:** | $ 2,000 | $ 2,600 | $ 2,594 |
| **Balance Sheet Balanced?** | OK! | OK! | OK! |

So, in an interview, you could say: *"On the Income Statement, Pre-Tax Income falls by $10, and Net Income falls by $6, assuming a tax rate of 40%.*

*On the Cash Flow Statement, Net Income is down by $6, but you add back the $10 in Depreciation, so cash is up by $4 at the bottom. On the Balance Sheet, cash is up by $4, PP&E is down by $10, and so the Assets side is down by $6.*

*On the other side, Retained Earnings is down by $6 because Net Income was down by $6, so both sides balance."*

- **Examples:** Depreciation (PP&E), Amortization (Other Intangible Assets), Stock-Based Compensation (Common Stock & APIC), Gains / (Losses) on PP&E (PP&E), Write-Downs (The Asset you are writing down), and Impairment Charges (The Asset you are impairing).

- **What Changes as a RESULT of These Items Changing:** Pre-Tax Income, Net Income, Cash, Retained Earnings, and Something Else on the Balance Sheet.

- **How the Balance Sheet Balances:** Cash and Retained Earnings change, and something else on the Balance Sheet makes up the difference.

**3) Changes to Operational Items on the Balance Sheet**

These consist of items like Inventory, Accounts Receivable, Accounts Payable, Accrued Expenses, Prepaid Expenses, and Deferred Revenue.

Non-operational items such as Cash, Investments, and Debt are simpler and are part of category #4 (next).

Just like category #2 above, changes in these items will also affect **something on the Balance Sheet** besides Cash and Retained Earnings.

But these items are trickier because **increases and decreases work differently**.

To figure out what happens, ask yourself a simple question: "Have we *delivered* the product or service to the customer? Or has someone else *delivered* something to us?"

If so, it will appear on the Income Statement. If not, it won't be on the Income Statement.

Consider **Accounts Receivable (AR)**. If AR *increases*, it means we've delivered a product or service and are waiting for the cash. So, we record revenue on the Income Statement.

But if AR *decreases*, it means we've collected the cash but haven't delivered anything – so this change won't show up on the IS.

Here's a side-by-side comparison of all 3 statements so you can see how an **AR increase** is different from an **AR decrease**:

**IS – INCREASE in Accounts Receivable:**

| Income Statement | Current Period: Before Changes: | Current Period: After Changes: |
|---|---|---|
| **Revenue:** | $ 1,300 | $ 1,400 |
| Cost of Goods Sold (COGS): | 100 | 100 |
| **Gross Profit:** | 1,200 | 1,300 |
| Operating Expenses: | 200 | 200 |
| **Pre-Tax Income:** | 1,000 | 1,100 |
| Income Tax Provision: | 400 | 440 |
| **Net Income to Common:** | $ 600 | $ 660 |

**IS – DECREASE in Accounts Receivable:**

| Income Statement | Current Period: Before Changes: | Current Period: After Changes: |
|---|---|---|
| **Revenue:** | $ 1,300 | $ 1,300 |
| Cost of Goods Sold (COGS): | 100 | 100 |
| **Gross Profit:** | 1,200 | 1,200 |
| Operating Expenses: | 200 | 200 |
| **Pre-Tax Income:** | 1,000 | 1,000 |
| Income Tax Provision: | 400 | 400 |
| **Net Income to Common:** | $ 600 | $ 600 |

**CFS – INCREASE in Accounts Receivable:**

| Cash Flow Statement | Current Period: Before Changes: | Current Period: After Changes: |
|---|---|---|
| **Operating Activities:** | | |
| **Net Income to Common:** | $ 600 | $ 660 |
| **Changes in Operating Assets & Liabilities:** | | |
| Accounts Receivable: | - | (100) |
| Prepaid Expenses: | - | - |
| Inventory: | - | - |
| Accounts Payable: | - | - |
| Accrued Expenses: | - | - |
| Deferred Revenue: | - | - |
| **Cash Flow from Operations:** | 600 | 560 |
| **Beginning Cash:** | $ 100 | $ 100 |
| **Increase / (Decrease) in Cash:** | $ 600 | $ 560 |
| **Cash & Cash Equivalents:** | $ 700 | $ 660 |

**CFS – DECREASE in Accounts Receivable:**

| Cash Flow Statement | Current Period: Before Changes: | Current Period: After Changes: |
|---|---|---|
| **Operating Activities:** | | |
| **Net Income to Common:** | $ 600 | $ 600 |
| **Changes in Operating Assets & Liabilities:** | | |
| Accounts Receivable: | - | 100 |
| Prepaid Expenses: | - | - |
| Inventory: | - | - |
| Accounts Payable: | - | - |
| Accrued Expenses: | - | - |
| Deferred Revenue: | - | - |
| **Cash Flow from Operations:** | 600 | 700 |
| **Beginning Cash:** | $ 100 | $ 100 |
| **Increase / (Decrease) in Cash:** | $ 600 | $ 700 |
| **Cash & Cash Equivalents:** | $ 700 | $ 800 |

**BS – INCREASE in Accounts Receivable:**

| Balance Sheet | Beginning of Current Period: | End of Current Period: Before Changes: | End of Current Period: After Changes: |
|---|---|---|---|
| **Assets:** | | | |
| **Current Assets:** | | | |
| Cash & Cash-Equivalents: | $ 100 | $ 700 | $ 660 |
| Short-Term Investments: | 100 | 100 | 100 |
| Accounts Receivable: | 100 | 100 | 200 |
| Prepaid Expenses: | 100 | 100 | 100 |
| Inventory: | 100 | 100 | 100 |
| **Total Current Assets:** | **500** | **1,100** | **1,160** |
| **Total Assets:** | **$ 2,000** | **$ 2,600** | **$ 2,660** |
| **Total Liabilities:** | **$ 1,000** | **$ 1,000** | **$ 1,000** |
| **Equity:** | | | |
| **Shareholders' Equity:** | | | |
| Common Stock & APIC: | 600 | 600 | 600 |
| Treasury Stock: | (100) | (100) | (100) |
| Retained Earnings: | 300 | 900 | 960 |
| Accum. Other Compr. Income: | 100 | 100 | 100 |
| **Total Shareholders' Equity:** | **900** | **1,500** | **1,560** |
| Preferred Stock: | 100 | 100 | 100 |
| **Total Equity:** | **$ 1,000** | **$ 1,600** | **$ 1,660** |
| **Total Liabilities & Equity:** | **$ 2,000** | **$ 2,600** | **$ 2,660** |

**BS – DECREASE in Accounts Receivable:**

| Balance Sheet | Beginning of Current Period: | End of Current Period: Before Changes: | End of Current Period: After Changes: |
|---|---|---|---|
| **Assets:** | | | |
| **Current Assets:** | | | |
| Cash & Cash-Equivalents: | $ 100 | $ 700 | $ 800 |
| Short-Term Investments: | 100 | 100 | 100 |
| Accounts Receivable: | 100 | 100 | - |
| Prepaid Expenses: | 100 | 100 | 100 |
| Inventory: | 100 | 100 | 100 |
| **Total Current Assets:** | **500** | **1,100** | **1,100** |
| **Total Assets:** | **$ 2,000** | **$ 2,600** | **$ 2,600** |
| **Total Liabilities:** | **$ 1,000** | **$ 1,000** | **$ 1,000** |
| **Equity:** | | | |
| **Shareholders' Equity:** | | | |
| Common Stock & APIC: | 600 | 600 | 600 |
| Treasury Stock: | (100) | (100) | (100) |
| Retained Earnings: | 300 | 900 | 900 |
| Accum. Other Compr. Income: | 100 | 100 | 100 |
| **Total Shareholders' Equity:** | **900** | **1,500** | **1,500** |
| Preferred Stock: | 100 | 100 | 100 |
| **Total Equity:** | **$ 1,000** | **$ 1,600** | **$ 1,600** |
| **Total Liabilities & Equity:** | **$ 2,000** | **$ 2,600** | **$ 2,600** |

So if you're walking through an **increase** in AR, you'd say: *"On the Income Statement, revenue increases by $100, and with no other changes, Pre-Tax Income increases by $100 and Net Income is up by $60 at a 40% tax rate.*

*On the Cash Flow Statement, Net Income is up by $60, but the increase in AR reduces cash flow by $100 because you haven't received that revenue in cash. So cash is down by $40 at the bottom.*

*On the Balance Sheet, cash is down by $40, but AR is up by $100, so the Assets side is up by $60. On the other side, Retained Earnings is up by $60, so the L&E side is up by $60 and both sides balance."*

If you're walking through a **decrease** in AR, you'd say: *"On the Income Statement, there are no changes because a decrease in AR corresponds to a cash collection from customers.*

*On the Cash Flow Statement, the decrease in AR results in $100 of extra cash flow because the company is collecting cash from customers, so cash is up by $100 at the bottom.*

*On the Balance Sheet, cash is up by $100 on the Assets side, and AR is down by $100, so the Assets side doesn't change, the L&E side doesn't change, and the BS remains in balance."*

We're not going to paste in Excel screenshots for every single possible change; please use the Excel file to try that on your own.

Here's a summary of the most common items:

- **Accounts Receivable**
  - **Increases:** IS, BS, and CFS all change; represents *recorded revenue*.
  - **Decreases:** Only the BS and CFS change; represents *cash collection*.
- **Prepaid Expenses**
  - **Increases:** Only the BS and CFS change; represents *payment for expenses not yet incurred*.
  - **Decreases:** IS, BS, and CFS all change; represents *recognition of an expense previously paid in cash*.
- **Inventory**
  - **Increases:** Only the BS and CFS change; represents *spending on goods that have not yet been sold or delivered.*
  - **Decreases:** IS, BS, and CFS all change; represents *recognition of an expense previously paid in cash*.
- **Accrued Expenses and Accounts Payable**
  - **Increases:** IS, BS, and CFS all change; represents *recognition of an expense that has not yet been paid in cash*.
  - **Decreases:** Only the BS and CFS change; represents *cash payment of an expense that was previously recognized*.
- **Deferred Revenue**
  - **Increases:** Only the BS and CFS change; represents *cash collection for sales that cannot yet be recognized as revenue*.
  - **Decreases:** IS, BS, and CFS all change; represents *recognition of revenue that has already been collected in cash*.

We strongly recommend that you review the 3-statement "interview question" model to understand these questions.

**4) Changes to Non-Operational Balance Sheet Items or Cash Flow Statement Items**

These items are simple because there are **no immediate Income Statement changes**.

All that happens is that there's a cash inflow or outflow on the Cash Flow Statement, and both Cash and the corresponding Balance Sheet item change.

Here are examples of these changes and the Balance Sheet line items that will change:

- **Capital Expenditures** – PP&E and Cash will change.
- **Purchasing or Selling Securities** – Short/Long-Term Investments and Cash will change.
- **Selling PP&E** – PP&E and Cash will change.
- **Raising or Paying Off Debt** – Debt and Cash will change.
- **Raising or Paying Off Preferred Stock** – Preferred Stock and Cash will change.
- **Issuing Stock** – Common Stock & APIC and Cash will change.
- **Repurchasing Stock** – Treasury Stock and Cash will change.
- **Issuing Dividends** – Retained Earnings and Cash will change.
- **Deferred Taxes** – The Deferred Tax Liability and Cash will change.
- **FX Rate Effects** – Accumulated Other Comprehensive Income (AOCI) and Cash will change.

*Sometimes*, it's unclear whether or not there's an Income Statement impact.

For example, Preferred Dividends do not impact a company's Net Income, but they *do* impact its "Net Income to Common." Net Income to Common equals Net Income minus Preferred Dividends and appears at the bottom of the Income Statement.

But for the most part, these changes are straightforward.

**5) Multi-Step Scenarios and Changes on the Financial Statements**

"Multi-step scenarios" in interviews are not complicated as long as you understand each change individually.

With these questions, the interviewer might say something like: *"A company buys a factory using debt, and then starts manufacturing new products. Walk me through how its statements change."*

So, it's not just *one* change, such as raising debt, but multiple changes at once.

The 3-statement Excel model will be your best friend here, but let's go through one example:

*"You purchase a factory for $100 using $100 of debt. Walk me through the 3 financial statements immediately after this transaction, and then walk me through what happens after a year. Assume that the debt has a 10% interest rate and that $20 in principal is repaid each year. The factories depreciate at $10 per year over 10 years."*

Immediately after this change, nothing happens on the Income Statement because Capital Expenditures and Debt Issuances do not appear on the Income Statement.

Instead, you show a cash outflow and cash inflow on the Cash Flow Statement, and they cancel each other out; on the Balance Sheet, PP&E is up by $100 on the Assets side, and Debt is up by $100 on the L&E side, so it remains in balance:

| Cash Flow Statement | Current Period: Before Changes: | After Changes: |
|---|---|---|
| **Operating Activities:** | | |
| **Net Income to Common:** | $ 600 | $ 600 |
| **Non-Cash Expenses & Other Adjustments:** | | |
| (+) Depreciation: | - | - |
| (+) Stock-Based Compensation | - | - |
| (+) Amortization of Intangibles | - | - |
| (+) Deferred Income Taxes: | - | - |
| (Gain) / Loss on Sale of PP&E: | - | - |
| (Gain) / Loss on Sale of ST Inv.: | - | - |
| (+) Goodwill Impairment: | - | - |
| (+) PP&E Write-Down: | - | - |
| **Changes in Operating Assets & Liabilities:** | | |
| Accounts Receivable: | - | - |
| Prepaid Expenses: | - | - |
| Inventory: | - | - |
| Accounts Payable: | - | - |
| Accrued Expenses: | - | - |
| Deferred Revenue: | - | - |
| **Cash Flow from Operations:** | 600 | 600 |
| **Investing Activities:** | | |
| (-) Buy Short-Term Investment | - | - |
| (+) Sell Short-Term Investment | - | - |
| (-) Buy Long-Term Investments | - | - |
| (+) Sell Long-Term Investments | - | - |
| (-) Capital Expenditures: | - | (100) |
| (+) PP&E Sale Proceeds: | - | - |
| **Cash Flow from Investing:** | - | **(100)** |
| **Financing Activities:** | | |
| (-) Common Dividends Issued: | - | - |
| (+) Issue Long-Term Debt: | - | 100 |
| (-) Repay Long-Term Debt: | - | - |
| (+) Issue Short-Term Debt: | - | - |
| (-) Repay Short-Term Debt: | - | - |
| (+) Issue Preferred Stock: | - | - |
| (-) Repay Preferred Stock: | - | - |
| (-) Repurchase Shares: | - | - |
| (+) Issue New Shares: | - | - |
| **Cash Flow from Financing:** | - | **100** |
| **FX Rate Effects:** | - | - |
| **Beginning Cash:** | $ 100 | $ 100 |
| **Increase / (Decrease) in Cash:** | $ 600 | $ 600 |
| **Cash & Cash Equivalents:** | $ 700 | $ 700 |

| Balance Sheet | Beginning of Current Period: | End of Current Period: Before Changes: | After Changes: |
|---|---|---|---|
| **Assets:** | | | |
| **Current Assets:** | | | |
| Cash & Cash-Equivalents: | $ 100 | $ 700 | $ 700 |
| Short-Term Investments: | 100 | 100 | 100 |
| Accounts Receivable: | 100 | 100 | 100 |
| Prepaid Expenses: | 100 | 100 | 100 |
| Inventory: | 100 | 100 | 100 |
| **Total Current Assets:** | **500** | **1,100** | **1,100** |
| **Long-Term Assets:** | | | |
| Plants, Property & Equipment: | 1,000 | 1,000 | 1,100 |
| Other Intangible Assets: | 300 | 300 | 300 |
| Long-Term Investments: | 100 | 100 | 100 |
| Goodwill: | 100 | 100 | 100 |
| **Total Long-Term Assets:** | **1,500** | **1,500** | **1,600** |
| **Total Assets:** | **$ 2,000** | **$ 2,600** | **$ 2,700** |
| **Liabilities & Equity:** | | | |
| **Current Liabilities:** | | | |
| Revolver (Short-Term Debt): | $ 100 | $ 100 | $ 100 |
| Accounts Payable: | 200 | 200 | 200 |
| Accrued Expenses: | 200 | 200 | 200 |
| **Total Current Liabilities:** | **500** | **500** | **500** |
| **Long-Term Liabilities:** | | | |
| Deferred Revenue: | 200 | 200 | 200 |
| Deferred Tax Liability: | 200 | 200 | 200 |
| Long-Term Debt: | 100 | 100 | 200 |
| **Total Long-Term Liabilities:** | **500** | **500** | **600** |
| **Total Liabilities:** | **$ 1,000** | **$ 1,000** | **$ 1,100** |
| **Equity:** | | | |
| **Shareholders' Equity:** | | | |
| Common Stock & APIC: | 600 | 600 | 600 |
| Treasury Stock: | (100) | (100) | (100) |
| Retained Earnings: | 300 | 900 | 900 |
| Accum. Other Compr. Income: | 100 | 100 | 100 |
| **Total Shareholders' Equity:** | **900** | **1,500** | **1,500** |
| Preferred Stock: | 100 | 100 | 100 |
| **Total Equity:** | **$ 1,000** | **$ 1,600** | **$ 1,600** |
| **Total Liabilities & Equity:** | **$ 2,000** | **$ 2,600** | **$ 2,700** |
| **Balance Sheet Balanced?** | **OK!** | **OK!** | **OK!** |

| Income Statement | Current Period: Before Changes: | After Changes: |
|---|---|---|
| **Revenue:** | $ 1,300 | $ 1,300 |
| Cost of Goods Sold (COGS): | 100 | 100 |
| **Gross Profit:** | 1,200 | 1,200 |
| Operating Expenses: | 200 | 200 |
| Depreciation: | - | 10 |
| Stock-Based Compensation: | - | - |
| Amortization of Intangibles: | - | - |
| **Operating Income:** | 1,000 | 990 |
| (+) Interest Income: | - | - |
| (-) Interest Expense: | - | (10) |
| Gain / (Loss) on Sale of PP&E: | - | - |
| Gain / (Loss) on Sale of ST Inv.: | - | - |
| (-) Goodwill Impairment: | - | - |
| (-) PP&E Write-Down: | - | - |
| **Pre-Tax Income:** | 1,000 | 980 |
| Income Tax Provision: | 400 | 392 |
| Current Portion of Taxes: | 400 | 392 |
| Deferred Portion of Taxes: | - | - |
| **Net Income:** | 600 | 588 |
| (-) Preferred Dividends: | - | - |
| **Net Income to Common:** | $ 600 | $ 588 |

For the next part – what happens after a year of owning these factories – you have to factor in the Interest Expense, the Depreciation, and the Debt Principal Repayment.

All of those changes correspond to **THIS** period, but only the **Depreciation** and **Interest Expense** show up on the Income Statement because they're both tax-deductible, whereas the Debt Repayment is not.

On the Income Statement, Pre-Tax Income falls by $20, and so Net Income falls by $12 at a 40% tax rate.

On the Cash Flow Statement, there are a few changes.

Net Income is down by $12, but the Depreciation is non-cash, so we add back the $10 in Depreciation near the top. So far, cash is down by $2.

And then we also record the $20 repayment of long-term debt, which reduces cash flow by $20.

The net effect is that **cash is down by $22**.

On the Balance Sheet, cash is down by $22, and PP&E is down by $10, so the Assets side is down by $32.

On the L&E side, Debt is down by $20 because of the principal repayment, and Retained Earnings is down by $12 because of the reduced Net Income, so both sides are down by $32 and the Balance Sheet balances.

Here's what it looks like:

| Cash Flow Statement | Current Period: Before Changes: | Current Period: After Changes: |
|---|---|---|
| **Operating Activities:** | | |
| **Net Income to Common:** | $ 600 | $ 588 |
| **Non-Cash Expenses & Other Adjustments:** | | |
| (+) Depreciation: | - | 10 |
| (+) Stock-Based Compensation | - | - |
| (+) Amortization of Intangibles | - | - |
| (+) Deferred Income Taxes: | - | - |
| (Gain) / Loss on Sale of PP&E: | - | - |
| (Gain) / Loss on Sale of ST Inv.: | - | - |
| (+) Goodwill Impairment: | - | - |
| (+) PP&E Write-Down: | - | - |
| **Changes in Operating Assets & Liabilities:** | | |
| Accounts Receivable: | - | - |
| Prepaid Expenses: | - | - |
| Inventory: | - | - |
| Accounts Payable: | - | - |
| Accrued Expenses: | - | - |
| Deferred Revenue: | - | - |
| **Cash Flow from Operations:** | 600 | 598 |
| | | |
| **Investing Activities:** | | |
| (-) Buy Short-Term Investment | - | - |
| (+) Sell Short-Term Investment | - | - |
| (-) Buy Long-Term Investments | - | - |
| (+) Sell Long-Term Investments | - | - |
| (-) Capital Expenditures: | - | - |
| (+) PP&E Sale Proceeds: | - | - |
| **Cash Flow from Investing:** | - | - |
| | | |
| **Financing Activities:** | | |
| (-) Common Dividends Issued: | - | - |
| (+) Issue Long-Term Debt: | - | - |
| (-) Repay Long-Term Debt: | - | (20) |
| (+) Issue Short-Term Debt: | - | - |
| (-) Repay Short-Term Debt: | - | - |
| (+) Issue Preferred Stock: | - | - |
| (-) Repay Preferred Stock: | - | - |
| (-) Repurchase Shares: | - | - |
| (+) Issue New Shares: | - | - |
| **Cash Flow from Financing:** | - | (20) |
| | | |
| **FX Rate Effects:** | - | - |
| | | |
| **Beginning Cash:** | $ 100 | $ 100 |
| | | |
| **Increase / (Decrease) in Cash:** | $ 600 | $ 578 |
| **Cash & Cash Equivalents:** | $ 700 | $ 678 |

| Balance Sheet | Beginning of Current Period: | End of Current Period: Before Changes: | End of Current Period: After Changes: |
|---|---|---|---|
| **Assets:** | | | |
| **Current Assets:** | | | |
| Cash & Cash-Equivalents: | $ 100 | $ 700 | $ 678 |
| Short-Term Investments: | 100 | 100 | 100 |
| Accounts Receivable: | 100 | 100 | 100 |
| Prepaid Expenses: | 100 | 100 | 100 |
| Inventory: | 100 | 100 | 100 |
| **Total Current Assets:** | **500** | **1,100** | **1,078** |
| | | | |
| **Long-Term Assets:** | | | |
| Plants, Property & Equipment: | 1,000 | 1,000 | 990 |
| Other Intangible Assets: | 300 | 300 | 300 |
| Long-Term Investments: | 100 | 100 | 100 |
| Goodwill: | 100 | 100 | 100 |
| **Total Long-Term Assets:** | **1,500** | **1,500** | **1,490** |
| | | | |
| **Total Assets:** | $ 2,000 | $ 2,600 | $ 2,568 |
| | | | |
| **Liabilities & Equity:** | | | |
| | | | |
| **Current Liabilities:** | | | |
| Revolver (Short-Term Debt): | $ 100 | $ 100 | $ 100 |
| Accounts Payable: | 200 | 200 | 200 |
| Accrued Expenses: | 200 | 200 | 200 |
| **Total Current Liabilities:** | **500** | **500** | **500** |
| | | | |
| **Long-Term Liabilities:** | | | |
| Deferred Revenue: | 200 | 200 | 200 |
| Deferred Tax Liability: | 200 | 200 | 200 |
| Long-Term Debt: | 100 | 100 | 80 |
| **Total Long-Term Liabilities:** | **500** | **500** | **480** |
| | | | |
| **Total Liabilities:** | $ 1,000 | $ 1,000 | $ 980 |
| | | | |
| **Equity:** | | | |
| **Shareholders' Equity:** | | | |
| Common Stock & APIC: | 600 | 600 | 600 |
| Treasury Stock: | (100) | (100) | (100) |
| Retained Earnings: | 300 | 900 | 888 |
| Accum. Other Compr. Income: | 100 | 100 | 100 |
| **Total Shareholders' Equity:** | **900** | **1,500** | **1,488** |
| Preferred Stock: | 100 | 100 | 100 |
| **Total Equity:** | $ 1,000 | $ 1,600 | $ 1,588 |
| | | | |
| **Total Liabilities & Equity:** | $ 2,000 | $ 2,600 | $ 2,568 |
| | | | |
| **Balance Sheet Balanced?** | **OK!** | **OK!** | **OK!** |

At this point, the interviewer might turn to other topics – or he could also throw in a **final twist**.

For example, what if the factory breaks down and the company has to write down its full value and repay the entire debt balance?

He has to specify whether you should walk through this change *over the course of a year* or just before and after the change takes place.

If it's **over the course of an entire year**, it will look like this:

| Income Statement | Current Period: Before Changes: | After Changes: |
|---|---|---|
| **Revenue:** | $ 1,300 | $ 1,300 |
| Cost of Goods Sold (COGS): | 100 | 100 |
| **Gross Profit:** | **1,200** | **1,200** |
| Operating Expenses: | 200 | 200 |
| Depreciation: | - | 10 |
| Stock-Based Compensation: | - | - |
| Amortization of Intangibles: | - | - |
| **Operating Income:** | **1,000** | **990** |
| (+) Interest Income: | - | - |
| (-) Interest Expense: | - | (10) |
| Gain / (Loss) on Sale of PP&E: | - | - |
| Gain / (Loss) on Sale of ST Inv.: | - | - |
| (-) Goodwill Impairment: | - | - |
| (-) PP&E Write-Down: | - | (90) |
| **Pre-Tax Income:** | **1,000** | **890** |
| Income Tax Provision: | 400 | 356 |
| **Net Income:** | **600** | **534** |

Once again, we have to factor in the Depreciation and Interest Expense, which both reduce the company's Pre-Tax Income.

But we also need to include the **PP&E write-down**.

It's a write-down of $90 rather than $100 because we've already depreciated $10 of this PP&E throughout the year.

So, if disaster strikes on December 31st, there's only $90 of PP&E *left* to write down at that point.

As a result, Pre-Tax Income falls by $110, and Net Income falls by $66 at a 40% tax rate.

On the Cash Flow Statement, Net Income is down by $66, but we have to make several non-cash adjustments as well.

We still add back the $10 of Depreciation, and we also add back the $90 PP&E write-down **because write-downs are non-cash**.

And then we record the $100 repayment of long-term debt near the bottom. It's $100 because we repay $20 during the year and then we repay the remaining $80 at the very end of the year.

So, cash is down by $66, up by $10, up by $90, and down by $100, and is therefore down a total of $66.

On the Balance Sheet, Cash is down by $66 and PP&E is down by $100, so the Assets side is down by $166.

On the L&E side, Debt is down by $100 and Retained Earnings is down by $66, so this side is also down by $166 and both sides balance.

Here's what it looks like on the CFS and BS:

| Cash Flow Statement | Current Period: Before Changes: | After Changes: |
|---|---|---|
| **Operating Activities:** | | |
| **Net Income to Common:** | $ 600 | $ 534 |
| **Non-Cash Expenses & Other Adjustments:** | | |
| (+) Depreciation: | - | 10 |
| (+) Stock-Based Compensation | - | - |
| (+) Amortization of Intangibles | - | - |
| (+) Deferred Income Taxes: | - | - |
| (Gain) / Loss on Sale of PP&E: | - | - |
| (Gain) / Loss on Sale of ST Inv.: | - | - |
| (+) Goodwill Impairment: | - | - |
| (+) PP&E Write-Down: | - | 90 |
| **Changes in Operating Assets & Liabilities:** | | |
| Accounts Receivable: | - | - |
| Prepaid Expenses: | - | - |
| Inventory: | - | - |
| Accounts Payable: | - | - |
| Accrued Expenses: | - | - |
| Deferred Revenue: | - | - |
| **Cash Flow from Operations:** | 600 | 634 |
| (-) Buy Long-Term Investments | - | - |
| (+) Sell Long-Term Investments | - | - |
| (-) Capital Expenditures: | - | - |
| (+) PP&E Sale Proceeds: | - | - |
| **Cash Flow from Investing:** | - | - |
| **Financing Activities:** | | |
| (-) Common Dividends Issued: | - | - |
| (+) Issue Long-Term Debt: | - | - |
| (-) Repay Long-Term Debt: | - | (100) |
| (+) Issue Short-Term Debt: | - | - |
| (-) Repay Short-Term Debt: | - | - |
| (+) Issue Preferred Stock: | - | - |
| (-) Repay Preferred Stock: | - | - |
| (-) Repurchase Shares: | - | - |
| (+) Issue New Shares: | - | - |
| **Cash Flow from Financing:** | - | (100) |
| **FX Rate Effects:** | - | - |
| **Beginning Cash:** | $ 100 | $ 100 |
| **Increase / (Decrease) in Cash:** | $ 600 | $ 534 |
| **Cash & Cash Equivalents:** | $ 700 | $ 634 |

| Balance Sheet | Beginning of Current Period: | End of Current Period: Before Changes: | End of Current Period: After Changes: |
|---|---|---|---|
| **Assets:** | | | |
| **Current Assets:** | | | |
| Cash & Cash-Equivalents: | $ 100 | $ 700 | $ 634 |
| Short-Term Investments: | 100 | 100 | 100 |
| Accounts Receivable: | 100 | 100 | 100 |
| Prepaid Expenses: | 100 | 100 | 100 |
| Inventory: | 100 | 100 | 100 |
| **Total Current Assets:** | 500 | 1,100 | 1,034 |
| **Long-Term Assets:** | | | |
| Plants, Property & Equipment: | 1,000 | 1,000 | 900 |
| Other Intangible Assets: | 300 | 300 | 300 |
| Long-Term Investments: | 100 | 100 | 100 |
| Goodwill: | 100 | 100 | 100 |
| **Total Long-Term Assets:** | 1,500 | 1,500 | 1,400 |
| **Total Assets:** | $ 2,000 | $ 2,600 | $ 2,434 |
| **Liabilities & Equity:** | | | |
| Accrued Expenses: | 200 | 200 | 200 |
| **Total Current Liabilities:** | 500 | 500 | 500 |
| **Long-Term Liabilities:** | | | |
| Deferred Revenue: | 200 | 200 | 200 |
| Deferred Tax Liability: | 200 | 200 | 200 |
| Long-Term Debt: | 100 | 100 | - |
| **Total Long-Term Liabilities:** | 500 | 500 | 400 |
| **Total Liabilities:** | $ 1,000 | $ 1,000 | $ 900 |
| **Equity:** | | | |
| **Shareholders' Equity:** | | | |
| Common Stock & APIC: | 600 | 600 | 600 |
| Treasury Stock: | (100) | (100) | (100) |
| Retained Earnings: | 300 | 900 | 834 |
| Accum. Other Compr. Income: | 100 | 100 | 100 |
| **Total Shareholders' Equity:** | 900 | 1,500 | 1,434 |
| Preferred Stock: | 100 | 100 | 100 |
| **Total Equity:** | $ 1,000 | $ 1,600 | $ 1,534 |
| **Total Liabilities & Equity:** | $ 2,000 | $ 2,600 | $ 2,434 |
| **Balance Sheet Balanced?** | OK! | OK! | OK! |

Return to Top.

## Key Rule #9: Working Capital, Free Cash Flow, and Metrics and Ratios

And now we return to the most important formula of all:

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

We have the 3 financial statements, including the Cash Flow Statement, so it's easy to determine "Cash Flow": We just take the "Net Change in Cash" from the bottom of the Cash Flow Statement, right?

**WRONG!**

**The problem is that companies can spend their cash in tons of different ways, and not all these methods of spending cash are truly "necessary."**

For example, if a company issues debt or equity, both activities boost its cash flow – but neither one is "required" for the business to keep operating.

A company could spend cash buying investments, issuing dividends, or repurchasing shares, but all those activities are also "optional."

So, we need to estimate the company's **discretionary cash flow** each year – what it earns *after* paying for the items that it truly needs to run the business.

There are many definitions for "discretionary cash flow," but here's a very simple one: **Cash Flow from Operations minus Capital Expenditures (CapEx)**.

Many companies *do* define their "Free Cash Flow" like that.

Later on, we'll look at other variations and learn why it's not *quite* this simple when you value a company. But this definition is a good starting point.

**Cash Flow from Operations minus CapEx** is a good initial definition because:

- *Everything* in a company's "Operating Activities" section is assumed to be required for its business – earning Net Income, paying for Inventory, collecting Receivables, etc.

- But almost every line item within Investing and Financing Activities is "optional," except for Capital Expenditures.

CapEx is a "required" item because companies need buildings, factories, and equipment to manufacture products and sell them to customers.

Even companies that sell services or software need buildings and computer equipment, and spending on both of them is considered CapEx.

If a company generates positive Free Cash Flow, it can spend it in many ways:

1) It could **hire more employees**, i.e. increase its Operating Expenses, to do more marketing or develop new products.

2) It could **spend more on "Working Capital"** items like Inventory to get the materials and parts it needs to grow *in advance*.

3) It could **spend more on Capital Expenditures** to acquire more equipment, which should boost its long-term growth.

4) It could **invest in other assets** like stocks, bonds, or real estate so that it's at least doing "something" with its cash rather than earning 0% interest on it.

5) It could **repay its debt** to reduce its interest expense.

6) It could **return money to shareholders** by issuing dividends or repurchasing shares.

7) It could **acquire other companies** to expand into new markets or geographies.

Ideally, Free Cash Flow will be positive and growing each year, and it will be doing so because the company's sales and profits are growing.

If FCF is positive and growing, but the company's sales are declining, it might mean that the company is simply cutting expenses or "playing games" with its Working Capital or CapEx.

If FCF is **negative** or declining, you have to ask **why** before drawing conclusions.

For example, did FCF decline in just one year because of unusually high CapEx spending?

If so, that dip may not mean anything at all.

On the other hand, if FCF has been declining consistently because the company is becoming less profitable over time, that's a serious problem.

If a company gets into this situation and its cash balance starts to decline each year, it might have to raise debt or equity, restructure itself, or otherwise cut costs to keep running.

In real life, you use **Free Cash Flow** in the Discounted Cash Flow (DCF) analysis for valuing companies, and also in the Leveraged Buyout (LBO) analysis for assessing an acquisition and sale of a company.

You do not use *this* type of Free Cash Flow (CFO – CapEx), exactly, but you do use variations that are closely related to it.

**Components of Free Cash Flow: Working Capital**

To say much about a company's Free Cash Flow, you have to look at its individual components.

A big part of FCF is the company's Net Income: what it earns from core business activities and "side activities" after expenses and taxes.

Non-cash adjustments and Capital Expenditures also factor in, but those are fairly straightforward to understand.

One part that's **NOT** so straightforward is the company's "Working Capital."

The *official* definition of Working Capital is "Current Assets minus Current Liabilities":

| Balance Sheet: | | |
|---|---|---|
| **Assets:** | **Start of Period** | **End of Period** |
| **Current Assets:** | | |
| Cash: | $ 300 | $ 660 |
| Short-Term Investments: | - | - |
| Accounts Receivable: | - | 50 |
| Inventory: | - | 30 |
| Prepaid Expenses: | - | 30 |
| **Total Current Assets:** | **300** | **770** |
| **Long-Term Assets:** | | |
| Property, Plant & Equipment: | - | 30 |
| Goodwill: | 100 | 50 |
| Other Intangible Assets: | 50 | 40 |
| Long-Term Investments: | - | 100 |
| **Total Long-Term Assets:** | **150** | **220** |
| **Total Assets:** | **$ 450** | **$ 990** |
| **Liabilities & Equity:** | | |
| **Current Liabilities:** | | |
| Revolver (Short-Term Debt): | $ - | $ 50 |
| Accounts Payable: | - | 15 |
| Accrued Expenses: | - | 10 |
| Deferred Revenue: | - | 15 |
| **Total Current Liabilities:** | **-** | **90** |

Working Capital = $300 - $0 = $300 at the start of the period, and $770 - $90 = $680 at the end of the period, according to the "official definition" of it.

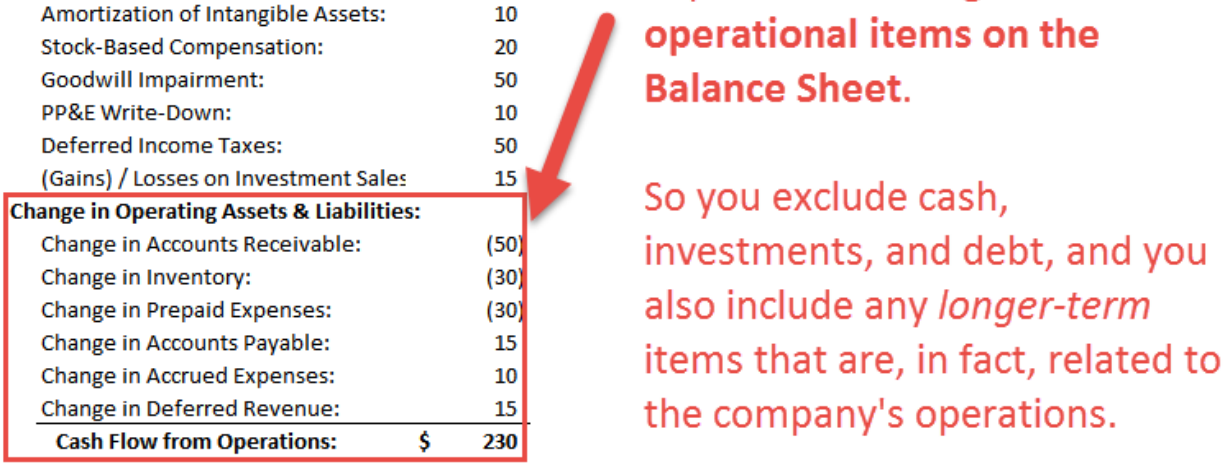
But by itself, this definition doesn't mean much. You care most about the **CHANGE** in Working Capital!

Also, you have to exclude cash, investments, and debt.

**But if you define Working Capital this way, it will NOT affect a company's Free Cash Flow in a way that makes logical sense and that is consistent with the financial statements**.

This is because the Cash Flow from Operations section of a company's Cash Flow Statement shows only the **CHANGE** in Working Capital, and it excludes certain items within Current Assets and Current Liabilities:

| Cash Flow Statement: | | |
|---|---|---|
| **Cash Flow from Operating Activities:** | | |
| Net Income: | $ | 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 on Investment Sales | | 15 |
| **Change in Operating Assets & Liabilities:** | | |
| Change in Accounts Receivable: | | (50) |
| Change in Inventory: | | (30) |
| Change in Prepaid Expenses: | | (30) |
| Change in Accounts Payable: | | 15 |
| Change in Accrued Expenses: | | 10 |
| Change in Deferred Revenue: | | 15 |
| **Cash Flow from Operations:** | **$** | **230** |




You exclude cash because the Net Change in Cash appears at the bottom of the Cash Flow Statement.

You exclude items related to short and long-term investments because they're part of the company's Investing Activities in the next section of the CFS.

And you exclude debt-related items because they're part of a company's Financing Activities.

So, the most **USEFUL** definition is:

**Working Capital** = Current Assets (Excluding Cash and Investments) – Current Liabilities (Excluding Debt)

This definition is sometimes called "Operating Working Capital," and you may also factor in certain Long-Term Assets and Liabilities *if they are related to the company's operations*.

And then you define the Change in Working Capital like this:

**Change in Working Capital** = Old Working Capital – New Working Capital

Normally, when you calculate a "Change," you take the new number and subtract the old number. So why is it different here?

To answer this question, pretend that a company's Working Capital consists of **only Inventory**.

In Year 2, it has $200 in Inventory, and in Year 1, it had $100 in Inventory. It has no other operationally-related Current Assets or Current Liabilities.

Therefore, its Working Capital was $100 in Year 1 and $200 in Year 2.

Since the company's Working Capital increased and Working Capital consists of **ONLY** Inventory, its Inventory must have increased. And if Inventory increased, the company must have **SPENT cash** to do that.

But if you calculated Working Capital this way: New WC – Old WC, it would show up as a *positive $100* on the Cash Flow Statement, which is wrong.

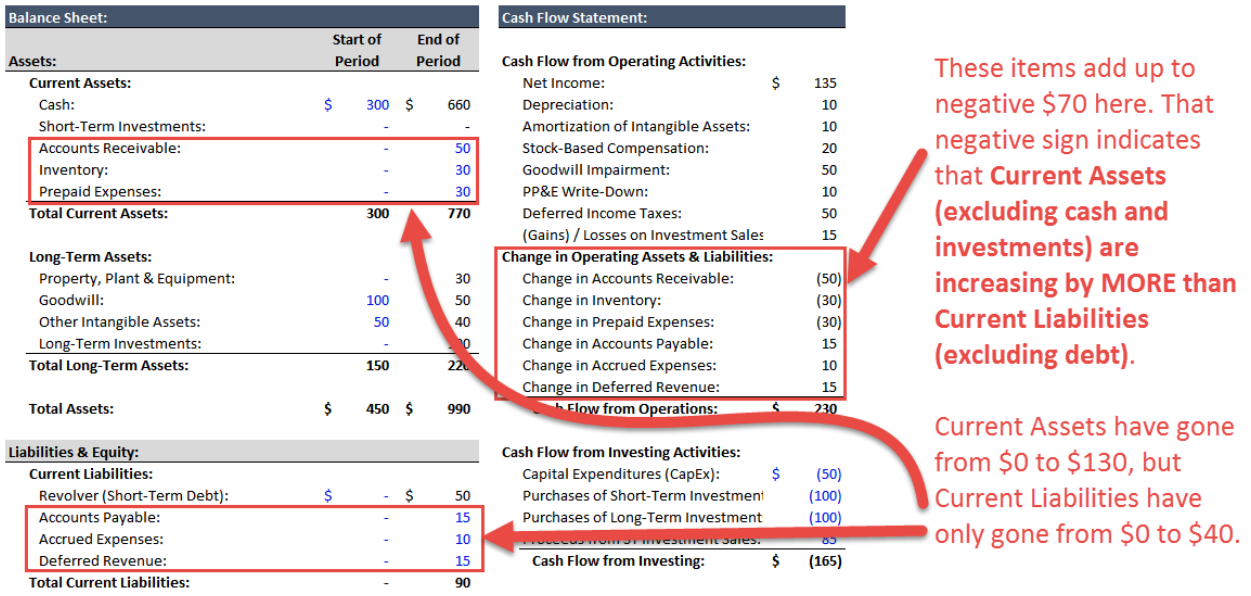
**So, to calculate the Change in Working Capital on the Cash Flow Statement, you must use Old Working Capital – New Working Capital.**

**When a company's Working Capital INCREASES, the company USES cash to do that.**

**When Working Capital DECREASES, it FREES UP cash.**

If you add up all the items under "Change in Operating Assets & Liabilities" above, the sum is negative $70.

Since this change is negative, it means that the company's Current Assets (excluding cash and investments) are increasing by **MORE** than its Current Liabilities (excluding debt):




If the Change in Working Capital were *positive* instead, it would mean that Current Liabilities (excluding debt) have increased by more than Current Assets (excluding cash and investments).

**The Change in Working Capital tells you whether a company has to spend money BEFORE it can grow, or whether it generates extra money as a RESULT of its growth.**

Companies such as **retailers** tend to have **negative Changes in Working Capital** because they have to spend on Inventory upfront before being able to sell anything.

Companies such as **subscription-based software companies** tend to have **positive Changes in Working Capital** because they collect cash from customers upfront, but take months or years to recognize it as revenue.

A company might also have a positive Change in Working Capital if it waits a long time to pay its suppliers, or if it has minimal Inventory or Accounts Receivable.

You can draw conclusions about a company's business model by calculating its Change in Working Capital and comparing it to the company's revenue and change in revenue.

For example, here are Wal-Mart's figures for one 3-year period:

**Wal-Mart - Working Capital Excerpt from Cash Flow Statement:**

| Changes In Certain Assets and Liabilities: | Year 1 | Year 2 | Year 3 |
|---|---|---|---|
| Accounts Receivable: | $ (796) | $ (614) | $ (566) |
| Inventories: | (3,727) | (2,759) | (1,667) |
| Accounts Payable: | 2,687 | 1,061 | 531 |
| Accrued Liabilities: | (935) | 271 | 103 |
| Accrued Taxes: | 994 | 981 | (1,224) |
| **Net Change in (Operating) Working Capital:** | **(1,777)** | **(1,060)** | **(2,823)** |
| | | | |
| Annual Revenue: | $ 421,395 | $ 446,509 | $ 468,651 | $ 476,294 |
| Change in Annual Revenue: | | 25,114 | 22,142 | 7,643 |
| Annual Net Income: | | 16,387 | 17,756 | 16,695 |
| | | | |
| Net Change as a % of Revenue: | | (0.4%) | (0.2%) | (0.6%) |
| Net Change as a % of Change in Revenue: | | (7.1%) | (4.8%) | (36.9%) |
| Net Change as a % of Net Income: | | (10.8%) | (6.0%) | (16.9%) |

As you can see, the company is spending a **huge amount** on Inventory, which is the main reason why its Change in Working Capital is negative each year.

Its Accounts Payable balance keeps increasing, resulting in positive cash flow, because it keeps suppliers waiting a fair bit before paying them.

When you compare the Change in Working Capital to the Change in Revenue, **the negative percentage indicates that Wal-Mart must SPEND additional cash to fuel its growth.**

This percentage is quite small, so it's not concerning, but it also means that the company doesn't get any "bonus" from growth. This negative Change in Working Capital will also reduce the company's Free Cash Flow, making it less valuable.

**The Change in Working Capital tells you if the company needs to spend in ADVANCE of its growth, or if it generates extra money as a RESULT of its growth – and as a direct result, the company's Free Cash Flow is lower, making it less valuable, or higher, making it more valuable.**

Once you have the individual components of a company's Free Cash Flow, you can start analyzing it and drawing conclusions about the company. Here's an example for Wal-Mart:

**Wal-Mart - FCF Excerpt from Financial Statements:**

| Free Cash Flow Calculation: | | Year 1 | Year 2 | Year 3 |
|---|---|---|---|---|
| Cash Flow from Operations: | $ 23,643 | $ 24,255 | $ 25,591 | $ 23,257 |
| (-) Capital Expenditures: | (12,699) | (13,510) | (12,898) | (13,115) |
| **Free Cash Flow:** | **$ 10,944** | **$ 10,745** | **$ 12,693** | **$ 10,142** |

| Changes In Certain Assets and Liabilities: | Year 1 | Year 2 | Year 3 |
|---|---|---|---|
| Accounts Receivable: | $ (796) | $ (614) | $ (566) |
| Inventories: | (3,727) | (2,759) | (1,667) |
| Accounts Payable: | 2,687 | 1,061 | 531 |
| Accrued Liabilities: | (935) | 271 | 103 |
| Accrued Taxes: | 994 | 981 | (1,224) |
| **Net Change in (Operating) Working Capital:** | **(1,777)** | **(1,060)** | **(2,823)** |
| | | | |
| Annual Revenue: | $ 421,395 | $ 446,509 | $ 468,651 | $ 476,294 |
| Annual Net Income: | 16,993 | 16,387 | 17,756 | 16,695 |
| | | | |
| *Net Change in WC % Change in Revenue:* | | *(7.1%)* | *(4.8%)* | *(36.9%)* |
| | | | |
| *Free Cash Flow Growth Rate:* | | *(1.8%)* | *18.1%* | *(20.1%)* |
| *CapEx as a % of Cash Flow from Operations:* | | *55.7%* | *50.4%* | *56.4%* |
| *CapEx as a % of Revenue:* | | *3.0%* | *2.8%* | *2.8%* |
| | | | |
| *Revenue Growth Rate:* | | *6.0%* | *5.0%* | *1.6%* |
| *Cash Flow from Operations Growth Rate:* | | *2.6%* | *5.5%* | *(9.1%)* |

Even though the company's revenue is growing, its Free Cash Flow (FCF) and Cash Flow from Operations (CFO) have both declined because the Change in Working Capital was far more negative in Year 3.

Capital Expenditures also fluctuate quite a bit, sometimes increasing and sometimes decreasing when the company's sales grow.

Like most retailers, Wal-Mart needs to spend *in advance* of its growth because of its Inventory requirements. Those requirements aren't massive since the Change in Working Capital is a relatively small percentage of the Change in Revenue.

The Year 3 result seems to be an anomaly because Accrued Taxes suddenly became a large, negative number, indicating that the company made an owed tax payment. So, the change from Year 1 to Year 2 may be more representative of the company as it grows.

**Key Metrics and Ratios on the Financial Statements**

Once you have a company's 3 financial statements, you can also calculate **metrics and ratios** to analyze them in more detail.

You already know one of these metrics: **Free Cash Flow**, or Cash Flow from Operations – CapEx.

**Net Income**, which represents the company's after-tax profits, is another important one.

A few others include:

- **EBIT (Earnings Before Interest and Taxes):** This is simply the company's Operating Income on the Income Statement, sometimes with "adjustments."
    - *Meaning:* It's sometimes a "proxy" for Free Cash Flow since, like FCF, it reflects the company's capital spending (as Depreciation appears somewhere above Operating Income on the Income Statement).
- **EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization):** Operating Income plus Depreciation and Amortization *taken from the Cash Flow Statement*.
    - *Meaning:* It's sometimes a "proxy" for Cash Flow from Operations since, like CFO, it adds back D&A and does not include Capital Expenditures at all.
- **NOPAT (Net Operating Profit After Taxes):** Operating Income * (1 – Tax Rate).
    - *Meaning:* What would a company's After-Tax Profits be if you ignored its interest income and expense, income from side activities, write-downs, and impairments?

Once you calculate these metrics, you can pair them up with the company's Equity, Assets, and Liabilities. A few examples:

- **Return on Equity (ROE):** Net Income / Average Equity
  - *Meaning:* For each $1.00 of equity raised or saved up, how much in after-tax profits does the company generate?
- **Return on Assets (ROA):** Net Income / Average Total Assets
  - *Meaning:* For each $1.00 in assets created or generated, how much in after-tax profits does the company generate?
- **Return on Invested Capital (ROIC):** NOPAT / Average Equity + Debt
  - *Meaning:* For each $1.00 of debt and equity raised, how much in after-tax Operating Income does the company generate? This metric measures how much it costs the business to **grow**.

You have to use **averages** for Balance Sheet figures when you mix them with Income Statement figures because the Balance Sheet represents only a snapshot in time, but the Income Statement represents an entire period.

You use these metrics to **compare peer companies in the same industry**.

For example, if a company's sales are growing at 20% and it has a ROE of 15%, but another company's sales are growing at 10%, and it has a ROE of 25%, that stands out.

The first company might be spending a lot more to grow, or it might be using more debt to fuel that growth, resulting in a higher interest expense and lower Net Income.

But you don't know until you look at each company's financial statements in depth; these metrics and ratios are like the clues in a murder mystery – not the full solution.

A few other metrics and ratios include:

- **Leverage Ratio:** Total Debt / EBITDA
  - *Meaning:* How much debt does a company have relative to its ability to repay that debt?
  - A **variation** is Net Debt / EBITDA; you subtract cash and investments from Debt to get "Net Debt," which paints a rosier picture of the company's obligations.
- **Interest Coverage Ratio:** EBITDA / Net Interest Expense
  - *Meaning:* How easily can a company pay the interest on its debt?
- **Dividend Payout Ratio:** Dividends / Net Income
  - *Meaning:* How much of the company's after-tax profits is it returning to shareholders?

You could also look at items like CapEx as percentages of revenue, or Depreciation as a percentage of CapEx; these don't have "official names," but they're useful for comparing companies' spending patterns.

Finally, there are a few useful Balance Sheet-based ratios.

You already know one of them: **Working Capital** or **Operating Working Capital**, which measures a company's cash requirements as its business grows. Others include:

- **Asset Turnover Ratio:** Revenue / Average Total Assets
  - *Meaning:* How dependent is a company on its assets to generate sales? A lower ratio indicates *greater* dependency.
- **Current Ratio:** Current Assets / Current Liabilities
  - *Meaning:* Can a company pay off its Current Liabilities using its Current Assets? The meaning is **VERY** different depending on what's in these categories.
- **Inventory Turnover:** COGS / Average Inventory
  - *Meaning:* How many times does a company turn its entire Inventory balance into finished products and sell them each year?
  - A related metric is **Days Inventory Outstanding**, which is 365 / Inventory Turnover. It tells you how many *days* the Inventory balance remains outstanding.
- **Receivables Turnover:** Revenue / Average Accounts Receivable
  - *Meaning:* How many times does a company collect the entire Receivables balance from customers each year?
  - A related metric is **Days Receivables Outstanding**, which is 365 / Receivables Turnover. It tells you how many *days* the Receivables balance remains outstanding.
- **Payables Turnover:** COGS or OpEx / Average Accounts Payable
  - *Meaning:* How many times does a company pay the full balance of invoices and owed payments each year?
  - A related metric is **Days Payables Outstanding**, which is 365 / Payables Turnover. It tells you how many *days* the Payables balance remains outstanding.

You don't need to memorize every single metric; the most important ones for interviews are EBIT and EBITDA.

You can use these metrics to analyze and compare companies. Here's an example for Wal-Mart:

| Financial Information: | Year 1 | Year 2 | Year 3 |
|---|---|---|---|
| **EBIT:** | **26,491** | **27,725** | **26,872** |
| (+) Depreciation & Amortization: | 8,106 | 8,478 | 8,870 |
| **EBITDA:** | **$ 34,597** | **$ 36,203** | **$ 35,742** |
| | | | |
| **Free Cash Flow (FCF):** | **10,745** | **12,693** | **10,142** |
| | | | |
| *EBIT Margin:* | *5.9%* | *5.9%* | *5.6%* |
| *EBITDA Margin:* | *7.7%* | *7.7%* | *7.5%* |
| *FCF Margin:* | *2.4%* | *2.7%* | *2.1%* |
| | | | |
| Net Operating Profit After Taxes (NOPAT): | 18,014 | 18,853 | 18,273 |
| | | | |
| Return on Equity (ROE): | 23.4% | 24.1% | 21.9% |
| Return on Assets (ROA): | 8.8% | 9.0% | 8.2% |
| Return on Invested Capital (ROIC): | 14.4% | 14.2% | 13.3% |
| | | | |
| Total Debt / EBITDA: | 1.5 x | 1.5 x | 1.6 x |
| EBITDA / Net Interest Expense: | 16.0 x | 17.5 x | 16.1 x |
| | | | |
| Asset Turnover Ratio: | 2.39 x | 2.36 x | 2.34 x |
| Current Ratio: | 0.88 x | 0.83 x | 0.88 x |
| | | | |
| Inventory Turnover: | 8.68 x | 8.34 x | 8.08 x |
| *Days Inventory Outstanding:* | *42.0* | *43.9* | *45.2* |
| Receivables Turnover: | 80.99 x | 73.77 x | 70.85 x |
| *Days Receivables Outstanding:* | *4.5* | *5.0* | *5.2* |
| Payables Turnover: | 9.53 x | 9.43 x | 9.49 x |
| *Days Payables Outstanding:* | *38.3* | *38.8* | *38.5* |

The company's profitability, according to any metric, is declining slightly. Is this a pattern, or a "temporary blip"?

Why are these metrics all falling? Is the company using its capital less efficiently, or is it just a "temporary blip"?

The company seems to be using about the same proportion of debt each year.

The company is taking more time to sell its Inventory, and also collecting cash from customers more slowly. Could these be affecting the results above?

These metrics and ratios point you in the direction of items you should investigate in more detail, but they're just a **starting point** for that process – like clues in a murder mystery.

To complete the process, you'd have to calculate the same metrics and ratios for similar companies in the industry, dig into the companies' financial statements, and see what might be causing the outcomes above.

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## Interview Questions

You **REALLY** need to know accounting to have a shot at winning job offers.

Accounting interview questions come up not just in investment banking interviews, but also in interviews for private equity, corporate development, investor relations, and all sorts of other exit opportunities.

Many bankers have **fairly weak knowledge** of accounting, so these questions are a quick way to evaluate how much you *understand* vs. how much you've *memorized*.

### Conceptual Accounting Questions

**1. What are the 3 financial statements, and why do we need them?**

The 3 major financial statements are the Income Statement, Balance Sheet, and Cash Flow Statement.

The Income Statement shows the company's revenue, expenses, and taxes over a period and ends with Net Income, which represents the company's after-tax profits.

The Balance Sheet shows the company's Assets – its resources – as well as how it paid for those resources – its Liabilities and Equity – at a specific point in time. Assets must equal Liabilities plus Equity.

The Cash Flow Statement begins with Net Income, adjusts for non-cash items and changes in operating assets and liabilities (working capital), and then shows the company's cash from Investing or Financing activities; the last lines show the net change in cash and the company's ending cash balance.

You need these statements because there is a big difference between a company's Net Income and the cash it generates – the Income Statement alone doesn't tell what its cash flow is.

Remember the key valuation formula:

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

The 3 financial statements let you estimate the "Cash Flow" part, which helps you value the company more accurately.

**2. How do the 3 statements link together?**

To link the statements, make Net Income from the Income Statement the top line of the Cash Flow Statement.

Then, adjust this Net Income number for any non-cash items such as Depreciation & Amortization.

Next, reflect changes to *operational* Balance Sheet items such as Accounts Receivable, which may increase or decrease the company's cash flow depending on how they've changed.

This gets you to Cash Flow from Operations.

Next, take into account investing and financing activities, which may increase or decrease cash flow, and sum up Cash Flow from Operations, Investing, and Financing to get the net change in cash at the bottom.

Link Cash on the Balance Sheet to the ending Cash number on the CFS, and add Net Income to Retained Earnings within the Equity category on the Balance Sheet.

Then, link each non-cash adjustment to the appropriate Asset or Liability; **SUBTRACT** links on the Assets side and **ADD** links on the L&E side.

And then link each CFI and CFF item to the matching item on the Balance Sheet, using the same rule as above.

Check that Assets equals Liabilities plus Equity at the end; if this is not true, you did something wrong and need to re-check your work.

**3. What's the most important financial statement?**

The Cash Flow Statement is the most important single statement because it tells you how much **cash** a company is generating. The Income Statement is misleading because it *includes* non-cash revenue and expenses and *excludes* cash spending such as Capital Expenditures.

**4. What if you could use only 2 statements to assess a company's prospects – which ones would you use, and why?**

You would use the Income Statement and Balance Sheet because you can **create** the Cash Flow Statement from both of those (assuming there are "Beginning" and "Ending" Balance Sheets that correspond to the same period shown on the Income Statement).

It would be **MUCH** harder to "construct" an Income Statement from the Balance Sheet and Cash Flow Statement (for example).

**5. How might the financial statements of a company in the U.K. or Germany be different from those of a company based in the U.S.?**

Income Statements and Balance Sheets tend to be similar across different regions, but companies that use IFRS often start the **Cash Flow Statement** with something *other* than Net Income: Operating Income, Pre-Tax Income, or if they are using the Direct Method for creating the CFS, Cash Received or Cash Paid.

There are also minor naming differences; for example, the Income Statement might be called the "Consolidated Statement of Earnings" or the "Profit & Loss Statement," and the Balance Sheet might be called the "Statement of Financial Position."

Technically, U.S.-based companies that follow U.S. GAAP can also use the Direct Method for creating the CFS, but in practice, they tend to use the Indirect Method (i.e., they start with Net Income and make adjustments to determine the cash flow).

**6. What should you do if a company's Cash Flow Statement starts with something OTHER than Net Income, such as Operating Income or Cash Received?**

For modeling and valuation purposes, you should **convert** this Cash Flow Statement into one that starts with Net Income and makes the standard adjustments.

Large companies should provide a reconciliation that shows you how to move from Net Income or Operating Income to Cash Flow from Operations and that lists the changes in Working Capital and other non-cash adjustments.

If the company does **NOT** provide that reconciliation, you might have to stick with the CFS in the original format.

**7. How do you know when a revenue or expense line item should appear on the Income Statement?**

Two conditions **MUST** be true for an item to appear on the Income Statement:

1. **It must correspond to ONLY the period shown on the Income Statement**. This is why monthly rent shows up, but paying for a factory that will last for 10 years does not.

2. **It must affect the company's taxes.** Interest on debt is tax-deductible, so it shows up, but repayment of debt principal is not, so it does not show up.

Whether or not something is received or paid in cash **has nothing to do with this classification** – companies pay taxes on non-cash revenue (e.g., receivables) and save on taxes from non-cash expenses (e.g., depreciation) all the time.

**Advanced Note:** Technically, in point #2 we should say, "It must affect the company's BOOK taxes" (i.e., only the tax number that appears on the Income Statement). Many items that are **not** deductible for cash-tax purposes still appear on the IS and affect book taxes.

**8. How can you tell whether an item should be classified as an Asset, Liability, or Equity on the Balance Sheet?**

An **Asset** will generate **future cash flow** for the company or **can be sold for cash**. Think about how AR means the company *should* receive more cash in the future.

A **Liability** will **cost the company cash** in the future and **cannot be sold** because it represents payments the company owes. Think about Debt or Accounts Payable and how they represent owed payments.

**Equity** line items are similar to Liabilities because they represent **funding sources** for the company – but they will **NOT** result in future cash costs.

They relate to funds the company has saved up on its own or funds that it has raised from outside investors with no cash cost (i.e., equity).

**9. How can you tell whether or not an item should appear on the Cash Flow Statement?**

You list an item on the Cash Flow Statement if:

1) It has already appeared on the Income Statement and affected Net Income, but it's **non-cash**, and you need to adjust for it to determine the company's real cash flow; **OR**

2) It has **NOT** appeared on the Income Statement and it **DOES** affect the company's cash balance.

In category #1 are items such as Depreciation and Amortization; Category #2 includes most of the items in Cash Flow from Investing and Financing, such as Capital Expenditures and Dividends.

Changes in Working Capital could fall into *either* category depending on the change (e.g., an increase in AR is in category #1, but a decrease in AR is in category #2).

**10. A company uses cash-based accounting (i.e., it only records revenue when it is received in cash and only records expenses when they are paid in cash) rather than accrual accounting.**

**A customer buys a TV from the company "on account" (i.e., *without* paying upfront in Cash) and receives the TV right away. How would the company record this transaction differently from a company that uses accrual accounting?**

Under cash-based accounting, the revenue would not show up until the company collects the cash from the customer – at which point it would add to Revenue on the Income Statement (and Pre-Tax Income, Net Income, etc.) and Cash on the Balance Sheet.

Under accrual accounting, the sale would show up as Revenue right away, but instead of appearing in Cash on the Balance Sheet, it would go into Accounts Receivable at first. Then, once the cash is deposited in the company's bank account, it would move into Cash, and Accounts Receivable would decrease.

**11. A company begins offering 12-month installment plans to customers so that they can pay for $500 or $1,000 courses over a year instead of all upfront. How will its cash flow change?**

In the short term – during THIS year – the company's cash flow will decrease because some customers no longer pay upfront in cash.

So, a $1,000 payment in Month 1 now turns into $83 in Month 1, $83 in Month 2, and so on.

This situation corresponds to **Accounts Receivable**: The Asset on the Balance Sheet that represents owed future payments from customers.

The long-term impact depends on how much sales grow as a result of this change.

If sales grow substantially and the company's Revenue and Net Income increase, that might be enough to offset the reduced cash flow and make the company better off.

**12. A company decides to prepay its monthly rent – an entire year upfront – because it can save 10% by doing so. Will this prepayment boost the company's cash flow?**

In the short term, no, because the company is now paying 12 * Monthly Rent in a single month rather than making one payment *per* month.

On the Income Statement in Month 1, the company will still record only the Monthly Rent for that month. But on the Cash Flow Statement, it will list a negative 12 * Monthly Rent under "Change in Prepaid Expenses" to represent the cash outflow for the prepayment.

A 10% discount represents just over 1 month of rent, so the company's immediate cash flow will decrease substantially.

In the *long term*, this discount will improve the company's cash flow because the timing difference will go away after a year.

**13. Your friend is analyzing a company and says that you always have to look at the Cash Flow Statement to find the full amount of Depreciation.**

**Is he right? And if so, what are the implications?**

Yes, your friend is correct. This happens because companies often **embed** Depreciation within other line items, such as COGS and Operating Expenses, on the Income Statement.

That's because portions of Depreciation might correspond to different functions in the company. For example, employees in sales & marketing, research & development, and customer support might all be using computers, so Depreciation of computers would show up in each of those categories.

This fact has several implications: First off, you **CANNOT** assume that the Depreciation listed on the Income Statement is the full amount. A company might list a portion of it as an explicit line item but embed other portions elsewhere.

Second, adding back the full amount on the CFS **shows that Depreciation simply reduces the company's taxes without "costing" it anything in cash**.

This is why Depreciation boosts the company's cash balance as well: the tax savings.

**14. A company mentions that it collects cash payments from customers for a monthly subscription service a year in advance. Why would a company do this, and what is the cash flow impact?**

A company would collect cash payments for a monthly service long in advance **if it has the market power do so**.

It's always better to get cash earlier rather than later because of **the time value of money**, so if the market and customers support this plan, any company would do it.

Often, companies will provide an incentive, such as discounted pricing, a free bonus, or free services to incentivize customers to pay upfront.

This practice always boosts a company's cash flow. It corresponds to **Deferred Revenue**, and on the CFS, an increase in Deferred Revenue will be a positive entry that boosts a company's cash flow.

When this cash is finally recognized as revenue, Deferred Revenue declines, which appears as a negative entry on the CFS.

**15. Why is Accounts Receivable (AR) an Asset, but Deferred Revenue (DR) a Liability?**

Accounts Receivable is an Asset because it corresponds to **future cash payments that customers are expected to make**. An Asset is something that will result in additional cash in the future, or that can be sold for cash, so AR qualifies.

Deferred Revenue is a Liability because it will **cost the company cash in the future**.

The company has *already collected all the cash* associated with this future revenue. So, in the future, when it finally delivers the product or service, it will have to spend something on the delivery and will also have to pay taxes on the revenue it records.

While AR and DR may seem similar, they are **the opposites** of each other: AR has *not* yet been collected in cash but has been *delivered*, whereas DR *has* been collected in cash, but has *not yet been delivered*.

**16. How are Prepaid Expenses, Accounts Payable and Accrued Expenses different, and why are Prepaid Expenses an Asset?**

The difference is very similar to the one above for AR and DR.

Prepaid Expenses have *already* been paid out in cash but have *not* yet been incurred as expenses, so they have not appeared on the Income Statement. When they do finally appear on the Income Statement, they'll reduce the company's future taxes, making them an Asset.

Accounts Payable have *not yet* been paid out in cash but *have* been incurred as expenses, so they *have* appeared on the Income Statement. When the company finally pays them in cash, Accounts Payable will reduce the company's cash, making them a Liability.

Accounts Payable and Accrued Expenses work in exactly the same way, but Accounts Payable is used for specific items with invoices (e.g., legal bills), whereas Accrued Expenses is more for monthly, recurring items without invoices (e.g., utilities).

**17. Your CFO wants to start paying employees mostly in stock-based compensation, under the logic that it will reduce the company's taxes, but not "cost it" anything in cash.**

**Is he correct? And how does Stock-Based Compensation impact the statements?**

The CFO is **partially correct**. Yes, stock-based compensation is a non-cash expense that reduces a company's taxes but gets added back on the CFS, similar to Depreciation.

**However, unlike Depreciation or Amortization, Stock-Based Compensation incurs a real cost to the company and its investors because it creates additional shares**.

In other words, if the existing investors own 99% of the company's shares, those investors might own only 97% or 98% after SBC is issued.

Thus, Stock-Based Compensation makes the company less valuable to the existing investors, even though, *on paper*, it seems to be just like any other non-cash expense.

**18. A junior accountant in your department asks about the different ways to fund the company's operations and how they impact the financial statements. What do you tell him?**

The two main methods of funding a company's operations are **debt** and **equity**. Debt is cheaper for *most* companies (see the previous lessons and guides on WACC and the Discount Rate), so *most* companies prefer to use debt… up to a reasonable level.

Both equity and debt issuances show up on only the Cash Flow Statement initially (in Cash Flow from Financing), and they boost the company's cash balance.

The only "after-effect" of equity is that the company's share count increases. This happens because any investor who buys the company's equity now owns a percentage of the company.

With debt, the company must pay interest, which will be recorded on its Income Statement, reducing its Net Income and Cash, and it must eventually pay back the full balance.

**19. Your company sells equipment for $85. The equipment was listed at $100 on your company's Balance Sheet, so you have to record a Loss of $15 on the Income Statement, which gets reversed as a non-cash expense on the Cash Flow Statement.**

**Why is this Loss considered a non-cash expense?**

This Loss is a non-cash expense because you haven't actually "lost" anything in cash in the current period.

When you sell equipment for $85, you get $85 in cash from the buyer. It's not as if you've "lost" $15 in cash because you sold the equipment at a poor price.

The "Loss" refers to how you previously spent more than $85 to buy this equipment **in some prior period**.

So, if you look at what you spent on the equipment many years ago and compare it to what you sold it for today, it seems like a "loss." **But that doesn't matter because non-cash adjustments are based on what happens in the CURRENT PERIOD**.

**20. Your company owns an old factory that's currently listed at $1,000 on its Balance Sheet. Why would it choose to "write down" this factory's value, and what is the impact on the financial statements?**

A company might **write down** an Asset if its value has declined substantially, and it's no longer accurate to reflect it at the original value on the Balance Sheet.

For example, maybe the factory is damaged by a hurricane or new technology makes the factory obsolete.

On the statements, you record this write-down as an expense on the Income Statement, but you add it back as a non-cash expense on the Cash Flow Statement.

The result is that the company's **cash balance increases due to the tax savings**.

On the Balance Sheet, Cash is up, this Asset's value is down, and Retained Earnings will balance the change on the Assets side because Net Income has decreased.

**21. The CFO of your firm recently unveiled plans to purchase short and long-term investments. Why would she want to do this, and how would this activity affect the statements?**

A company might want to purchase investments if it has excess cash and cannot think of other ways to use it.

For example, the company can't reinvest the cash into hiring more employees, buying more equipment or factories, or acquiring other companies or assets, and it also doesn't want to distribute the cash to investors via dividends or repay its debt.

The initial purchase of these investments will show up only on the Cash Flow Statement and will reduce the company's cash flow.

Afterward, the Interest Income earned on these investments will appear on the Income Statement and boost the company's Pre-Tax Income, Net Income, and its Cash balance.

**22. Could a company ever have negative Equity on its Balance Sheet? If no, why not? If yes, what would it mean?**

Yes, easily. Think about a company that starts losing massive amounts of money, resulting in a negative Net Income. After many years, negative Net Income could easily turn the company's Equity negative.

This might also happen if the company issues a huge dividend to its owners (e.g., following a leveraged buyout) that turns Equity negative.

The "meaning" varies based on what has happened, but negative Equity is **almost always a negative sign** because it means the company has been unprofitable or has done something irresponsible with its dividends or share repurchases.

Negative Equity is also common for tech and biotech startups that record massive losses in their early years due to high spending and no revenue.

**23. Your firm recently acquired another company for $1,000 and created Goodwill of $400 and Other Intangible Assets of $200 on the Balance Sheet. A junior accountant in your department asks you why the company did this – what would you tell him?**

You need to create Goodwill and Other Intangible Assets after an acquisition takes place to ensure that the Balance Sheet balances.

In an acquisition, you write down the seller's Shareholders' Equity and then combine its Assets and Liabilities with those of the acquirer.

If you've paid *exactly* what the seller's Shareholders' Equity is worth – e.g., you paid $1,000 in cash and the seller has $1,000 in Equity, then there are no problems.

The combined cash balance will decrease by $1,000, and so will the combined Equity.

**However, in real life, this almost never happens**. Companies almost always pay **premiums** for companies they acquire, which means that the Balance Sheet will go out of balance.

For example, if the seller here had $400 in Equity instead, the BS would go out of balance immediately because we wipe out $400 in Equity but spend $1,000 in cash.

To fix that problem, you start by allocating value to the seller's "identifiable intangible assets" such as patents, trademarks, intellectual property, and customer relationships. In this case, we allocated $200 to these items.

If there's still a gap remaining after that, you allocate the rest to Goodwill, which explains the $400 in Goodwill here.

**24. How do Goodwill and Other Intangible Assets change over time?**

Goodwill remains constant unless it is "impaired," i.e., the acquirer decides that the acquired company is worth far less and therefore writes down the Goodwill. That appears as an expense on the Income Statement and a non-cash adjustment on the Cash Flow Statement.

Other Intangible Assets amortize over time (unless they are indefinite-lived), and that Amortization shows up on the Income Statement and as a non-cash adjustment on the Cash Flow Statement. The balance decreases until it has amortized completely.

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## Single-Step Changes on the Financial Statements

These questions are straightforward if you've been using our 3-statement "interview question" Excel model to try different scenarios.

Remember the 4 main categories of changes:

1. **Changes to True Cash Items on the Income Statement** – Straightforward since Net Income, Cash, and Retained Earnings change.

2. **Changes to Non-Cash or Re-Classified Items on the Income Statement** – Net Income, Cash, and Retained Earnings change, but something on the Balance Sheet also changes.

3. **Changes to Operational Items on the Balance Sheet** – These are trickier because the effects are different when an item decreases vs. when it increases, so you have to understand what the change *means*.

4. **Changes to Non-Operational Balance Sheet Items or Cash Flow Statement Items** – These are simple since there's no immediate Income Statement impact; something on the CFS will change, Cash will change, and something on the Balance Sheet will change.

We recommend going in this order when answering these questions:

1. Explain how the **Income Statement** changes, if at all.

2. Explain how the **Cash Flow Statement** changes, if at all.

3. Explain how the **Balance Sheet** changes and why it still balances, i.e. why Assets still equal Liabilities + Equity.

You can always assume a **40% tax rate** to simplify the math, but make sure you state that when you explain your answer.

**1. Walk me through the 3 financial statements when a company's operating expenses increase by $100.**

- **Income Statement:** Operating Expenses are up by $100, so Pre-Tax Income is down by $100 and Net Income is down by $60 at a 40% tax rate.

- **Cash Flow Statement:** Net Income is down by $60. There are no other changes, so cash is down by $60 at the bottom.

- **Balance Sheet:** Cash is down by $60, so the Assets side is down by $60, and Retained Earnings on the L&E side is down by $60 due to the reduced Net Income, so both sides balance.

- **Intuition:** Nothing; it's a simple cash expense.

**2. A company's Depreciation increases by $10. What happens on the 3 financial statements?**

- **Income Statement:** Pre-Tax Income falls by $10, and Net Income falls by $6 assuming a 40% tax rate.

- **Cash Flow Statement:** Net Income is down by $6, but you add back the $10 in Depreciation since it's non-cash, so cash flow is up by $4, and cash at the bottom is up by $4.

- **Balance Sheet:** Cash is up by $4, but PP&E is down by $10 due to the added Depreciation, so the Assets side is down by $6. The L&E side is also down by $6 because Net Income fell by $6, which reduced Retained Earnings, so both sides balance.

- **Intuition:** The company **saves on taxes** with a non-cash expense.

**3. A company runs into financial distress and needs cash immediately. It sells a factory that's listed at $100 on its Balance Sheet for $80. What happens on the 3 statements?**

- **Income Statement:** You record a Loss of $20 on the Income Statement, which reduces Pre-Tax Income by $20 and Net Income by $12 at a 40% tax rate.

- **Cash Flow Statement:** Net Income is down by $12, but you add back the $20 Loss since it's non-cash. You also show the full proceeds received, $80, in Cash Flow from Investing, so cash at the bottom is up by $88.

- **Balance Sheet:** Cash is up by $88, but PP&E is down by $100, so the Assets side is down by $12. The L&E side is also down by $12 because Retained Earnings fell by $12 due to the Net Income decrease, so both sides balance.

- **Intuition:** The company gets the $80 in cash proceeds, but it also gets $8 in tax savings from the Loss, so its cash goes up by $88 rather than $8.

**4. A company decides to CHANGE a key employee's compensation. It will offer the employee stock options instead of a real salary. The employee's salary was formerly $100, but she will receive $120 in stock options now. How do the statements change?**

You can think of this one as operating expenses going up by $20, but the company also having $120 in additional non-cash expenses.

- **Income Statement:** Operating expenses increase by $20, so Pre-Tax Income falls by $20, and Net Income falls by $12 at a 40% tax rate.

- **Cash Flow Statement:** Net Income is down by $12, but you add back the $120 in SBC as a non-cash expense, so cash at the bottom is up by $108.

- **Balance Sheet:** Cash is up by $108, so the Assets side is up by $108. On the L&E side, Retained Earnings is down by $12 because of the reduced Net Income, but Common Stock & APIC is up by $120 because of the SBC, so the L&E side is up by $108 and both sides balance.

- **Intuition:** The company saves a lot of cash by not paying the employee in cash anymore, and it also realizes tax savings. Just remember that its share count will also increase.

**5. Your company just acquired another one for $1,000 in cash. The other company's Shareholders' Equity was $500, and you identified $100 in Other Intangible Assets with a useful life of 5 years.**

**What happens on the 3 statements from just AFTER the acquisition closes to the end of the first year following the acquisition? Only factor in Goodwill and Other Intangible Assets.**

In this scenario, the "gap" between the purchase price and the other company's Shareholders' Equity is $500. $100 in Other Intangible Assets and $400 in Goodwill will be created. The Intangibles will amortize $20 per year over 5 years.

- **Income Statement:** Amortization increases by $20, which reduces Pre-Tax Income by $20 and Net Income by $12 at a 40% tax rate.

- **Cash Flow Statement:** Net Income is down by $12, but you add back the $20 in Amortization as a non-cash expense, so cash at the bottom is up by $8.

- **Balance Sheet:** Cash is up by $8, but Other Intangible Assets are down by $20, so the Assets side is down by $12. On the L&E side, Retained Earnings is down by $12 due to the reduced Net Income, so both sides are down by $12.

- **Intuition:** The non-cash Amortization expense increases the company's cash balance by reducing its tax burden.

**6. In the second year, the acquisition goes horribly wrong, and your company realizes the acquired company is worth only about half of what it paid.**

**So, it decides to write down half the Goodwill created in the deal – how do the 3 statements change, and what is the balance after the write-down?**

$400 in Goodwill was created in this deal, so $200 will be left afterward.

- **Income Statement:** You record a $200 Goodwill write-down, which reduces Pre-Tax Income by $200 and Net Income by $120 at a 40% tax rate.

- **Cash Flow Statement:** Net Income is down by $120, but you add back the $200 Goodwill write-down since it's non-cash, so cash at the bottom is up by $80.

- **Balance Sheet:** Cash is up by $80, but Goodwill is down by $200, so the Assets side is down by $120. On the L&E side, Retained Earnings is down by $120 due to the reduced Net Income. There are no other changes, so both sides are down by $120 and balance.

- **Intuition:** The Goodwill write-down is a non-cash expense that reduces the company's tax burden, which boosts its cash balance.

- **Advanced Note:** Write-downs of Goodwill created from acquisitions are often **NOT** deductible for cash-tax purposes, so a DTA/DTL might be involved in real life. Do **NOT** bring up this point voluntarily in an interview.

**7. Walk me through what happens on the statements when a customer orders a product for $100 but doesn't pay for it in cash, and then what happens when the cash is finally collected.**

This scenario corresponds to Accounts Receivable increasing by $100 and then decreasing by $100. First, here's what happens when it increases:

- **Income Statement:** Revenue increases by $100, so Pre-Tax Income is up by $100 and Net Income is up by $60 at a 40% tax rate.

- **Cash Flow Statement:** Net Income is up by $60, but the increase in AR reduces cash flow by $100, so cash at the bottom is down by $40.

- **Balance Sheet:** Cash is down by $40, but AR is up by $100, so the Assets side is up by $60. On the L&E side, Retained Earnings is up by $60 due to the increased Net Income, so both sides are up by $60 and balance.

- **Intuition:** The company has to pay taxes on revenue it hasn't yet received in cash, so its cash balance falls.

And when the AR is collected (factoring in **ONLY** this step):

- **Income Statement:** No changes.

- **Cash Flow Statement:** AR decreases, which is a change of positive $100 since it means the company has collected the cash now. Cash at the bottom is up by $100.

- **Balance Sheet:** Cash is up by $100, but AR is down by $100, so the Assets side doesn't change. The L&E side also doesn't change, so both sides remain in balance.

- **Intuition:** This is a simple cash collection of a payment owed to the company.

**8. A company prepays its rent ($20 per month) a month in advance. Walk me through what happens on the statements when the company prepays the expense, and then what happens when the expense is incurred.**

This scenario corresponds to Prepaid Expenses increasing and then decreasing. First, the increase:

- **Income Statement:** No changes.
- **Cash Flow Statement:** The $20 Increase in Prepaid Expense reduces the company's cash flow by $20, so cash at the bottom is down by $20.
- **Balance Sheet:** Cash is down by $20, but Prepaid Expenses is up by $20, so the Assets side doesn't change. The L&E side also doesn't change, so the Balance Sheet remains balanced.
- **Intuition:** This is a simple cash payment for expenses that have not yet been incurred.

And then when Prepaid Expenses decrease (factoring in **ONLY** this step):

- **Income Statement:** Operating Expenses increase by $20, so Pre-Tax Income falls by $20, and Net Income falls by $12 assuming a 40% tax rate.
- **Cash Flow Statement:** Net Income is down by $12, but the reduction in Prepaid Expenses boosts cash flow by $20, so cash at the bottom is up by $8.
- **Balance Sheet:** Cash is up by $8, and Prepaid Expenses are down by $20, so the Assets side is down by $12. The L&E side is also down by $12 because Retained Earnings has dropped by $12 due to the reduced Net Income, so both sides balance.
- **Intuition:** Cash goes up because this $20 expense is "non-cash" at this point – the company has paid for it in cash in a *prior period* – so it saves the company on taxes.

**9. Wal-Mart buys $500 in Inventory for products it will sell next month. Walk me through what happens on the statements when they first buy the Inventory, and then when they sell the products for $600.**

The first part is a simple Inventory purchase, and the second part is more of a "multi-step scenario" where the company has to record COGS and the revenue associated with the product sales. Here's the first part:

- **Income Statement:** No changes.
- **Cash Flow Statement:** The $500 Inventory increase reduces the company's cash flow, so cash at the bottom is down by $500.
- **Balance Sheet:** Cash is down by $500, but Inventory is up by $500, so the Assets side doesn't change. The L&E side also doesn't change, so the Balance Sheet remains in balance.
- **Intuition:** This is a simple cash purchase for an expense that has not yet been incurred.

And then here's the next part (factoring in **ONLY** this step):

- **Income Statement:** Revenue is up by $600, but COGS is up by $500, so Pre-Tax Income is up by $100 and Net Income is up by $60 at a 40% tax rate.
- **Cash Flow Statement:** Net Income is up by $60, but the decrease in Inventory increases cash flow by $500, so cash at the bottom is up by $560.
- **Balance Sheet:** Cash is up by $560, but Inventory is down by $500, so the Assets side is up by $60. The L&E side is also up by $60 because Net Income was up by $60, and so Retained Earnings was up by $60; therefore, both sides balance.
- **Intuition:** Look at the **CUMULATIVE** change – if you trace through both steps 1 and 2, cash is up by $60 from start to finish. And that increase corresponds to the company's after-tax profit from a $100 pre-tax profit on the sale of these goods.

**10. Amazon.com decides to pay several key vendors on credit and make them wait for the cash. It offers $200 in credit and says it will pay them in cash in a month. What happens on the financial statements when the expense is incurred, and then when it is paid in cash?**

This scenario corresponds to Accounts Payable or Accrued Expenses increasing by $200 and then decreasing by $200 when they're finally paid out in cash.

- **Income Statement:** Operating Expenses increases by $200, so Pre-Tax Income is down by $200 and Net Income is down by $120, assuming a 40% tax rate.

- **Cash Flow Statement:** Net Income is down by $120, but AP increasing by $200 results in higher cash flow since it means the expenses haven't been paid in cash yet. So, cash at the bottom is up by $80.

- **Balance Sheet:** Cash is up by $80, so the Assets side is up by $80. On the L&E side, AP is up by $200, but Retained Earnings is down by $120 due to the reduced Net Income, so the L&E side is up by $80 and both sides balance.

- **Intuition:** This expense is acting like a "non-cash charge" *at this point* because it reduces the company's taxes but doesn't cost them anything in cash. Cash is up because of the lower taxes.

And then here's the next step (factoring in **ONLY** this step):

- **Income Statement:** No changes.

- **Cash Flow Statement:** Accounts Payable decreasing by $200 reduces the company's cash flow by $200, so cash at the bottom is down by $200.

- **Balance Sheet:** Cash is down by $200, so the Assets side is down by $200, and AP is down by $200, so the L&E side is also down by $200 and both sides balance.

- **Intuition:** This is a simple cash payment for an owed expense.

**11. Salesforce.com sells a customer a $100 per month subscription but makes the customer pay all in cash, upfront, for the entire year. What happens on the statements?**

This scenario corresponds to **Deferred Revenue** – collecting cash, but not being able to recognize it as revenue yet. The payment for the entire year is $1,200.

- **Income Statement:** No changes.

- **Cash Flow Statement:** DR increasing by $1,200 will boost the company's cash flow, so cash at the bottom is up by $1,200.

- **Balance Sheet:** Cash is up by $1,200, so the Assets side is up by $1,200, and Deferred Revenue is up by $1,200, so the L&E side is up by $1,200, and both sides balance.

- **Intuition:** This is a simple cash inflow for services the company has not yet delivered.

**12. Now what happens after one month has passed, and the company has delivered one month of service?**

**Assume there are no associated COGS or Operating Expenses, and walk through what happens ONLY in this month.**

- **Income Statement:** Revenue is up by $100, so Pre-Tax Income is up by $100 and Net Income is up by $60, assuming a 40% tax rate.

- **Cash Flow Statement:** Net Income is up by $60, but the decrease in Deferred Revenue reduces cash flow by $100, so cash at the bottom is down by $40.

- **Balance Sheet:** Cash is down by $40, so the Assets side is down by $40. On the L&E side, DR is down by $100, but Retained Earnings is up by $60 because of the increased Net Income, so the L&E side is down by $40 and the Balance Sheet balances.

- **Intuition:** Cash goes down because the company now has to pay taxes on *non-cash revenue*: it collected the cash in some prior period, and now it has to pay taxes on it.

**13. A company issues $100 in stock to new investors to fund its operations. How do the statements change?**

- **Income Statement:** No changes.

- **Cash Flow Statement:** The $100 stock issuance is a cash inflow in Cash Flow from Financing, and there are no other changes, so cash at the bottom goes up by $100.

- **Balance Sheet:** Cash is up by $100, so the Assets side is up by $100, and Common Stock & APIC on the other side goes up by $100, so the L&E side is up by $100 and the BS balances.

- **Intuition:** This is a simple cash inflow that doesn't impact the company's taxes at all.

**14. This same company now realizes that it has too much cash, so it wants to issue dividends or repurchase shares. How do they impact the 3 statements differently? Assume $100 in dividends vs. $100 in shares repurchases.**

These changes both make a very similar impact; the main difference is that dividends do not reduce the shares outstanding, but a share repurchase does.

- **Income Statement:** No changes.

- **Cash Flow Statement:** Both of these will show up as negative $100 entries in Cash Flow from Financing, reducing the cash at the bottom of the CFS by $100.

- **Balance Sheet:** Cash is down by $100, so the Assets side is down by $100; on the L&E side, dividends will reduce Retained Earnings by $100, whereas a share repurchase will reduce Treasury Stock by $100. But in either case, Equity is down by $100, so the L&E side is down by $100 and both sides balance.

- **Intuition:** These are simple uses of cash that don't affect the company's taxes at all.

**15. A company has $1,000 in revenue, $200 in COGS, and $700 in operating expenses, and no other expenses. Walk through what happens on the 3 statements if half of the company's Income Taxes shift from current to deferred.**

First, you have to calculate the company's total tax bill: $1,000 in revenue minus $200 in COGS minus $700 in operating expenses equals $100 in Pre-Tax Income and $40 in taxes at a 40% tax rate.

- **Income Statement:** Nothing changes because you record **BOTH** current **AND** deferred taxes as part of the company's Income Taxes here. So, there's still $40 of Income Taxes.

- **Cash Flow Statement:** Net Income stays the same, but now you have to add back $20 in the Deferred Income Tax line item because these taxes will be paid in some future period. Cash increases by $20 as a result.

- **Balance Sheet:** Cash is up by $20, and so the Assets side is up by $20. On the L&E side, the Deferred Tax Liability will increase by $20 because of this deferral, so both sides increase by $20 and the Balance Sheet balances.

- **Intuition:** This is a simple deferral of a cash expense into a future period, so the company's cash increases in the short term.

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**Multi-Step Changes on the Financial Statements**

These questions get **tricky** because you have to keep track of more numbers in your head.

If you don't feel comfortable doing that, you can ask the interviewer if it's OK to write down a few figures as you're moving along. It's better to do that than to make a mistake.

Sometimes, it is not clear whether you have to state the **CUMULATIVE change** – i.e., what happens after 2 years have passed, from beginning to end – or just the change in a **single year** or after a **single event**.

When in doubt, always ask the interviewer to confirm the treatment.

**1. A company buys a factory for $100 using $100 of debt. What happens INITIALLY on the statements?**

- **Income Statement:** No changes.

- **Cash Flow Statement:** There's no net change in cash because the $100 factory purchase counts as CapEx, which reduces cash flow, and the $100 debt issuance is a cash inflow.

- **Balance Sheet:** PP&E is up by $100, so the Assets side is up by $100, and Debt is up by $100, so the L&E side is up by $100, and the Balance Sheet stays balanced.

- **Intuition:** This is a simple debt issuance and PP&E purchase, neither of which affects the company's taxes.

**2. One year passes. The company pays 10% interest on its debt, and it depreciates $10 on the factory each year. It also repays $20 of the loan each year. What happens on the statements in this first year?**

10% interest corresponds to $10 in interest since we use the beginning debt balance to calculate interest. So:

- **Income Statement:** You record $10 in interest and $10 in Depreciation, so Pre-Tax Income falls by $20, and Net Income falls by $12 at a 40% tax rate.

- **Cash Flow Statement:** Net Income is down by $12, but the $10 in Depreciation is non-cash, so you add it back. The $20 loan repayment counts as a cash outflow, so cash at the bottom of the CFS is down by $22.

- **Balance Sheet:** Cash is down by $22, and PP&E is down by $10, so the Assets side is down by $32. On the L&E side, the Debt is down by $20 and Retained Earnings is down by $12 due to the reduced Net Income, so the L&E side is also down by $32 and both sides balance.

- **Intuition:** Cash declines mostly because of the principal repayment; the interest expense is offset a bit by the tax savings from the Depreciation.

**3. Another year passes. Again, the company pays 10% interest on its debt based on the balance at the start of the year, and it depreciates $10 on the factory, with $20 loan principal repayment.**

**At the very END of the year, a dragon attacks the factory, and it falls apart. The company has to write down the factory's entire value and repay the remaining loan balance.**

**Walk me through what happens on the statements from the BEGINNING of Year 2 to the END.**

Remember that the company only has $80 in debt remaining at the start of Year 2, so the interest expense will be 10% * $80, or $8, rather than $10. The initial PP&E is $90, but $10 of that gets depreciated, and the remaining $80 is written down.

Although there's $20 of debt repayment, it's better to think of this as $80 *during the entire year* because there's $20 in "normal" repayment and then $60 at the end of the year.

- **Income Statement:** You record $10 in Depreciation, $8 in interest expense, and $80 for the PP&E write-down, so Pre-Tax Income falls by $98, and Net Income falls by $59 (technically $58.8, but we're rounding).

- **Cash Flow Statement:** Net Income is down by $59, but the Depreciation and the Write-Down are both non-cash, so you add back a total of $90. Cash is up by $31 so far. Then you factor in the loan repayments – a *total* of $80 – and cash is therefore down by $49.

- **Balance Sheet:** Cash is down by $49, and PP&E is down by $90, so the Assets side is down by $139. On the L&E side, Debt is down by $80 and Retained Earnings is down by $59 due to the reduced Net Income, so the L&E side is down by $139 and both sides balance.

- **Intuition:** Again, cash is down significantly mostly because of the loan repayment; everything else makes a minor impact.

**4. Wal-Mart orders $200 of Inventory but pays for it using debt. What happens on the statements immediately after this transaction?**

- **Income Statement:** No changes.

- **Cash Flow Statement:** Inventory is up by $200, which reduces cash flow by $200, but the debt issuance boosts cash flow by $200, so there's no net change in cash.

- **Balance Sheet:** The Assets side is up by $200 because Inventory is up by $200. The L&E side is also up by $200 because Debt is up by $200, so both sides balance.

- **Intuition:** This is a simple cash payment for an expense not yet incurred, combined with a debt issuance that offsets the cash outflow.

**5. A year passes, and Wal-Mart sells the $200 of Inventory for $400. However, it also has to hire additional employees for $100 to process the orders.**

**The company also pays 5% interest on its debt and repays 10% of the principal. What happens on the statements over the course of THIS one year?**

This question is the standard "Sell inventory for a certain amount of revenue" one, but there are a few twists. For one, we also have to factor in $100 of additional Operating Expenses.

Also, we have to include the $10 interest expense on the debt ($200 * 5%) and the $20 principal repayment ($200 * 10%).

- **Income Statement:** Revenue is up by $400, but COGS is up by $200, and Operating Expenses are up by $100 because of the extra employees. There is *also* $10 of additional Interest Expense because of the 5% interest rate on $200 of debt, so Pre-Tax Income is up by $90. Net Income is up by $54 at a 40% tax rate.

- **Cash Flow Statement:** Net Income is up by $54, and the company's COGS decreasing by $200 frees up an additional $200 of cash flow. So far, cash flow is up by $254. The company also has to repay 10% * $200, or $20, of the debt principal, and so cash at the bottom is up by $234.

- **Balance Sheet:** Cash is up by $234, but Inventory is down by $200, so the Assets side is up by $34. On the L&E side, Debt is down by $20, and Retained Earnings is up by $54 because of the increased Net Income, so the L&E side is up by $34 and both sides balance.

- **Intuition:** The company has bought goods, turned them into finished products, and profited from the sale. The company's cash goes up by less than expected because of the debt principal repayment and interest.

**6. A company issues $100 in Preferred Stock to buy $100 in long-term investments in real estate. The Preferred Stock has a coupon rate of 8%, and the long-term investments yield 10%. What happens on the statements IMMEDIATELY after the initial purchase?**

- **Income Statement:** No changes.

- **Cash Flow Statement:** The purchase of the long-term investments counts as an Investing activity and reduces cash flow by $100, but the Preferred Stock issuance boosts cash flow by $100, so there's no net change in cash.

- **Balance Sheet:** Long-Term Investments is up by $100, so the Assets side is up by $100, and Preferred Stock on the other side is up by $100, so the L&E side is up by $100 and both sides balance.

- **Intuition:** This is a simple cash purchase of investments funded by a Preferred Stock issuance, and neither event affects the company's taxes.

**7. What happens on the statements after a year?**

Although **you subtract Preferred Dividends from Net Income to calculate Net Income to Common**, the Preferred Dividends are **NOT tax-deductible**.

- **Income Statement:** The company will record 10% * $100, or $10, in Interest Income on the real estate, so its Pre-Tax Income increases by $10. At a 40% tax rate, its Net Income goes up by $6. The $8 in Preferred Dividends are **NOT** tax-deductible, so they simply reduce Net Income by $8, and so "Net Income to Common" is down by $2.

- **Cash Flow Statement:** Net Income to Common is down by $2. There are no other changes on the CFS in this period because there's no principal repayment of the Preferred Stock, and nothing changes with the long-term investments. So, cash at the bottom is down by $2.

- **Balance Sheet:** Cash is down by $2, so the Assets side is down by $2. On the other side, Retained Earnings is down by $2, so the L&E side is also down by $2 and both sides balance.

- **Intuition:** The point of this question is that **taxes** play a huge role in making investment decisions. Since the investment income on the real estate is taxable, whereas Preferred Dividends are not, the company **LOSES** money! The after-tax yield of the real estate is only 10% * (1 – 40%), or 6%, which is less than the 8% Preferred coupon.

**8. Another year passes, and prices in this real estate market double. The company decides to sell its $100 in long-term investments for $200 at the end of Year 2. It then uses the proceeds to repay its Preferred Stock.**

**What happens on the statements from the BEGINNING of Year 2, including the interest/investment income and Preferred Dividends, to the END of Year 2?**

- **Income Statement:** Everything from the previous part still applies, so there's still $10 in Investment Income. But now the company also records a Gain of $100 on the sale of the

real estate, so Pre-Tax Income is up by $110, and Net Income is up by $66 at a 40% tax rate. There's still $8 in Preferred Dividends, so Net Income to Common is up by $58.

- **Cash Flow Statement:** Net Income to Common is up by $58, but the $100 Gain is non-cash, so you subtract it out and then show the Total Proceeds Received, $200, within Cash Flow from Investing. You also have to show the $100 repayment of the Preferred Stock, so cash at the bottom is up by $58.

- **Balance Sheet:** Cash is up by $58, but the company's long-term investments have decreased by $100, so the Assets side is down by $42. The L&E side is also down by $42 because Retained Earnings increased by $58 due to the increased Net Income to Common, but Preferred Stock decreased by $100, so both sides balance.

- **Intuition:** This question demonstrates why this investment strategy might make sense: **capital gains**.

**9. Your company wants to boost its EPS artificially, so it decides to issue debt and use the proceeds to buy back shares.**

**Initially, the company has 100 shares outstanding at $100 per share, and a Net Income of $2,000.**

**What happens IMMEDIATELY after your company raises $1,000 in long-term debt and uses it to repurchase $1,000 in stock?**

First, note a few important facts about this scenario. Repurchasing $1,000 in stock at a share price of $100 per share means that the company will repurchase 10 shares. So, its share count drops from 100 to 90.

Its EPS *before* this move was $2,000 / 100, or $20.00. Now, for the first part of this transaction:

- **Income Statement:** No changes.

- **Cash Flow Statement:** The $1,000 Debt issuance boosts cash flow by $1,000, but the $1,000 stock repurchase reduces it by $1,000, so there's no net change in cash.

- **Balance Sheet:** There are no changes on the Asset side. On the L&E side, Debt is up by $1,000, but Treasury Stock within Equity is down by $1,000, so there's no net change, and the BS remains in balance.

- **Intuition:** These are simple cash inflows and outflows that cancel each other out and make no impact on the company's taxes.

**10. What happens after a year passes if the company pays 5% interest on the debt and repays 10% of the principal? Also, explain the EPS impact.**

This question is a twist on the standard 3-statement accounting questions because you also have to calculate **EPS and the change in EPS**.

- **Income Statement:** The company records 5% * $1,000, or $50, in interest expense, and so its Pre-Tax Income falls by $50. At a 40% tax rate, its Net Income is down by $30. The company now has 90 shares outstanding rather than 100, and has Net Income of $1,970 instead of $2,000, so its EPS increases to $21.89 (If you can't do that math in your head, you could just say that EPS "increases").

- **Cash Flow Statement:** Net Income is down by $30, and the company also has to repay 10% of the principal, or $100, so cash is down by $130 at the bottom.

- **Balance Sheet:** Cash is down by $130, so the Assets side is down by $130. On the L&E side, Retained Earnings is down by $30 because of the reduced Net Income, and Debt is down by $100 because of the principal repayment, so the L&E side is down by $130 and both sides balance.

- **Intuition:** This question illustrates how companies can artificially inflate their EPS numbers by making nonsensical moves, such as borrowing at high costs to fund share repurchases. Never trust EPS!

**11. Your company decides to acquire another company for $1,000, using cash. The other company has $400 in Cash, $600 in PP&E, $250 in Accounts Payable, and $750 in Equity.**

**What happens to your company's BALANCE SHEET immediately after this acquisition takes place?**

**Assume that your company has identified $50 in Other Intangible Assets with a useful life of 10 years.**

You combine the other company's Assets and Liabilities with your company's, and you write down the seller's Equity.

So, in this case, the combined company's Cash balance goes down by $600 since you spent $1,000 in cash on the acquisition but got $400 in cash from the other company.

PP&E is up by $600, so the Assets side hasn't changed so far.

But the other side is up by $250 because of the Accounts Payable, so we have a problem.

Since we paid $1,000 for Equity of $750, we must create a total of $250 in Goodwill and Other Intangible Assets.

The question stated that there's $50 in Other Intangible Assets, so we create those on the Assets side, and then we create $200 of Goodwill.

As a result, the L&E side is up by $250, the Assets side is up by $250, and the Balance Sheet balances.

**12. A year passes. What happens on the financial statements, factoring in ONLY the newly created items from the acquisition and the cash used to acquire the company?**

**Assume a 2% foregone interest rate on cash, and assume that the company loses interest on the FULL $1,000 of cash used in the acquisition, not just the net cash reduction of $600.**

- **Income Statement:** The company's interest income decreases by 2% * $1,000, or $20. There will also be Amortization of Intangibles of $50 / 10, or $5. So, Pre-Tax Income falls by $25, and Net Income declines by $15 at a 40% tax rate.

- **Cash Flow Statement:** Net Income is down by $15, but you add back the $5 in Amortization as a non-cash charge, so the company's cash is down by $10.

- **Balance Sheet:** Cash is down by $10, and Other Intangible Assets are down by $5, so the Assets side is down by $15. On the other side, Retained Earnings is down by $15 because of the reduced Net Income, so the L&E side is down by $15 and both sides balance.

- **Intuition:** The main point here is that all acquisitions "cost" the company something – cash from lost interest or additional interest expense, or additional shares that dilute the existing shareholders.

**13. At the end of the year, your company decides that it grossly overpaid for the other company, so it decides to write down the Goodwill and PP&E acquired from the other company by 50%.**

**What happens on the statements, factoring in ONLY these write-downs and nothing else?**

Remember that there's $200 in Goodwill and $600 in PP&E from the other company:

- **Income Statement:** You record a total write-down of $400 ($200 / 2 + $600 / 2), so Pre-Tax Income is down by $400. Net Income is down by $240 at a 40% tax rate.
- **Cash Flow Statement:** Net Income is down by $240, but both these write-downs are non-cash, so you add back a total of $400. Cash is up by $160 at the bottom.
- **Balance Sheet:** Cash is up by $160, but Goodwill is down by $100, and PP&E is down by $300, so the Assets side is down by $240. The L&E side is also down by $240 because Retained Earnings falls by $240 due to the reduced Net Income, and so both sides balance.
- **Intuition:** This is a good example of how overpaying for an acquisition can hurt a company's Net Income and EPS, but boost its cash balance. This is why it's so important to look at **BOTH** Net Income and Cash Generated when analyzing a company.

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## Working Capital, Free Cash Flow, and Other Metrics and Ratios

Questions on these topics are **NOT** terribly common in investment banking interviews; you focus on this analysis more in public markets roles such as equity research.

Still, questions on Working Capital, Free Cash Flow, and returns-based ratios can come up, so we wanted to cover a few examples here.

**1. What is Free Cash Flow, and what does it mean if it's positive and increasing?**

There are different types of Free Cash Flow, but one simple definition is **Cash Flow from Operations minus CapEx**. FCF represents a company's "discretionary cash flow" – how much it has left for other areas after spending what's required for its business.

You define it this way because pretty much everything in a company's "Cash Flow from Operations" section is required for its business – earning Net Income, paying for Inventory, collecting Receivables, etc.

But almost every line item within the Investing and Financing Activities sections is "optional," except for Capital Expenditures.

If FCF is positive and increasing, it means the company can spend its excess cash in different ways: it could hire more employees, spend more on Working Capital or CapEx, invest in other assets, repay debt, acquire other companies, or return money to shareholders with dividends or stock repurchases.

**2. What does FCF mean if it's negative or decreasing?**

You have to find out **why** FCF is negative or decreasing first. For example, if FCF is negative because CapEx in one year was unusually high, but it's expected to return to much lower levels in the future, it doesn't mean much.

On the other hand, if FCF is negative because the company's sales and operating income have been declining each year, that indicates that the business may be troubled.

If FCF decreases to the point where the company runs low on cash, it will have to raise equity or debt funding ASAP and restructure its operations to continue running.

**3. What is Working Capital?**

The official definition of **Working Capital** is "Current Assets minus Current Liabilities," but the more *useful* definition is:

**Working Capital** = Current Assets (Excluding Cash and Investments) – Current Liabilities (Excluding Debt)

This one is sometimes called **Operating Working Capital** instead.

You may also include Long-Term Assets and Liabilities that are related to the company's business operations (Long-Term Deferred Revenue is a prime example).

Working Capital by itself tells you whether a company needs more in *operational assets* or *operational liabilities* to run its business, and how big the difference is. But the **Change in Working Capital** (see below) matters far more for valuation purposes.

**4. Why do you exclude cash, investments, and debt when calculating the Change in Working Capital on the Cash Flow Statement?**

Although many of these items are Current Assets or Current Liabilities, you exclude them because:

- **Cash** – The bottom of the CFS already calculates the Net Change in Cash and the ending Cash balance; if you did it within the Working Capital area, you'd be double-counting it.
- **Investments** – Investment sales and purchases are considered investing activities, not operational ones, even if they're short-term.
- **Debt** – Debt issuances and repayments are considered financing activities, not operational ones, even if the debt is short-term.

**5. A company's Working Capital has increased from $50 to $200. You calculate the Change in Working Capital by taking the new number, $200, and subtracting the old number, $50, and so the change is positive $150.**

**But on the Cash Flow Statement, the company records the Change in Working Capital as negative $150. Is the company wrong?**

No, the company is correct. *On the Cash Flow Statement*, the **Change in Working Capital** is equal to Old Working Capital – New Working Capital.

Pretend that Working Capital consists of ONLY Inventory. If Inventory increases from $50 to $200, that is clearly a use of cash that will reduce the company's cash flow, and as such, it should be shown as a negative $150 on the CFS.

You can also think of this one by breaking down the individual components:

Change in WC = Old WC – New WC

Change in WC = (Old Current Assets – Old Current Liabilities) – (New Current Assets – New Current Liabilities)

Change in WC = (Old Current Assets – New Current Assets) + (New Current Liabilities – Old Current Liabilities)

So, like everything else on the Cash Flow Statement, **if assets increase, they reduce the cash flow**. And if liabilities increase, the opposite happens.

When a company's Working Capital **INCREASES**, the company **USES** cash to do that; when Working Capital **DECREASES**, it **FREES UP** cash.

**6. What does the Change in Working Capital mean?**

The Change in Working Capital tells you if the company needs to spend in **ADVANCE** of its growth, or if it generates more money as a **RESULT** of its growth.

For example, the Change in Working Capital is almost always negative for retailers because they must spend money on Inventory before being able to sell products.

But the Change in Working Capital is often positive for subscription-based companies that collect cash from customers far in advance because Deferred Revenue increases whenever they do that.

The Change in Working Capital directly increases or decreases Free Cash Flow, which, in turn, directly affects the company's valuation.

**7. You're comparing two companies. Company A's Change in Working Capital as a % of the Change in Revenue is 10%, but Company B's is negative 5%.**

**Which industries are these companies MOST likely to be in?**

Company A is most likely in an industry without much upfront investment in Inventory required, such as professional services, software, or media and telecom. In these industries, customers often pay upfront for longer-term contracts and services, which makes the Change in Working Capital even more positive.

Company B is likely in an industry with more upfront investment in Inventory required, such as retail or manufacturing. The company might also be in an industry where it has little power to "delay" payments to suppliers, meaning that its operational assets will tend to grow by more than its operational liabilities over time.

**8. What does it mean if a company's FCF is growing, but its Change in Working Capital is more and more negative each year?**

It means that the company's Net Income or non-cash charges are growing by more than its Change in WC is declining, or that its CapEx is becoming *less* negative (i.e., shrinking) by more than the Change in WC is declining.

If a company's Net Income is growing for legitimate reasons, this is a positive sign. But if higher non-cash charges or artificially reduced CapEx are boosting FCF, both of those are negatives.

**9. In its filings, a company states that its EBITDA is a reasonable "proxy" for its Cash Flow from Operations. The company's EBITDA has been positive and growing at 20% for the past three years.**

**However, the company recently filed for bankruptcy. How could this have happened?**

Although EBITDA is *sometimes* a "proxy" for CFO, it is not even close to a perfect representation of a company's cash flow. Think about all the items that EBITDA excludes:

- **CapEx** – Very high CapEx spending might have pushed the company to bankruptcy.
- **Interest Expense and Debt Repayment Obligations** – Same as above. In particular, if the company's debt all matures on one date and the company cannot refinance or does not have enough cash to pay for it, bankruptcy could result.
- **Working Capital** – If the company is spending a massive amount on Inventory, to the point where it's *losing* heaps of money as it grows, that could have also played a role.
- **One-Time Charges** – If EBITDA excludes large "one-time" expenses such as legal and restructuring charges, those could also affect the company's cash balance.

**10. A company's ROA has INCREASED from 10% to 15% over the past five years, but its ROE has DECREASED from 13% to 10%. What could have caused this?**

Both ROA and ROE have Net Income in the numerator, so it must be something in the denominators.

Let's say that Net Income *increased* over this period. If that's the case, then the company's Total Assets must have increased by a *lower percentage* than Net Income.

But if ROE decreased, then the company's Equity must have increased by a *greater percentage* than Net Income.

So, one potential cause might be that the company has been continually issuing equity to fund its cash flow-negative business.

When the company issues stock, it boosts its Equity on the Balance Sheet and prevents its cash balance from declining. But the company's Total Assets also don't change by much because the cash raised does not make it to the Balance Sheet – it offsets losses elsewhere in the business.

**11. A company seems to be boosting its ROE artificially by using leverage to fuel its growth. Which metrics or ratios could you look at to confirm or deny your suspicion?**

Leverage can artificially boost ROE because Debt does not affect the denominator of ROE (Equity), and it makes only a small impact on the numerator (Net Income).

To see if this is happening, you could check the company's Debt/EBITDA and EBITDA/Interest ratios – if they indicate that the company has been using more debt over time, it's a good bet that Debt has been at least partially responsible for the increased ROE.

**12. A company's Current Ratio is 2x. Why is that NOT necessarily a positive sign?**

The Current Ratio is defined as Current Assets / Current Liabilities, so it depends on what's *in* both those groups.

For example, if the company's Current Assets consist primarily of Receivables and almost no Cash, and its Current Liabilities consist of Accrued Expenses, a Current Ratio of 2x is negative because it means the company is waiting on a lot of cash from customers and also has to pay a lot of cash in the future for expenses already incurred.

On the other hand, if the company's Current Assets are primarily Cash and its Current Liabilities are primarily Deferred Revenue, this 2x ratio would be more positive because it means that the company has collected significant cash in advance of product/service delivery.

**13. Would you expect a retailer or an airline company to have a higher Asset Turnover Ratio?**

Generally, the retailer will have a *higher* Asset Turnover Ratio (Revenue / Average Assets) because it is *less* dependent on assets to generate its sales. Yes, retailers need to sell Inventory

to make money, but they *don't* necessarily need to own their own stores, factories, etc. – many retailers actually lease their stores.

An airline will tend to have a lower Asset Turnover Ratio because it is completely dependent on PP&E to generate revenue: without its planes, it can't do much of anything.

And yes, some airlines also lease their planes rather than owning them outright, but *almost every* major airline owns a decent percentage of its planes.

**14. What does it say about a company if its Days Receivables Outstanding is ~5, but its Days Payable Outstanding is ~60?**

It tells you that the company has quite a lot of **market power** to collect cash from customers quickly, but to delay paying its suppliers for a long time. Examples might be companies like Amazon and Wal-Mart that completely dominate their respective markets and that can coerce suppliers into agreeing to their terms.

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