Course 1

Fundamentals of Financial Planning

Lesson 4: Personal Financial Statements

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Introduction

Individuals come to financial planners because they need help with their financial future. In some cases they need help because they do not have the time to do it themselves, but in most cases it is because the financial planner is more knowledgeable. While most people can provide a basic overview of their financial position, it will be the job of the financial planner to analyze their client's financial statements to get the full picture.

Objectives

In this lesson, we will focus our attention on the four key personal financial statements and also how to apply those statements to ratios financial planners can use to evaluate and provide feedback for their clients. Therefore, in this course, we will begin by looking at the four key personal financial statements before moving on to the ratios that can be used to interpret them.

The four key personal financial statements are:

- **Statement of Financial Position (Balance Sheet)**
- **Income and Expense Statement**
- **Statement of Cash Flows**
- **Statement of Changes in Net Worth**

The financial statements can be interpreted through:

- **Liquidity Ratios**
- **Debt Ratios**
- **Performance Ratios**
- **Net Composite Rate of Return**

Study Tools

The following printable files are available to assist you as you study this material. These files may be opened and printed with Adobe Reader. If you do not have Adobe Reader, it may be downloaded free of charge by clicking the following link: http://www.adobe.com/products/acrobat/readstep2.html.

Statement of Financial Position

The ***statement of financial position*** (a.k.a. ***balance sheet***) is one of the most fundamental documents a financial planner uses. It is a snapshot of a person's financial position at a certain point in time. As such, the balance sheet should always contain a specific date in the heading.

The following is an example of a statement of financial position, which will be used throughout the course. In the next few pages, we will learn more about each section of the balance sheet.

Brian and Jamie Porretto
Balance Sheet
12/31/08

Assets			**Liabilities and Net Worth**			
Cash/Cash Equivalents			**Current Liabilities**			
JT	Checking Account	$1,075	JT	Credit Cards	$2,980
JT	Savings Account	$1,100	JT	Mortgage on Principal Residence	$1,050
	Total Cash/Cash Equiv.	$2,175	JT	Car Loans	$500
			H	Motorcycle Loan	$550
				Total Current Liabilities	$5,080
Invested Assets					
H	ABC Stock	$15,000	**Long-Term Liabilities**		
JT	Educational Fund	$13,560	JT	Mortgage on Principal Residence	$106,114
JT	SEP IRA	$31,619	JT	Car Loans	$24,000
	Total Invested Assets	$60,179	H	Motorcycle Loan	$11,973
				Total Long-Term Liabilities	$142,087
Personal Use Assets					
JT	Principal Residence	$180,000			
JT	Automobiles	$35,000			
H	Motorcycle	$18,000	**Total Liabilities**		**$147,167**
JT	Boat	$5,500			
W	Jewelry	$10,400			
JT	Furniture/Household	$55,000			
	Total Personal Use Assets	$303,900	**Net Worth**		**$219,087**
Total Assets		**$366,254**	**Total Liabilities and Net Worth**		**$366,254**

H = Husband; W = Wife; JT = Joint Tenancy

The statement of financial position appears in most case study questions on the Board Exam.

Assets

The left side of the statement of financial position lists the assets. An ***asset*** is any property owned by an individual or company, which can generally be converted into cash. Assets are listed at **fair market value (FMV)** and are comprised of cash and cash equivalents, investments, and personal use assets. **Click on each of the three asset classes in the statement of financial position (balance sheet) to learn more.**

Fair market value is the value a well informed buyer is willing to accept from a well informed seller when neither is compelled to buy or sell.

Brian and Jamie Porretto
Balance Sheet
12/31/08

Assets

Cash/Cash Equivalents		
JT	Checking Account	$1,075
JT	Savings Account	$1,100
	Total Cash/Cash Equiv.	$2,175
Invested Assets		
H	ABC Stock	$15,000
JT	Educational Fund	$13,560
JT	SEP IRA	$31,619
	Total Invested Assets	$60,179
Personal Use Assets		
JT	Principal Residence	$180,000
JT	Automobiles	$35,000
H	Motorcycle	$18,000
JT	Boat	$5,500
W	Jewelry	$10,400
JT	Furniture/Household	$55,000
	Total Personal Use Assets	$303,900
Total Assets		**$366,254**

Cash/Cash Equivalents

Cash and cash equivalents are the most liquid of the assets, meaning they can easily and quickly be converted into cash, with little or no risk of loss of principal. Examples would include cash, savings accounts, checking accounts, or certificates of deposit. These are generally referred to as liquid assets.

Investments

Investments are generally assets that are held for income, growth, or capital appreciation. They can be distinguished on the balance sheet as either ***currently taxed*** or ***not currently taxed***, which is useful for tax and distribution purposes. Examples of currently taxed investments include equities, corporate bonds, or collectibles (stamps, baseball cards). Investments not currently taxed would generally include municipal bonds or tax-deferred annuities.

Personal Use Assets

Personal use assets are used for the personal enjoyment or benefit of the client rather than held for investment purposes. They are generally the least liquid of the assets. Examples include a house or automobile.

Because it is important to be able to distinguish one asset class from the other, the following table provides examples of each.

Cash/Cash Equivalents	Investments	Personal Use Assets
• Cash • Checking account • Savings account • Money market funds • Cash value of life insurance	• Stocks and bonds • Real estate • Retirement accounts • Annuities • Cash value of variable life insurance	• Residence • Automobiles • Furniture • Jewelry • Personal effects

Liabilities and Net Worth

Liabilities are any debt, claim, or potential loss. They can be classified as either current or long term. Net worth, as its name and position on the statement imply, is an indicator of a person's total wealth. **Click on each highlighted term in the statement of financial position (balance sheet) to learn more.**

Brian and Jamie Porretto
Balance Sheet
12/31/08

Liabilities and Net Worth

Current Liabilities		
JT	Credit Cards	$2,980
JT	Mortgage on Principal Residence	$1,050
JT	Car Loans	$500
H	Motorcycle Loan	$550
	Total Current Liabilities	$5,080
Long-Term Liabilities		
JT	Mortgage on Principal Residence	$106,114
JT	Car Loans	$24,000
H	Motorcycle Loan	$11,973
	Total Long-Term Liabilities	$142,087
Total Liabilities		**$147,167**
Net Worth		**$219,087**
Total Liabilities and Net Worth		**$366,254**

Current Liabilities

Current liabilities are all liabilities that are generally due within one year. Examples include monthly mortgage payments, credit card bills, or insurance premiums.

Long-Term Liabilities

Long-term liabilities are liabilities that generally come due beyond one year from the present. Examples of long-term liabilities include a home mortgage, car loan, or student loans.

Net Worth

Net worth, also called ***shareholder's equity*** or ***net assets*** in a business, is simply total assets minus total liabilities. It is defined as the amount of equity the client has in owned assets.

Board Released Question

A client provides a current personal balance sheet to the financial planner during the initial data-gathering phase of the financial planning process. This financial statement will enable the financial planner to gain an understanding of all of the following except the:

○ Diversification of the client's assets

Incorrect. The correct answer is "size of the client's net cash flow". The balance sheet (Statement of Financial Position) lists assets, liabilities, and net worth on a specific date. It does not provide any information about cash flows. Diversification of assets, liquidity, and use of debt can all be determined from the information listed on the balance sheet.

● Size of the client's net cash flow

Correct. The balance sheet (Statement of Financial Position) lists assets, liabilities, and net worth on a specific date. It does not provide any information about cash flows. Diversification of assets, liquidity, and use of debt can all be determined from the information listed on the balance sheet.

○ Client's liquidity position

Incorrect. The correct answer is "size of the client's net cash flow". The balance sheet (Statement of Financial Position) lists assets, liabilities, and net worth on a specific date. It does not provide any information about cash flows. Diversification of assets, liquidity, and use of debt can all be determined from the information listed on the balance sheet.

○ Client's use of debt

Incorrect. The correct answer is "size of the client's net cash flow". The balance sheet (Statement of Financial Position) lists assets, liabilities, and net worth on a specific date. It does not provide any information about cash flows. Diversification of assets, liquidity, and use of debt can all be determined from the information listed on the balance sheet.

Income and Expense Statement

The ***income and expense statement***, shown below, also called a ***statement of income and expense***, offers a summary of the client's income and expenses (and only income and expenses) during a specified time period, generally one year. Given that the cash flow statement (also called the income and expense statement) covers a period of time, the heading contains both the first date and the last date of the period covered. Study the table below to recognize some advantages of analyzing the income and expense statement.

Brian and Jamie Porretto Statement of Income and Expense Jan. 1, 2008 – Dec. 31, 2008		
INCOME		
Salary – Brian		$55,000
Salary – Jamie		$35,000
Investment Income		
Interest Income	$950	
Dividend Income	$300	$1,250
Total Inflow		**$91,250**
Savings		
Educational Fund	$1,600	
SEP IRA	$4,750	
Reinvestment (Interest/Dividend)	$1,250	
Total Savings		**$7,600**
Available for Expenses		**$83,650**
EXPENSES		
Ordinary Living Expenses		
Food	$4,900	
Clothing	$3,800	
Entertainment	$3,100	
Utilities	$4,100	
Gas	$1,800	
House Upkeep	$2,000	
Child Care Provider	$6,500	
Total Ordinary Living Expenses		**$26,200**
Debt Payments		
Mortgage Payment (principal)	$1,050	
Mortgage Payment (interest)	$18,500	
Credit Card Payment (principal)	$250	
Credit Card Payment (interest)	$550	
Car Loan (principal)	$500	
Car Loan (interest)	$6,750	
Motorcycle Loan (principal)	$550	
Motorcycle Loan (interest)	$3,200	
Total Debt Payments		**$31,350**
Insurance Premiums		
Automobile Insurance Premiums	$1,200	
Homeowners Insurance Premiums	$1,050	
Total Insurance Premiums		**$2,250**
Taxes		
Federal Income Tax (withholding)	$9,000	
State Income Tax	$950	
FICA	$6,200	
Property Tax	$1,400	
Total Taxes		**$17,550**
Total Expenses		**$77,350**
Discretionary Cash Flow		**$6,300**

ADVANTAGES

- The income and expense statement is extremely useful to financial planners because instead of taking a snapshot of the client's financial picture, like the balance sheet, it presents the client's financial activities over a time interval. This can give the financial planner a better understanding of exactly how the client earns, spends, and maintains wealth.

- The income and expense statement can be prepared in two ways:

  1. First, it can be prepared after all expenses and income have been realized, making it useful for comparison to budgeted goals.
  2. Or it can be prepared in advance, making it useful for budgeting for the future.

The basic formula for the income and expense statement calculates the discretionary flow. Continue on to the next page to learn more about DCF.

Discretionary Cash Flow

Discretionary cash flow generally refers to the amount of cash that is left over after all expenses have been paid. The formula used to calculate DCF is quite simple. **Click on the three components to learn more.**

Discretionary Cash Flow = **Income** - **Savings** - **Expenses**

Income

Income comes in the form of:

Employment Income	Investment Income	Other Income
▪ Wages/salary ▪ Bonuses ▪ Commission	▪ Dividends ▪ Capital gains	▪ Social Security ▪ Annuities ▪ Inheritances/ gifts

Savings

Savings would be just a regular savings account or credit union account.

Expenses

Expenses can be fixed, variable, or discretionary.

Board Released Question

Robert Smith asks for your help in preparing his cash flow statement. He tells you that his salary before taxes is $250,000 and that he has NO mortgage on his home. Which of the following statements is true about Robert's cash flow statement?

○ The value of the home would be an income source since there is **NO** mortgage.

Incorrect. The correct answer is the fourth choice. Taxes are an expense item included on this statement. The entries in the Cash Flow Statement (Income and Expense Statement) are income and expenses only. Therefore, the second and third choices are incorrect. Although he has no mortgage expense, there is no indication in the question that Robert is receiving any income from his home, so the first choice is also incorrect.

○ The value of the home would be an asset.

Incorrect. The correct answer is the fourth choice. Taxes are an expense item included on this statement. The entries in the Cash Flow Statement (Income and Expense Statement) are income and expenses only. Therefore, the second and third choices are incorrect. Although he has no mortgage expense, there is no indication in the question that Robert is receiving any income from his home, so the first choice is also incorrect.

○ The taxes on his salary would be a liability.

Incorrect. The correct answer is the fourth choice. Taxes are an expense item included on this statement. The entries in the Cash Flow Statement (Income and Expense Statement) are income and expenses only. Therefore, the second and third choices are incorrect. Although he has no mortgage expense, there is no indication in the question that Robert is receiving any income from his home, so the first choice is also incorrect.

● The taxes on his salary would be an expense.

Correct. Taxes are an expense item included on this statement. The entries in the Cash Flow Statement (Income and Expense Statement) are income and expenses only. Therefore, the second and third choices are incorrect. Although he has no mortgage expense, there is no indication in the question that Robert is receiving any income from his home, so the first choice is also incorrect.

The Statement of Cash Flows

When looking at two balance sheets dated one year apart, it is easy to identify ***where*** changes have occurred, but it is not so easy to identify ***why*** changes have occurred. These changes between balance sheets are caused by two factors:

1. Cash flows in and out of various accounts.
2. Changes in the net worth of assets.

For example, an investment account may show up as worth $50,000 in the latest balance sheet, but the prior balance sheet might show it as worth $40,000. The $10,000 increase in its value may have been caused by a contribution of additional cash into the account or an increase in the market value of the securities in the account, or a combination of both. To understand how we got from $40,000 to $50,000, we need some type of accounting for both cash flows and changes in net worth.

The ***statement of cash flows*** is used to explain the differences between balance sheets that are caused by changes in cash flows. These changes in cash flows are derived from changes in operations, investments, and financing activities. Differences caused by changes in net worth of assets will be discussed on the following page. **Click each highlighted term on the statement of cash flows to learn more.**

Brian and Jamie Porretto Statement of Cash Flows For the year ending 12/31/08		
Cash from/for Operations (Income Statement)		
Discretionary cash flow from income statement		**$6,300**
Adjustments to operating cash flows		
Increase in Investments from Savings		
Educational Fund	$1,600	
SEP IRA	$4,750	$6,350
Decrease in Liabilities from Principal Repayments		
Mortgage in Principal Residence	$1,050	
Car Loan	$500	
Motorcycle Loan	$550	
Credit Card Debt	$250	$2,350
Total Cash from Operations		**$15,000**
Cash from/(for) Investment Activities		
Boat		($5,500)
Increases of Investments from Savings		
Educational Fund	($1,600)	
SEP IRA	($4,750)	($6,350)
Total Cash from Investments		**($11,850)**
Cash from/(for) Financing Activities		
Decreases in liabilities from principal repayments		
Mortgage on Principal Repayments	($1,050)	
Car Loan	($500)	
Motorcycle Loan	($550)	
Credit Card Debt	($250)	($2,350)
Total Cash From Financing		**($2,350)**
Net Increase (Decrease) in Cash Flows		$800
Ending Cash and Cash Equivalents		$2,175
Beginning Cash and Cash Equivalents		($1,375)
Net Increase (Decrease) in Cash Flows		$800

Note: The Porretto's bought a boat during 2008. They paid for it in cash, causing the large decrease in cash flow.

Operations

Operations measure net cash flow derived from normal working and living. Deficits may occur in the short term, but positive net cash flow is generally necessary to meet financial goals and obligations.

In our example, cash flows resulted in an increase in investments from savings of $6,350 and, as principal was paid down on loans, a favorable decrease in liabilities (which positively impacts net worth) of $2,350.

Investment Activities

Investment activities refer to gains or losses resulting from the purchase or sale of investment assets (net capital gains or losses). This is generally where the cash flow for future goals and for maintaining current lifestyles comes from.

In our example, the increase of cash into investments from savings (by $6,350) is offset by a reduction in the cash balance when the funds were transferred to the investments. Since the boat is not a cash or cash equivalent item, this statement only shows the cash outlay with no offsetting transfer into another cash equivalent account.

Financing Activities

Financing activities is the cash flow resulting from taking on and repaying debt. Cash flow increases in this section would mean an increase in debt, while a decrease in cash means debt has been repaid.

In our example, the decrease in liabilities is offset by the cash that was used to pay down principal, thereby decreasing the liability.

Ending Cash and Cash Equivalents

Ending cash and cash equivalents is taken directly off the most recent balance sheet.

Beginning Cash and Cash Equivalents

Beginning cash and cash equivalents is taken directly off the previous balance sheet.

Net Increase (Decrease) in Cash Flows

The net increase (decrease) in cash flows is the change in the cash balances between the two balance sheets. In this case, there is an increase of $800 between the two balance sheets. All of the entries in this statement of cash flows detail the cash flows that resulted in this increase of $800. In this way, it reconciles the changes caused by cash flow from one statement to the other.

The Statement of Changes in Net Worth

The ***statement of changes in net worth***, like the cash flow statement, summarizes changes between two balance sheets. But in this case, the only changes under consideration are changes in the worth of assets. **Click the highlighted term to learn more.**

Examples of changes in account balances that would be reflected in the statement of changes in net worth would include:

- Changes in assets due to appreciation or depreciation
- An asset other than cash being exchanged for assets; e.g., when buying a new car, the credit given for the old car
- Assets other than cash donated to charities
- Assets other than cash received as a gift or inheritance

Brian and Jamie Porretto
Statement of Changes in Net Worth
For the Year Ending
12/31/08

Additions to Net Worth	
Add (Non-Cash flow adjustments to net worth)	
Increases in Assets:	
Appreciation of Assets	
Residence	$8,000
Jewelry	$400
Purchase	
Boat	$5,500
Appreciation of Investments	
Educational Fund	$700
SEP IRA	$350
Increase of Investment Contributions	
Educational Fund	$1,600
SEP IRA	$4,750
Decrease in Liabilities (Debt Repayments):	
Mortgage on Principal Residence	$1,050
Car Loan	$500
Motorcycle Loan	$550
Credit Card Debt	$250
Total	**$23,650**
Reductions in Net Worth	
Less (Non-Cash Flow Adjustments to Net Worth)	
Decrease in Assets:	
Depreciation of Assets	
Automobile	($3,300)
Depreciation of Investments	
ABC Stock	($2,130)
Total	**($5,430)**
Net Non-Cash Flow Change in Net Worth	**$18,220**
Beginning Net Worth (Beginning balance sheet)	$206,367
Plus changes from Cash Flow Statement	$800
Plus change from Statement of Changes in Net Worth	$18,220
Ending Net Worth (Ending Balance Sheet)	**$225,387**

Additions to Net Worth

The numbers in this statement equal the difference between the values that would have been on the Porretto's balance sheet dated 12/31/07, and the values shown on the balance sheet in this course. For example, in the balance sheet dated 12/31/08, the value of the Porretto's home is $180,000. Looking at the Statement of Changes in Net Worth, we see the house appreciated $8,000. This means the value of the Porretto's house on the 12/31/07 balance sheet would have been $172,000.

Review Exercise

1. Where would a financial planner look to find a client's net worth at year's end?

   - ● Statement of Financial Position

     Correct!

   - ○ Income and Expense Statement

     Incorrect. The income and expense statement does not list net worth.

   - ○ Statement of Cash Flows

     Incorrect. The statement of cash flows does not list net worth.

   - ○ None of the above

     Incorrect. One of the responses will list the net worth.

2. The government has just created a new financial instrument called a wiggle. Individuals may purchase wiggles from the government, and may only redeem them in 5 years for twice the face value, or in ten years for three times the face value. Where would this instrument be placed on a statement of income and expense in the year it was purchased?

   - ○ Investment income

     Incorrect. Income is not realized until the wiggle is redeemed.

   - ○ Savings

     Incorrect. This would not be listed as savings.

   - ○ Living Expenses

     Incorrect. Living expenses are not financial instruments.

   - ● It would not appear on the statement of income and expense.

     Correct! This would be listed as an invested asset in the statement of financial position. Well done!

3. Bill has discretionary cash flow of $2,500, long-term liabilities of $23,000, income of $76,000, and expenses of $48,000. What are his savings?

   - ○ $2,500

     Incorrect. Long-term liabilities are not included in the DCF equation.

   - ○ $5,000

     Incorrect. Try rearranging the equation without using long-term liabilities.

- ● $25,500

  Correct! Well done!

- ○ $28,000

  Incorrect. You may have forgotten to subtract the DCF. Try again.

4. The statement of financial position is a summary of a person's cash flow activity over a period of time.

   - ○ True

     Incorrect. The balance sheet is a snapshot of a person's financial standing, not a summary.

   - ● False

     Correct! The balance sheet is a snapshot.

Analyzing Personal Financial Statements

The second part of this lesson involves analyzing personal financial statements. Analyzing personal financial statements is a general concept that is specifically accomplished by performing ratio analysis. Ratio analysis is helpful in gaining insight into the financial situation of the client, as ratios clarify and improve the understanding of the various financial statements.

The ratios covered in the following pages will include:

- **Liquidity Ratios (2)**
- **Debt Ratios (4)**
- **Performance Ratios:**
  - **Savings Ratios (2)**
  - **Investment Ratios (3)**
- **Net Composite Rate of Return**

Liquidity Ratios

The two most common liquidity ratios are the emergency funds ratio and the current ratio. They measure the ability of the client to meet short-term needs by comparing short-term liabilities to short-term assets. Examples of each can be seen in the next two pages.

Emergency Funds Ratio

The ***emergency funds ratio*** is used to determine the amount of money the client has available to cover nondiscretionary expenses in case of unemployment, disability, or death. The target is for the client to have enough liquid assets in reserve to cover 3-6 months of non-discretionary (fixed) expenses.

$$\text{Emergency Funds Ratio} = \frac{\text{Liquid Assets}}{\text{Monthly Nondiscretionary Expenses}}$$

The Current Ratio

The ***current ratio*** measures current assets against current liabilities, which indicates the ability to pay off short-term debts. It is calculated by dividing current assets by current liabilities. The target ratio is 1.0 (or 1:1) to 2.0 (or 2:1), meaning it would be ideal to have between equal current assets to current liabilities and 2 times as many current assets as current liabilities.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Emergency Funds Ratio

Emergency Funds Ratio	=	Liquid Assets / Monthly Nondiscretionary Expenses

Example: Using the statements shown below, what would the emergency funds ratio for Brian and Jamie be? *Note: These tables are cut from the previous tables in this lesson.*

Liquid Assets:

Calculating liquid assets is easy. Simply take the number from the total cash/cash equivalents in the balance sheet. So, **liquid assets = $2,175.**

Brian and Jamie Porretto
Balance Sheet
12/31/08

Assets

Cash/Cash Equivalents		
JT	Checking Account	$1,075
JT	Savings Account	$1,100
	Total Cash/Cash Equiv.	$2,175

Monthly Nondiscretionary Expenses:

Calculating the monthly nondiscretionary expenses is a bit more involved. First, we would establish that the Porretto's monthly expenses are roughly $6,445 ($77,350 ÷ 12). From that number, we would subtract monthly expenses that we could possibly eliminate in the event that cash flow ceases (lost job, disability, etc.). Note that financial planners need to consult with their client on expenses that can be eliminated; these are just an example.

These expenses could include:

Entertainment:	$3,100
House Upkeep:	$2,000
Child Care Provider:	$6,500
Federal Taxes:	$9,000
State and City Taxes:	$950
FICA	$6,200
Expenses Eliminated	$27,750

So, the annual nondiscretionary expenses would be $49,600 ($77,350 - $27,750). On a monthly basis, **the monthly nondiscretionary expenses equal $49,600 ÷ 12, which is $4,133.**

Brian and Jamie Porretto
Statement of Income and Expense
Jan. 1, 2008 – Dec. 31, 2008

EXPENSES		
Ordinary Living Expenses		
Food	$4,900	
Clothing	$3,800	
Entertainment	$3,100	
Utilities	$4,100	
Gas	$1,800	
House Upkeep	$2,000	
Child Care Provider	$6,500	
Total Ordinary Living Expenses		**$26,200**
Debt Payments		
Mortgage Payment (principal)	$1,050	
Mortgage Payment (interest)	$18,500	
Credit Card Payment (principal)	$250	
Credit Card Payment (interest)	$550	
Car Payment (principal)	$500	
Car Payment (interest)	$6,750	
Motorcycle Loan (principal)	$550	
Motorcycle Loan (interest)	$3,200	
Total Debt Payments		**$31,350**
Insurance Premiums		
Automobile Insurance Premiums	$1,200	
Homeowners Insurance Premiums	$1,050	
Total Insurance Premiums		**$2,250**
Taxes		
Federal Income Tax (withholding)	$9,000	
State Income Tax	$950	
FICA	$6,200	
Property Tax	$1,400	
Total Taxes		**$17,550**
Total Expenses		**$77,350**
Discretionary Cash Flow		**$6,300**

Emergency Funds Ratio:

Now plug those two numbers into the emergency funds ratio:

Brian and Jamie's EFR = $2,175 ÷ $4,133 = .53

This means Brian and Jamie have .53 months of emergency funds, well below the target of 3-6 months.

Current Ratio

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Example: Using only the balance sheet, calculate Brian and Jamie's current ratio. Note, once again, only the necessary component of the balance sheet has been reproduced here.

Current Assets:
The current assets would equal the total cash/cash equivalents, **$2,175**.

Brian and Jamie Porretto
Balance Sheet
12/31/08

Assets

Cash/Cash Equivalents		
JT	Checking Account	$1,075
JT	Savings Account	$1,100
	Total Cash/Cash Equiv.	$2,175

Current Liabilities:
The number for current liabilities is also taken directly from the balance sheet. In Brian and Jamie's case, their current liabilities equal **$5,080**.

Brian and Jamie Porretto
Balance Sheet
12/31/08

Liabilities

Current Liabilities		
JT	Credit Cards	$2,980
JT	Mortgage on Principal Residence	$1,050
JT	Car Loans	$500
H	Motorcycle Loan	$550
	Total Current Liabilities	$5,080

Current Ratio:
Now we can plug the two numbers into the current ratio formula.

Brian and Jamie's current ratio = $2,175 ÷ $5,080 = .43

Brain and Jamie have a current ratio of .43, which falls short of the relative target ratio.

The Board differentiates marketability and liquidity. Marketability indicates the availability of a market to purchase a seller's assets at any price. Liquidity requires the availability of a market willing to purchase a seller's assets without loss of principle. Thus, all liquid assets have marketability, but not all marketable assets are liquid.

Debt Ratios

Debt ratios are an indicator of how well the client is managing debt. Debt can be both good and bad, depending on how much is held and for what purpose it is used. Individuals that consistently repay debt build good credit and gain access to credit more easily in the future. In contrast, individuals that build up debt and fail to repay it consistently are considered risky investments and may have a difficult time obtaining loans.

There are two keys to remember when assessing debt:

1. **Look at the trends between periods**
2. **Look at the purpose for the acquisition of debt**

Total Debt to Net Worth

The ***total debt to net worth*** ratio indicates the portion of a person's total assets that come from debt as compared to net worth. Based on an individual's lifecycle phase, it should decrease as a person gets older.

$$\text{Total Debt To Net Worth} = \frac{\text{Total Debt}}{\text{Net Worth}}$$

Long-Term Debt to Net Worth

The ***long-term debt to net worth*** ratio does not include short-term debt, providing a clearer picture of the client's capital structure. Again, this ratio should hopefully decrease as people get older.

$$\text{Long-Term Debt To Net Worth} = \frac{\text{Long-term debt}}{\text{Net Worth}}$$

Total Debt to Total Assets

The ***total debt to total assets*** ratio reveals how much of a client's assets are secured by debt. Again, this number will hopefully decrease as years pass.

$$\text{Total Debt To Total Assets} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

Long-Term Debt to Total Assets

The ***long-term debt to total assets*** ratio takes the total debt to total assets ratio a bit further by focusing on purely long-term debt. This is debt that can't generally be eliminated very quickly. Like all the other debt ratios, the client should hopefully be decreasing this ratio every year.

$$\text{Long-Term Debt To Total Assets} = \frac{\text{Long-Term Debt}}{\text{Total Assets}}$$

Click here to see an example of each of the debt ratios.

Example: Calculating debt ratios is relatively simple. Just find the correct information from the balance sheet and plug it into the equations.

Total Debt to Net Worth

$147,167 ÷ $225,387 = **.653**

Long-Term Debt to Net Worth

$142,087 ÷ $225,387 = **.630**

Total Debt to Total Assets

$147,167 ÷ $366,254 = **.402**

Long-Term Debt to Total Assets

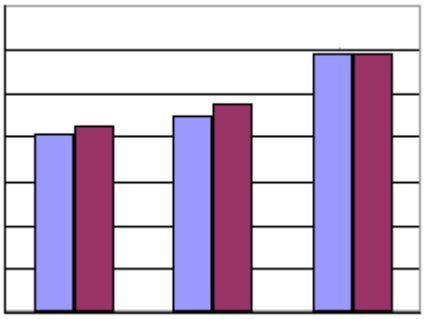
$142,087 ÷ $366,254 = **.388**

Brian and Jamie Porretto
Balance Sheet
12/31/08

Liabilities and Net Worth

Current Liabilities		
JT	Credit Cards	$2,980
JT	Mortgage on Principal Residence	$1,050
JT	Car Loans	$500
H	Motorcycle Loan	$550
	Total Current Liabilities	$5,080
Long-Term Liabilities		
JT	Mortgage on Principal Residence	$106,114
JT	Car Loans	$24,000
H	Motorcycle Loan	$11,973
	Total Long-Term Liabilities	$142,087
Total Liabilities		**$147,167**
Net Worth		**$225,387**
Total Liabilities and Net Worth		**$366,254**
Total Assets		**$366,254**

Performance Ratios



Just as certain performance ratios can evaluate the performance of any business, individuals can assess their own financial performance. Performance ratios assess the client's flexibility and progress towards reaching financial goals, as well as help to understand how to evaluate the return on their investments. In short, they assess the client's performance in terms of savings and investments. The two sets of performance ratios we will be looking at in the following pages are:

- **Savings Ratios**
- **Investment Ratios**

Savings Ratios

Savings ratios are used to assess the client's savings pattern and movement towards a specific goal. Two ratios accomplish this: the savings ratio and the discretionary cash flow (DCF) plus savings to gross income ratio.

Savings Ratio

The ***savings ratio*** determines the percentage of the client's annual income that is actually being saved. The general target for a savings ratio is 10% or more of annual income. However, this target may be higher depending on the client's age and where they are in the lifestyle phases. Someone 30 years old and in the accumulation phase should be at around 10%, while someone over 50 and in the conservation phase should be in the 15-20% range. **Click highlighted terms for more information.**

$$\text{Savings Ratio} = \frac{\text{Annual Savings}}{\text{Annual Gross Income}}$$

Annual savings includes personal and employer-related savings.

Click here to see an example.

Example: Looking at Brian and Jamie's savings ratio below, it appears they need to work on saving more money.

$7,600 ÷ $91,250 = .083

Brian and Jamie Porretto
Statement of Income and Expense
Jan. 1, 2008 – Dec. 31, 2008

INCOME		
Salary – Brian		$55,000
Salary – Jamie		$35,000
Investment Income		
Interest Income	$950	
Dividend Income	$300	$1,250
Total Inflow		**$91,250**
Savings		
Educational Fund	$1,600	
SEP IRA	$4,750	
Reinvestment (Interest & Dividend)	$1,250	
Total Savings		**$7,600**

Discretionary Cash Flow Plus Savings to Gross Income Ratio

The ***discretionary cash flow plus savings to gross income ratio*** adds in discretionary income to the previous ratio to show what could possibly be saved, allowing the client to compare that to their actual savings ratio.

Click here to see an example.

Example: After adding Brian and Jamie's DCF to their annual savings, we see they could potentially be saving a lot more.

($7,600 + $6,300) ÷ $91,250 = .152

Brian and Jamie Porretto Statement of Income and Expense Jan. 1, 2008 – Dec. 31, 2008	
Discretionary Cash Flow	**$6,300**

Investment Ratios

Investment performance ratios are used to evaluate the performance of the client's investments. The three investment ratios are income on investment ratio, the return on investment (ROI) ratio, and investment assets to gross income ratio.

> Note: For the following investment ratios, assume Brian and Jamie's invested assets on January 1, 2008 were **$59,099.**

Income on Investment Ratio

Like the name suggests, the ***income on investment ratio*** reveals how much income clients are actually receiving from their investments over a specified period of time. Like the debt ratios, the ideal investment ratio target depends on the client's position in the lifecycle phase. It should normally be low during the accumulation phase when they are investing in growth assets, and gradually increase through the distribution phase. **Click highlighted terms for more information.**

Income on Investment Ratio = **Income from Investments / Average Invested Assets**

- Income from investments includes interest and dividends.
- To calculate average invested assets, simply add the invested assets from the two balance sheets of the time period desired, and divide by two.

Click here to see an example.

Example: Using both the income and expense statement and the balance sheet, we can calculate Brian and Jamie's income on investment ratio for the year 2008.

Average Invested Assets:

($59,099 + $60,179) ÷ 2 = $59,639

Brian and Jamie Porretto
Balance Sheet
12/31/08

Invested Assets		
H	ABC Stock	$15,000
JT	Educational Fund	$13,560
JT	SEP IRA	$31,619
	Total Invested Assets	$60,179

Income on Investment Ratio = $1,250 ÷ $59,639

Income on Investment Ratio = .021

Brian and Jamie Porretto
Statement of Income and Expense
Jan. 1, 2008 – Dec. 31, 2008

INCOME		
Salary – Brian		$55,000
Salary – Jamie		$35,000
Investment Income		
Interest Income	$950	
Dividend Income	$300	$1,250
Total Inflow		**$91,250**

Rate of Return on Investment (ROI) Ratio

The ***rate of return on investment ratio*** takes the year's gain in investments minus savings and gifts, and divides that number by the average invested assets for the year. The resulting ratio gives us a number that can be compared against related indices and indicators such as the S&P 500 or similar mutual funds. The target number for this ratio depends on the client's willingness to accept risk, but the historical returns average between 9% and 12%. **Click highlighted terms to learn more.**

$$\text{Rate of Return on Investment Ratio} = \frac{\text{EI} - \text{BI} - \text{Savings} - \text{Gifts}}{\text{Average Invested Assets}}$$

Ending Investment – Beginning Investment

Click here to see an example.

Example: Assuming the Porretto's had no additional savings besides what was on their income and expense statement for 2008, and assuming they received a gift of $2,000, we can calculate their rate of return on investment ratio for 2008.

$$\text{ROI} = \frac{\$60{,}179 - \$59{,}099 - \$7{,}600 - \$2{,}000}{\$59{,}639}$$

ROI = – .143

While this number may seem low, it is important to remember that it should be compared against asset classes with similar structure to the Porretto's investments, and that the 9 – 12% average is over a long period of time, not one year.

Brian and Jamie Porretto
Statement of Income and Expense
Jan. 1, 2008 – Dec. 31, 2008

INCOME		
Salary – Brian		$55,000
Salary – Jamie		$35,000
Investment Income		
Interest Income	$950	
Dividend Income	$300	$1,250
Total Inflow		**$91,250**
Savings		
Educational Fund	$1,600	
SEP IRA	$4,750	
Reinvestment (Int/Div)	$1,250	
Total Savings		**$7,600**
Available for Expenses		**$83,650**

Investment Assets to Gross Income

The ***investment assets to gross income ratio*** provides an indication of the additional capital the client will need at retirement. The target depends on the length of time the client has until retirement. The closer to retirement clients are, the higher their ratio should be. A person with ten years until retirement should generally have a ratio between 3 and 4, while a person with 20 or more years until retirement only needs a ratio between 1 and 2. **Click highlighted terms to learn more.**

Investment Assets to Gross Income Ratio = **Total Investment Assets** / Gross Income

You would use the latest number here.

Click here for an example.

Example: Again using the income and expense statement and the balance sheet, we can easily calculate Brian and Jamie's investment assets to gross income ratio.

Brian and Jamie Porretto Statement of Income and Expense Jan. 1, 2008 – Dec. 31, 2008		
INCOME		
Salary – Brian		$55,000
Salary – Jamie		$35,000
Investment Income		
Interest Income	$950	
Dividend Income	$300	$1,250
Total Inflow		**$91,250**

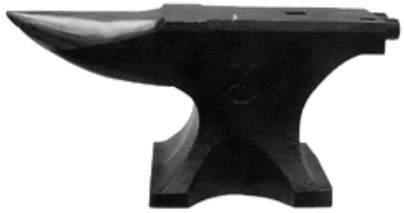
Investment assets to gross income ratio = $60,179 / $91,250

Investment assets to gross income ratio = .659

This number is a bit low, especially if Brian and Jamie are planning on retiring in the near future. They need to work on increasing their investment assets to gross income ratio to ensure they will have sufficient funds for their retirement.

Dollar Weighted Rate of Return

The final equation that we will look at is the ***dollar weighted rate of return***, also known as the ***composite rate of return***. If you have never computed a weighted return, click **here** for an example.



Computing a Dollar Weighted Rated of Return

Suppose you have a portfolio with two assets with the following return:

Asset	Asset Value	Return
ABC	$60,000	8%
XYZ	$40,000	5%
Total	$100,000	**?**

How do you compute the dollar weighted return (composite return) of the portfolio? The answer is to weigh the return of each asset by its representative holding in the total portfolio. In other words, if one asset makes up 60% of the total holdings in the portfolio, you would multiply its rate of return by 60%. Do this for each asset and total the results to get the weighted return.

Asset	Asset Value		Return		% of Portfolio		Weighted Return
ABC	$60,000	x	8%	x	.60	=	4.8%
XYZ	$40,000	x	5%	x	.40	=	2.0%
Total	$100,000				1.0		**6.8%**

In practice, it is helpful to adjust the return of all holdings for taxes. This is known as the ***net weighted average rate of return,*** or the ***net composite rate of return***. To accomplish this requires breaking assets into three different classes:

- **Assets currently taxed at ordinary income rates**
- **Assets currently taxed at capital gains rates**
- **Tax advantaged assets**

After determining the appropriate classes for each asset, the objective is to get a weighted return on each asset class (net of taxes) and finally combine the asset classes back together to get a final **NET COMPOSITE RATE OF RETURN.**

The example on the following page will help to clear up any confusion. *Note: For this example, we will not be using the information from Brian and Jamie Porretto. All asset information is listed in the example.*

Net Composite Rate of Return Example

Example: The following data is first broken into its three asset classes and a weighted rate of return is computed for each. All these rates of return have already been adjusted for taxes. As a final step, the returns for each asset class are combined together and a composite rate of return is computed for all asset classes.

Note: For now, do not worry about knowing which assets go in which asset classification. Just focus on understanding the process.

Client Data		
Asset	**FM Value**	**Rate of Return**
Checking	$ 4,000	2.5%
Savings	12,000	3.5%
CD	20,000	5.5%
Mutual Fund*	30,000	10.0%
IRA	7,500	8.0%
401(k)	90,000	11.0%
Annuity	25,000	6.5%
Growth Stock*	50,000	8.0%
Profit Sharing Plan	45,000	7.0%
*no dividends paid	Marginal Tax Bracket = 31%	Capital Gains Rate = 20%

Taxed at Ordinary Income Rates				
Asset	**FMV**	**Return**	**% of Total**	**Weighted**
Checking	4,000	2.5%	.1111	.2778
Savings	12,000	3.5%	.3333	1.1666
CD	20,000	5.5%	.5556	3.0558
Subtotal	**36,000**		**1.0000**	**4.5000**
Net of taxes				**3.1050**

To get the net of taxes return for this asset taxed at income rates, you must multiply the weighted return by 1 minus the tax rate. (4.5 x (1 - .31))

Taxed at Capital Gains Rate				
Asset	**FMV**	**Return**	**% of Total**	**Weighted**
Mutual Fund	$30,000	10.0	.3750	3.7500
Growth Stock	50,000	8.0	.6250	5.0000
Subtotal	**$80,000**		**1.0000**	**8.7500**
Net of taxes				**7.0000**

To get the net of taxes return for this asset taxed at capital gains rates, you must multiply the weighted return by 1 minus the tax rate. (8.75 x (1- .20))

Tax Advantaged Assets				
Asset	**FMV**	**Return**	**% of Total**	**Weighted**
IRA	$ 7,000	8.0	.0419	.3352
401(k)	90,000	11.0	.5389	5.9279
P/S Plan	45,000	7.0	.2695	1.8865
Annuity	25,000	6.5	.1497	.9731
Subtotal	**$167,000**		**1.0000**	**9.1227**
Net of Taxes				**9.1227**

No taxes are taken from these assets

Net Composite Rate of Return				
Taxed At:	**FMV**	**Return**	**% of Total**	**Weighted**
Ordinary	$ 36,000	3.105	.1272	.3950
Capital Gains	80,000	7.000	.2827	1.9789
Tax Advantaged	167,000	9.1227	.5901	5.3833
Subtotal	**$283,000**		**1.0000**	**7.7572**

This number represents the Net Composite Rate of Return for all of the assets owned by the client.

Review Exercise

Use the following financial statements to answer the review questions:

Mike and Becky Thayer
Balance Sheet
12/31/08

Assets

Cash/Cash Equivalents		
JT	Checking Account	$xxxxx
JT	Savings Account	$2,300
	Total Cash/Cash Equiv.	$5,175
Invested Assets		
JT	Educational Fund	$xxxxxx
JT	Roth IRA	$35,000
W	Mutual Fund	xxxxxxx
	Total Invested Assets	$105,110
Personal Use Assets		
JT	Principal Residence	$xxxxxxx
JT	Automobiles	$xxxxxxx
W	Jewelry	$35,000
JT	Furniture/Household	$xxxxxxx
	Total Personal Use Assets	$xxxxxxx
Total Assets		**$535,285**

Liabilities and Net Worth

Current Liabilities		
JT	Credit Cards	$1,650
JT	Mortgage on Principal Residence	$1,550
JT	Car Loans	$900
	Total Current Liabilities	$4,100
Long-Term Liabilities		
JT	Mortgage on Principal Residence	$166,200
JT	Car Loans	$29,000
	Total Long-Term Liabilities	$195,200
Total Liabilities		**$199,300**
Net Worth		**$335,985**
Total Liabilities and Net Worth		**$535,285**

H = Husband; W = Wife; JT = Joint Tenancy

Mike and Becky Thayer Statement of Income and Expense Jan. 1, 2008 – Dec. 31, 2008		
INCOME		
Salary – Mike		$65,000
Salary – Jamie		$45,000
Investment Income		
Interest Income	$1050	
Dividend Income	$400	$1,450
Total Inflow		**$xxxxxx**
Savings		
Educational Fund	$5,000	
Roth IRA	$7,700	
Reinvestment (Interest/Dividends)	$1,450	
Total Savings		**$14,150**
Available for Expenses		**$97,300**
EXPENSES		
Ordinary Living Expenses		
Food	$3,800	
Clothing	$4,500	
Entertainment	$10,100	
Utilities	$4,900	
Gas	$2,100	
Child Care Provider	$8,500	
Total Ordinary Living Expenses		**$28,900**
Debt Payments		
Mortgage Payment (principal)	$3,200	
Mortgage Payment (interest)	$22,000	
Credit Card Payment (principal)	$450	
Credit Card Payment (interest)	$700	
Car Payment (principal)	$900	
Car Payment (interest)	$9,300	
Total Debt Payments		**$xxxxx**
Insurance Premiums		
Automobile Insurance Premiums	$1,500	
Homeowners Insurance Premiums	$1,650	
Total Insurance Premiums		**$3,150**
Taxes		
Federal Income Tax (withholding)	$16,500	
State Income Tax	$1,050	
FICA	$8,200	
Property Tax	$2,950	
Total Taxes		**$27,200**
Total Expenses		**$95,800**
Discretionary Cash Flow		**$xxxx**

1. Fill in the blank: The current ratio for Mike and Becky equals __1.26__.

   Correct!

   Incorrect. The current ratio is current assets divided by current liabilities.

2. Fill in the blanks with the correct debt ratio for Mike and Becky.

   Total debt to net worth = ___0.59__.

   Correct.
   Incorrect. Try again.

   Long-term debt to net worth = ___0.58__.

   Correct.
   Incorrect. Try again.

   Total debt to total assets = ___0.37__.

   Correct.
   Incorrect. Try again.

   Long-term debt to total assets = ___0.36 or 0.37__.

   Correct.
   Incorrect. Try again.

3. Given that Mike and Becky are in their 30's, their savings ratio would be considered to be within the range it should be in.

   - ● True

     Correct.

   - ○ False

     Incorrect. 30 year-olds saving ratio should be around 10%. The savings ratio is annual savings divided by annual gross income.

4. How good was Mike and Becky's rate of return on investment compared to the S&P 500 in 2008, assuming the S&P gained 7%?

   - ○ Better

     Incorrect. Try again.

   - ○ Worse

     Incorrect. Try again.

○ About the same

Incorrect. Try again.

● Not enough information

Correct. The rate of return on investment cannot be calculated because we need another balance sheet. To calculate ROI, you need a beginning and ending investment value.

5. Fill in the blank: Mike and Becky's investment assets to gross income ratio equals ___0.94__.

Correct.

Incorrect. The investment assets to gross income formula is total investment assets divided by gross income (total inflow).

6. Calculate the total debt to total assets ratio given the following information (**ignore Mike and Becky's financial statements**).

Total Liabilities = $85,300
Net Worth = $103,240

Total Debt to total assets ratio equals:

● 0.45

Correct. $85,300 ÷ $188,540 = 0.45

○ 0.55

Incorrect. You may have calculated net worth divided by total assets. Try again.

○ 0.83

Incorrect. Net worth does not equal total assets.

○ Not enough information

Incorrect. Total assets can be calculated using the information given.

Conclusion

This concludes Lesson 4: Personal Financial Statements. You should now be familiar with each statement and the ratios used to analyze them. The next lesson will focus on debt management.