What Goes Around: Teaching Business Cycles

Suggested Grade and Mastery Level

High School – all levels
Middle School – apprentice, master, grandmaster

Suggested Time

Duration of the game

Project Background

This project gives SMG teams the opportunity to investigate the impact of business cycles on stock price. SMG teams extend their knowledge of business cycles by determining whether the stock market has followed these economic fluctuations. They discover that different categories of stocks have often behaved differently during economic fluctuations. They will use their knowledge of business cycles to plan an investment strategy for the present economic conditions.

Teacher Background

"Everyone talks about the weather, but nobody does anything about it." Perhaps that's because the weather follows a cycle – a sequence of events that repeats itself over a period of time. Warm seasons gives way to cold ones, rainy days replace sunny ones, and so on. Cycles are all around us – even in the stock market.

Another kind of cycle impacting the stock market is the business cycle – a pattern of repeated fluctuations over time in which the economy expands, peaks, contracts, and then reaches a trough or bottom from which a new expansion begins. Business cycles are short-term fluctuations of the economy around its long-term growth path. Contractions don't inevitably follow expansions, however, nor does the strength of one phase foretell the strength of the next.

As the economy experiences expansions, contractions, peaks, and troughs, different kinds of stocks react differently. Some stocks, such as those of companies producing consumer durables (a new car) or capital goods (a machine) are very responsive to the ups and downs of business cycles. Not surprisingly, stocks of these companies are called cyclical stocks. In contrast, other companies, such as utilities or food companies, often suffer less during downturns but may also rise less during expansions. Stocks of these companies are known as non-cyclical, counter-cyclical, or defensive stocks.

The following site of the National Bureau of Economic Research (NBER) provides information about business cycles and their dates. The NBER defines and dates business cycles in our economy.

http://www.nber.org/cycles.html

Vocabulary

Business Cycle – A pattern of repeated fluctuations over time, in which the economy expands, peaks, contracts, and then reaches a trough or bottom from which a new expansion begins. Business cycles are fluctuations of the economy around its long-term growth path.
Contraction - is a general slowdown in economic activity in a country over a sustained period of time
Cycle – A sequence of events that repeats itself over a period of time
Cyclical Stock – A stock that closely follows the ups and downs of the economy because its company's earnings are very sensitive to the business cycle.
Defensive Stock – A stock that tends to remain relatively stable during economic contractions. Also called a non-cyclical or counter-cyclical stock because it is relatively unaffected by the business cycle.
Dow Jones Industrial Average (Dow) – A popular index of stock prices consisting of 30 large well-known companies in major sectors of the economy.
Economic Fluctuation – Expansion or contraction of the economy around its long-term growth path. Repeated expansions and contractions over time are known as the business cycle.
Exchange-Traded Fund (ETF) – An investment company whose shares trade in the stock market just like a stock. The fund pools savers' money to invest in a basket of stocks or bonds that closely follows an index of stocks or bonds.
Expansion - An increase in the level of economic activity, and of the goods and services available in the market place. Its is a period of economic growth as measured by a rise in real GDP.
Mutual Fund – An investment company that pools money to invest in a portfolio of stocks or bonds. Investors trade shares with the mutual fund, not with other investors. Open-ended funds are actively managed by professionals who research companies and trade stocks or bonds based on what they think is best for shareholders.
Non-Cyclical Stock – A stock that tends to remain relatively stable during economic contractions. Also called a defensive or counter-cyclical stock because it is relatively unaffected by the business cycle.
Sector – A broad group of industries or companies that produce similar products or services. Energy and utilities are two examples.
Standard & Poor's Depositors Receipts (SPDRs) – Pronounced spiders, these investments are exchange-traded funds that track the Standard & Poor's 500 index.

Performance Objectives

SMG teams will be able to:

- Define and demonstrate understanding of the following terms: business cycle, defensive stock, cyclical stock, sector, mutual fund, and exchange-traded fund.
- Use a table of data to construct a graph.
- Interpret the meaning of a chart depicting the performance of the Dow Jones Industrial Average during presidential terms.
- Identify some of the major sectors of the economy.
- Correctly match particular companies with particular economic sectors.
- Create a chart on the Internet and use it to evaluate the performance of stocks within different economic sectors.

Subject Area

History, Economics, Business, Social Studies, Math, English/Language Arts

Materials

- Registered teams with The Stock Market Game
- Computers with Internet Access
- Activity sheets

Springboard Activity

Write the word *bicycle* on the chalkboard and ask SMG teams to suggest explanations for its derivation. Be sure they understand that the first syllable, *bi*, means two, and the second, *cycle*, means circle or wheel. Ask SMG teams to think of similar words, such as tricycle and motorcycle.

Write the word *circle* on the chalkboard and explain that the word cycle refers to something, like a wheel, that has a repeating motion or pattern that goes in a circle. Draw a circle on the chalkboard and write the four seasons as below to illustrate the cycle of seasons. Point out how the cycle demonstrates a pattern that repeats itself.

Write the following definition of a cycle on the board:

Cycle: a sequence of events that repeats itself over a period of time.

Explain:

Many economists believe the economy follows cycles of expansion and contraction. In this unit SMG teams will study business cycles, the impact on stocks and design an investment strategy for our present economic conditions.

For additional information about the etymology of the words bicycle and cycle, check the following websites:

http://www.merriam-webster.com/dictionary
http://www.etymonline.com/index.php?term=bicycle

Activities

Activity 1: Defining a Business Cycle

In this activity SMG teams will use online sources to explain the business cycle and the major economic indicators used by economists to determine the present state of the economy. Once SMG teams complete the activity they should report their findings to the class.

Then discuss: What is the relationship among the economic indicators, business cycle and stock performance?

Activity 2 : The Business Cycle in History

In this activity SMG teams will select one of seven stock market "crashes". They will research the economic conditions prior to the crash, the factors that led to the crash, and the interventions necessary to stabilize the market, all in the context of the business cycle. Have each SMG team prepare a presentation for the class.

Discuss: What is the impact of business cycles on the performance of the stock market over the last 50 years?

Activity 3: Getting Down to Business

This activity gives SMG teams an opportunity to identify different economic sectors and to categorize particular stocks within those sectors. Have SMG teams complete the activity and compare their answers in class.

Activity 4: Sector Funds: Sector Spiders

This activity gives SMG teams the opportunity to use the Internet to compare the recent performance of stocks in different economic sectors. The web provides data about the performance of sectors, usually by reporting share prices of mutual funds and exchange-traded funds that specialize in these sectors.

Ask:

What is an open-ended mutual fund?
What is an exchange-traded fund?

SMG teams may not know the basic differences between the two types of funds, so you may want to review with them their definitions in the vocabulary list.

Explain that many mutual funds and ETFs concentrate on particular sectors of the economy. By comparing funds in different sectors, they can evaluate the performance of these sectors during the phases of the business cycle.

Have teams complete Activity Sheet 5 and compare their answers in class.

Activity 5: Business Cycles and Bonds

Explain:

Bonds are an important part of a diversified portfolio. The percentage of the portfolio and type of bonds purchased by an investor as part of an overall investment strategy is based on an investor's age, risk tolerance and financial goals. Some investors believe it is best to buy bonds at the peak of the business cycle since bonds tend to perform better than stocks in economic downturns. In this activity students will explain when it was the best time to buy bonds in the recent economic cycle; they will plot the price of three corporate bonds with different ratings to determine the impact of recent time on bond prices.

Activity 6: Putting It all together

In this activity students will use all the information they collected to create a PowerPoint or poster presentation that:

1. Explains the relevant terms needed to understand business cycles.
2. Defines the leading economic indicators and how they predict the business cycle.
3. Describes the difference between cyclical and non cyclical stocks.
4. Gives examples of stocks that an investor might buy in an economic expansion and recession.

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Activity Sheet 1: Getting Down to Business

Business Cycle

The economy has had its own cycles. Often called business cycles, these fluctuations are illustrated by the following diagram:

Measured by total production, income, employment and other factors, the economy expands, attains a peak, contracts, and reaches a bottom from which another expansion begins. The cycles have varied in duration and size, but the economy has grown over time by reaching ever higher peaks.

To learn more about the business cycle go to one of the following or research a similar site to answer the questions below:

http://www.econlib.org/library/Enc/BusinessCycles.html
http://www.investopedia.com/terms/b/businesscycle.asp
http://economics.about.com/cs/studentresources/f/business_cycle.htm

Explain the meaning of each term as it is relevant to the business cycle:

Expansion _____

Peak _____

Contraction _____

Trough _____

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Predict and explain how each phase of the business cycle impacts on the price of stocks overall:

Expansion _____

_____

Peak _____

_____

Contraction _____

_____

Trough _____

_____

Economic Cycles

The National Bureau of Economic Research (NBER) provides information about business cycles and their dates. The NBER defines and dates business cycles for our economy.

Use its website to answer the following questions:

http://www.nber.org/cycles/cyclesmain.html

The NBER identifies dates of the economy's contractions, which also are called recessions. What are the dates of the two latest recessions?

How long was each of the last two recessions?

In August of 1929 the economy reached a peak, the stock markets "crashed" in October of 1929. How many months did it take for the economy to hit its trough from its peak (recession)? How many months after the "crash" in October of 1929 did it take the economy to hit its trough?

Economic Indicators

"An economic indicator is simply any economic statistic, such as the unemployment rate, GDP, or the inflation rate, which indicate how well the economy is doing and how well the economy is going to do in the future. As shown in the article 'How Markets Use Information To Set Prices' investors use all the information at their disposal to make decisions. If a set of economic indicators suggest that the economy is going to do better or worse in the future than they had previously expected, they may decide to change their investing strategy." (answers.com)

In this activity your team will research the impact economic indicators can have on investors.

Go to http://economics.about.com/cs/businesscycles/a/economic_ind.htm

or a similar site and define the following three attributes for each economic indicator listed below; in your own words:

Relation to the Business Cycle / Economy

_____

_____

_____

_____

_____

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Frequency of Data

Timing

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Activity 2: Cycles and Crashes Over Time

Economic cycles are often identified historically by a major event called a "panic" or "crash" that may occur soon after the economic peak of a business cycle. They can be identified with sudden drops in the price of stock across industries caused by an economic crisis, world event or individual misdeed with broad -based impact. These events are often followed by periods of government intervention or regulation.

Select one of the events below. Research the economic conditions (occurring at the time that may have been used), describe the event itself, its impact on the economy, and the interventions needed to stabilize the economy.

Event	**Year**
Tech bubble bursting	2000
Crash of 1929	1929
The "Panic of 1907"	1907
The "Panic of 1901"	1901
The "Panic of 1873"	1873

From http://en.wikipedia.org/wiki/List_of_stock_market_crashes

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Activity 3: Getting Down to Business

Read and discuss the following:

Cyclical Stocks

Stocks that closely follow these ups and downs are called cyclical stocks. They represent ownership in companies whose earnings are very sensitive to the economy's fluctuations. Companies that produce products or services that consumers are likely to put off buying during economic slowdowns are cyclical businesses. For example, consumers might postpone buying new cars or taking trips during economic contractions, so auto companies and airlines have cyclical stocks. Businesses might also postpone buying new equipment when the economy weakens, so businesses producing industrial (capital) goods, such as tractors, also have cyclical stocks.

Defensive Stocks

Some are non-cyclical because they represent companies producing goods and services that consumers or businesses continue buying during economic downturns. Examples are personal products, such as toothpaste or cosmetics, food products, such as cheese or milk, and utilities, such as electricity and natural gas. Healthcare companies may also be non-cyclical, since consumers often continue buying medications or healthcare products even when the economy sours. Non-cyclical stocks may still turn down if the economy contracts, but their decline is often less than that of cyclical stocks. Since non-cyclical stocks can offer investors better protection from economic downturns, they are often called defensive stocks.

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Sectors

One way to compare the performance of cyclical and defensive stocks – or to find specific stocks within each category – is to explore economic sectors on the web. A sector is a broad group of industries or companies that produce similar products or services. Energy and utilities are two examples. You can find a list of sectors at Yahoo! Finance and Google Finance at the following Web sites: Yahoo gives 9 sectors, while Google lists 12.

Use the web sites below to complete the following table of sectors as listed at the Yahoo and Google websites.

http://biz.yahoo.com/p/
http://finance.google.com/finance?hl=en&tab=we

	Yahoo! Finance	Google Finance
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		

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Use both the Yahoo and Google websites to find the sector for each of the following stocks. Write the sector's name in the appropriate blank. Using the definitions of cyclical and defensive stocks provided determine whether the stock is cyclical or defensive and write it in the Category column.

	Company	Symbol	Sector (Yahoo)	Sector (Google)	Category
1.	Whirlpool	WHR			
2.	Alcoa	AA			
3.	Coca-Cola	KO			
4.	Microsoft	MSFT			
5.	Hormel Foods	HRL			
6.	Dow Chemical	DOW			
7.	Wisconsin Energy Corp.	WEC			
8.	Colgate-Palmolive	CL			
9.	Bristol-Myers Squibb	BMY			
10.	Caterpillar	CAT			
11.	JPMorgan Chase	JPM			
12.	Kellogg	K			

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Now that you have explored a variety of stocks and the sectors they belong, write a paragraph determining which sectors are cyclical and which are not. Use your research to defend your explanation.

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Activity 4: Sector Spiders

One easy way to compare the stock performance of different sectors is to examine the track records of various mutual funds or exchange-traded funds that follow specific sectors. Spiders are one example. Their real name is SPDRs, or Standard &Poor's Depositary Receipts. State Street Global Advisors offers nine of these exchange-traded funds (ETFs) that match the nine sectors of the Standard & Poor's 500 index.

Note: There are different types of SPDRs. For this activity we are focusing on sector SPDRs.

Sector	SPDR Symbol
Consumer Discretionary	XLY
Consumer Staples	XLP
Energy	XLE
Financials	XLF
Healthcare	XLV
Industrial	XLI
Materials	XLB
Technology	XLK
Utilities	XLU

Create a chart of the 9 sectors by using the following directions and website at Yahoo! Finance: http://finance.yahoo.com/?u

Type the symbol for the consumer discretionary SPDR (XLY) in the blank box at the upper left of the page and click "Get Quotes." When the next page opens, click on "Interactive" under the charts menu at the left.

When the chart appears, click on "Max" near the bottom to create a chart from 1999.

Click on the dropdown menu "Compare" at the top of the chart and type the eight remaining SPDR symbols in the little box entitled "enter names or symbols."

Click on "Draw" at the bottom of the "Compare" window to draw a line graph of all nine sectors will appear.

Click on "Full Screen" at the bottom of the page for a larger view of the graph.

Note: Either scale will work just fine, but if SMG teams have questions about the difference, here is a brief explanation:

With a linear scale, equal distances along the Y axis measure equal changes in the percentage growth of the SPDRs. In this case, the vertical distance between 50% and %100 is the same as the vertical distance between 100% and 150% and so on. With a logarithmic scale, equal distances along the Y axis measure equal percentage changes in the percentage growth of the SPDRs. An increase from 50% to 100% is thus a larger percentage change [(100% - 50%)/50% = 100%] than an increase from 100% to 150% [(150% - 100%)/100% - 50%]. As a result, the increments of 50% on the Y axis become progressively smaller percentage changes when moving up the scale, so the numbers are closer together than they are on a linear scale. Yahoo offers video explanations and illustrations of its interactive char features at:

http://help.yahoo.com/l/us/yahoo/finance/charts/basics/.

Based on the chart you've created, answer the following questions:

Which sectors would you classify as containing mostly defensive stocks?

Which sectors would you classify as containing mostly cyclical stocks?

Which sectors have increased the most over the period shown?

Which sectors have decreased the most (or increased the least) over the period shown.

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Activity 5: Business Cycles and Bonds

You may use the following corporate bonds or select three from your SMG portfolio:

Name	CUSIP	RATING
Campbell Soup Co.	134429AS8	A
Commonwealth Edison Co.	202795GM6	AA
Geico Corp	361582AD1	AAA+

Data retrieved April 14, 2009

Visit http://www.investinginbonds.com/advsearch.asp

Use the Advanced Search tool on the Investinginbonds.com site to lookup the yields of each of the corporate bonds in the table. Enter the CUSIP numbers of the corporate bonds to find their price and yield and click on the Number of Trades link to access the information.

Locate and graph the price of the bonds from September 2008 to March 2009 using the last price for each month.

In December 2007, the economy was at a peak. Some investors believe it is best to buy bonds at the peak of the business cycle since bonds tend to perform better in economic downturns than stocks.

Using Investinginbonds.com again locate and graph the price of the bonds for the last three months.

1. Visit http://www.nber.org/cycles/cyclesmain.html. Based on what you have learned, are we now in a peak or a trough? How do you know?

2. Compare the graphs. Are investors correct in believing it is best to buy bonds at the peak of a business cycle? Why?

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Answer Keys

Activity 1

The NBER identifies dates of the economy's contractions. These are times when the economy experienced recessions. What are the dates of the two latest recessions?
July 1990 to March 1991. March 2001 to November 2001
How many months did each of the last two recessions last?
Each one lasted 8 months.
In August of 1929 the economy reached a peak, the market "crashed" in October of 1929. How many months did it take for the economy to hit its trough from its peak (recession)? How many months after the "crash" in October of 1929 did it take to hit its trough?
It took 43 months from peak to trough. It took 40 months from the crash in October.

Answers to the Business Cycle and Economic Indicators sections are available at the Web sites provided.

Activity 3

	Yahoo! Finance	Google Finance
1.	Basic Materials	Basic Materials
2.	Conglomerates	Capital Goods
3.	Consumer Goods	Conglomerates
4.	Financial	Consumer Cyclical
5.	Healthcare	Consumer Non-Cyclical
6.	Industrial Goods	Energy
7.	Services	Financial
8.	Technology	Healthcare
9.	Utilities	Services
10.		Technology
11.		Transportation
12.		Utilities

	Company	Symbol	Sector (Yahoo)	Sector (Google)	Category
1.	Whirlpool	WHR	Consumer Goods	Consumer Cyclical	Cyclical
2.	Alcoa	AA	Basic Materials	Basic Materials	Cyclical
3.	Coca-Cola	KO	Consumer Goods	Consumer Non-Cyclical	Defensive
4.	Microsoft	MSFT	Technology	Technology	Cyclical
5.	Hormel Foods	HRL	Consumer Goods	Consumer Non-Cyclical	Defensive
6.	Dow Chemical	DOW	Basic Materials	Basic Materials	Cyclical
7.	Wisconsin Energy Corp.	WEC	Utilities	Utilities	Defensive
8.	Colgate-Palmolive	CL	Consumer Goods	Consumer Non-cyclical	Defensive
9.	Bristol-Myers Squibb	BMY	Healthcare	Healthcare	Defensive
10.	Caterpillar	CAT	Industrial Goods	Capital Goods	Cyclical
11.	JPMorgan Chase	JPM	Financial	Financial	Cyclical
12.	Kellogg	K	Consumer Goods	Consumer Non-Cyclical	Defensive

Activity 4

Which sectors would you classify as containing mostly defensive stocks?
Utilities and consumer staples are the most obvious, but some analysts often include some healthcare stocks.
Which sectors would you classify as containing mostly cyclical stocks?
All other sectors except for utilities, consumer staples, and perhaps health care.
Which sectors have increased the most over the period shown?
Answers may vary because the teams will be observing updated information. Energy is likely to appear at or near the top.
Which sectors have decreased the most (or increased the least) over the period shown.
Answers may vary because the teams will be observing updated information. The answer will be observable in the chart.