

CHAPTER 1: Overview of Investing

Did You Know?

The U.S. and other developed countries have much lower rates of inflation (typically 0-4.0% as of 2017) than developing countries such as Argentina (25.7%), Egypt (23.5%), and South Sudan (187.9%)¹

Most people who save money do not put all of it into a bank savings account. While bank products like savings accounts and even Certificates of Deposit (CDs) allow for easy access of funds, these accounts typically don't pay much interest. Investing, on the other hand, offers an opportunity to put your money to work and increase earnings on a much larger scale.

There are many different ways to invest, and all have pros and cons. The key is to build a strategy that fits your individual needs.

- The first step is to set an objective — how do you plan to use your investment, and when? Are you building a nest egg for retirement in 40 years? Saving to send a child to college in 15 years? Or maybe you want to accumulate additional wealth in five years? Each of these objectives requires a different investing strategy.
- Next, you'll need to weigh your budget — an investor who can only put aside a little bit of money is likely to invest very differently from someone who has a lot of extra cash.

Once you've answered these basic questions, there are two factors to consider when choosing how to allocate your investment dollars: **inflation** and **risk**.

Calculating Inflation

Each year, it may seem that your **disposable income** buys less and less, and the cost of goods and services grows more and more. This is not an illusion — everything from food, clothing, and gasoline to books, movie tickets, and video games is likely to increase in price from year to year. This is what's known as inflation. It is caused by a number of economic factors and measured as a percentage of change from one year to the next. For example:

- Assume that you purchased a T-shirt for \$12.99.
- A year later, when you purchase the same shirt for a friend, the cost is \$13.99.

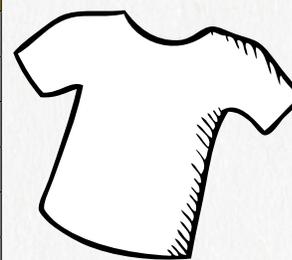


- Over the course of one year, the cost of the shirt increased by \$1.00.
- To determine the inflation rate, you divide the price increase (\$1.00) by the original price of the shirt (\$12.99) for a percentage increase of 7.7%.

You can use this rate to predict the cost of those T-shirts in upcoming years. Let's say you are making a budget for next year. Assuming the inflation rate is consistent, you would multiply the most current cost (\$13.99) by 7.7%, for a price increase of \$1.08. Add that to the current cost and you can estimate that the T-shirt will cost \$15.07 next year.

If you wanted to estimate the impact of inflation over time, you could do a **price series**. Again assuming a consistent inflation rate of 7.7% per year, the following table would reflect T-shirt prices for the next five years:

T-SHIRT PRICE SERIES	
Last year	\$12.99
This year	\$13.99
Future year 1	\$15.07
Future year 2	\$16.23
Future year 3	\$17.48
Future year 4	\$18.83
Future year 5	\$20.28



In this example, the prices for last year and this year are actual prices. The other prices are **projections**, hypothetical prices based on the assumption that this year's inflation rate of 7.7% will continue forever into the future. Using a price series to project future costs in this way can help you predict how much money you will need, say, in retirement, in order to have the same lifestyle you enjoy today.

¹ <https://www.cia.gov/library/publications/resources/the-world-factbook/fields/229.html>

Career Link

When people plan for retirement, they estimate how much money they will need well into the future. Social Security is a key consideration for many, and actuaries have been deeply involved in analyzing the financial soundness of the Social Security System. One part of their analysis is to estimate how the cost of living will change over time and how it will affect future Social Security benefits.



The Consumer Price Index

The Bureau of Labor Statistics (www.bls.gov) publishes an important measure of inflation called the **Consumer Price Index (CPI)**. The CPI is based on the combined price of a **market basket of goods and services**, a set of hundreds of commonly purchased items categorized into eight major groups. The items can change over time, but as of 2018, the groups, along with examples of items found in each, are:

CPI MARKET BASKET	
CATEGORY	EXAMPLES
Food/ Beverages	breakfast cereal, milk, coffee, chicken, wine, full service meals, snacks
Housing	rent of primary residence, owners' equivalent rent, fuel oil, bedroom furniture, tools, and hardware
Apparel	men's shirts and sweaters, women's dresses, jewelry
Transportation	new and used vehicles, airline fares, gasoline, motor vehicle insurance, public transportation
Medical Care	prescription drugs and medical supplies, physicians' services, eyeglasses and eye care, hospital services
Recreation	televisions, toys, pets and pet products, sports equipment, admissions (tickets to events, movies, etc.)
Education and Communication	college tuition, childcare and nursery school, educational books, postage, telephone services, computer software and hardware
Other Goods and Services	tobacco, haircuts and other personal services, funeral expenses

Read more at [bls.gov/opub/hom/pdf/cpi-20180214.pdf](https://www.bls.gov/opub/hom/pdf/cpi-20180214.pdf)

While no individual or family spends their money exactly according to the market basket used to calculate the CPI, it offers a general guideline for average consumers in cities across the country. It is a useful tool that can help you estimate how your overall **cost of living** will change from month to month and year to year.

As an investor, you can create a customized market basket of goods and services by tracking the monthly or yearly prices of the items that you spend money on. This can help you better understand your spending and plan for the future.

Investment Returns vs. Inflation

Why is it important for investors to understand inflation? Let's suppose that an investor's customized market basket of goods and services costs \$1,000 at a particular point in time. Let's also suppose that he or she invests \$1,000 at that same point in time in a **portfolio** of stocks and bonds. One year later, assume that the same market basket now costs \$1,050. In other words, the annual inflation rate was 5%. The investor will still be able to buy the market basket of goods and services if his or her portfolio is worth at least \$1,050. However, if the portfolio is worth less than \$1,050, the investor won't have enough money to buy the entire basket of goods and services. In this example, unless the annual total return on the investment portfolio is at least 5%, the investor's portfolio will be insufficient.

The key is that your investments need to grow at a rate that is equal to or greater than the average annual inflation rate. If your annual return is lower than inflation, then you will actually lose **purchasing power**. Keep in mind that investment growth will fluctuate from year to year, and so most investment portfolios will not be able to beat inflation every year. But, over an extended period of time (usually five years or more), the portfolio's average annual total return must exceed the average annual inflation rate.

There is one more important factor: investors must pay taxes each year on the interest and dividends they earn from their investments. If the investor sells the portfolio assets, he or she will also pay taxes on any **capital gains**. For the portfolio to maintain its purchasing power, the total return must exceed the inflation rate after these taxes. The challenge faced by many investors is to consistently earn total returns after taxes that at least match the inflation rate, particularly when inflation rates are high.

Activity 1

ESTIMATING INFLATION

PART 1: PRICE PROJECTIONS

Last year you purchased a pair of jeans for \$75.00 at your favorite store. This year that same pair of jeans is priced at \$89.00.

1. What is the inflation rate for these jeans?

This year's price	- Last year's price	= Price increase	÷ Last year's price	= Inflation rate
\$	\$	\$	\$	%

2. If that inflation rate remains consistent, how much will the jeans cost in the future? Use a calculator to fill in the chart.

JEANS PRICE SERIES – CONSISTENT INFLATION RATE					
Last year	This year	Future year 1	Future year 2	Future year 3	Future year 4
\$75.00	\$89.00	\$	\$	\$	\$

3. Which years reflect actual prices? _____ Hypothetical prices? _____

4. Inflation rates are rarely consistent from year to year. Estimate the prices if the inflation rate is 5% higher in future year 2 than it was this year, then another 3.5% higher in future year 3, and then falls by 2% in future year 4.

JEANS PRICE SERIES – CHANGING INFLATION RATE					
Last year	This year	Future year 1	Future year 2 (inflation +5%)	Future year 3 (inflation +3.5%)	Future year 4 (inflation -2%)
\$75.00	\$89.00	\$	\$	\$	\$



Activity 1

ESTIMATING INFLATION

PART 2: YOUR COST OF LIVING



Create your own sample market basket of goods and services by completing the chart below. For each category, select one item that you typically buy and enter the price you are paying this year. Then visit the Bureau of Labor Statistics Consumer Price Index page (www.bls.gov/cpi/home.htm) to look up the current inflation rate for each category. Use this information to calculate the projected price for each item next year. Use the completed chart to answer the questions below.

Category	Good/ Service Selected	Current Price	Current Inflation Rate	Price Next Year Based on Current Inflation Rate
Food/Beverages		\$	%	\$
Housing		\$	%	\$
Apparel		\$	%	\$
Transportation		\$	%	\$
Medical Care		\$	%	\$
Recreation		\$	%	\$
Education & Communication		\$	%	\$
Other Goods and Services		\$	%	\$
TOTAL		\$		\$

1. What is the average rate of inflation for all goods and services in your market basket?

Total Price Next Year	- Total Price This Year	= Annual Price Increase	÷ Total Price This Year	= Inflation rate
\$	\$	\$	\$	%

2. As an investor, what would your annual average rate of return need to be for your portfolio in order to keep up with the inflation rate? _____

Explain how you calculated this. _____

3. If your purchasing power were reduced by inflation, which goods/services would you cut from your market basket? Why? _____

4. As a consumer and an investor, why is it important to be in tune with inflation? _____

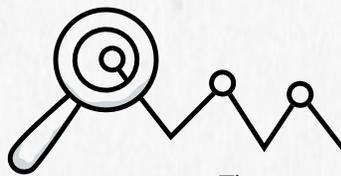
Activity 2

UNDERSTANDING RISK

PART 1: COMPARING OPTIONS

You are given \$1,000 to invest, and have a choice between two investments. The first is a low-risk option that earns a steady return of 6% per year. Your returns for the first 10 years will look like this:

LOW-RISK INVESTMENT ACCOUNT				
Year	Opening Balance	Interest Rate	Interest	Ending Balance
1	\$1,000.00	6%	\$60.00	\$1,060.00
2	\$1,060.00	6%	\$63.60	\$1,123.60
3	\$1,123.60	6%	\$67.42	\$1,191.02
4	\$1,191.02	6%	\$71.46	\$1,262.48
5	\$1,262.48	6%	\$75.75	\$1,338.23
6	\$1,338.23	6%	\$80.29	\$1,418.52
7	\$1,418.52	6%	\$85.11	\$1,503.63
8	\$1,503.63	6%	\$90.22	\$1,593.85
9	\$1,593.85	6%	\$95.63	\$1,689.48
10	\$1,689.48	6%	\$101.37	\$1,790.85



The second is a high-risk option that varies from year to year. If you could see into the future, you'd find that the annual growth/loss rate of return for this option would be as shown in the chart below. Use a calculator to fill in the blanks on the chart, then use it to answer the questions.

HIGH-RISK INVESTMENT ACCOUNT				
Year	Opening Balance	Growth/Loss Rate	Growth/Loss	Ending Balance
1	\$1,000.00	-12.00%	\$	\$
2	\$	-4.00%	\$	\$
3	\$	-9.00%	\$	\$
4	\$	29.00%	\$	\$
5	\$	24.00%	\$	\$
6	\$	26.00%	\$	\$
7	\$	10.00%	\$	\$
8	\$	6.00%	\$	\$
9	\$	12.00%	\$	\$
10	\$	14.00%	\$	\$

- Which account will have a higher balance after two years? _____
- Which account will have a higher balance after six years? _____
- Describe what you see in terms of comparing growth between the accounts.

- Which account will have a higher balance after 10 years? _____
- Which investment was a better choice? _____

PART 2: RISK TOLERANCE IN ACTION

- You have just won \$10,000 on a TV game show. Now you must choose between keeping the \$10,000 and quitting the game, or betting the entire \$10,000 in one of three alternative scenarios – if you win, your earnings increase; if you lose, you lose everything. Which do you choose?
 - _____ a. Keep the \$10,000 – it's better to leave with something than nothing!
 - _____ b. 50 percent chance of winning \$50,000
 - _____ c. 20 percent chance of winning \$75,000
 - _____ d. 5 percent chance of winning \$100,000
- Which of the following investments would you choose:
 - _____ a. Potential to earn \$600 or lose \$150
 - _____ b. Potential to earn \$2,000 or lose \$1,000
 - _____ c. Potential to earn \$5,000 or lose \$3,750

