Chapter Three

PROFITABLE RELATIONSHIPS BETWEEN ECONOMIC INDICATORS AND FINANCIAL MARKETS

1. Introduction

Chapter One emphasized the need for an investment process. This process represents the decision-making procedure used to invest our capital. The process is not set in stone. It changes. It improves gradually and continuously to fit our personality and time available to invest. Recognition of risk is the first step to find opportunities and avoid unattractive assets. Once realistic objectives are set, we need a strategy to navigate the markets. Like a poker player, we adjust our investments to the changing times and risk profile of the marketplace. Our strategies are updated regularly based on our investment portfolio performance.

Chapter Two discussed important economic and financial indicators. To invest based on stock sectors, we identify the significant trends of the business and financial cycle. Three classes of measures were identified: leading, coincident, and lagging indicators. During a business and financial cycle, we must understand the action of these indicators to recognize the attractive stock sectors.

In this chapter, the relationships connecting these indicators are presented. How is the stock market related to the business cycle? What aspects of the business and financial cycle drive commodity prices? How does inflation begin and how can we benefit from it and avoid costly mistakes? What configurations of indicators suggest gold or bonds as attractive investments? Is the Fed really as powerful as printed in the financial press? Do they really control interest rates? If so, what are their limits?

The study of these relationships has two main objectives. The first is to establish the correct time to invest in a specific asset or stock sector. The second objective is to determine the level of risk of the markets. This type of information is crucial to develop investment decisions and strategies. The next chapter shows how to use this information to devise an investment strategy and an action plan.

2. The business and financial cycle

The economy is a sensitive and delicate mechanism. Small changes in growth rates put forces into motion with an escalating impact on the economy. The impact ranges from changes in business profit to the value of assets. Everything from commodities to stocks, from interest rates to precious metals and currencies is affected. Oil or lumber will soar one year and decline the next. Gold and real estate were the hot investment in the 1970s and the dramatic losers in the 1980s and 1990s. Bonds collapsed in the 1970s, but roared after 1982.

As a business and financial strategist, how do you predict when and in which direction these changes will occur? Moving the price of all assets, the driving force is how fast the economy grows relative to its long-term growth rate or growth potential. The long-term growth rate of an industrialized country is close to 2.7%. The average long-term growth for the U.S economy has been somewhere between 2.5% and 3.0% after 1982.

Growth, however, is rarely at its 2.5 – 3.0% average. Sometimes growth speeds up above this range and other times growth slows down below the average (Fig.3-1). Asset prices respond to whether business grows above or below its long-term average. To develop guidelines for investment strategies, we follow the business cycle through the phases of strong and slow growth. We use the business cycle phases to alter our asset allocation and minimize losses.

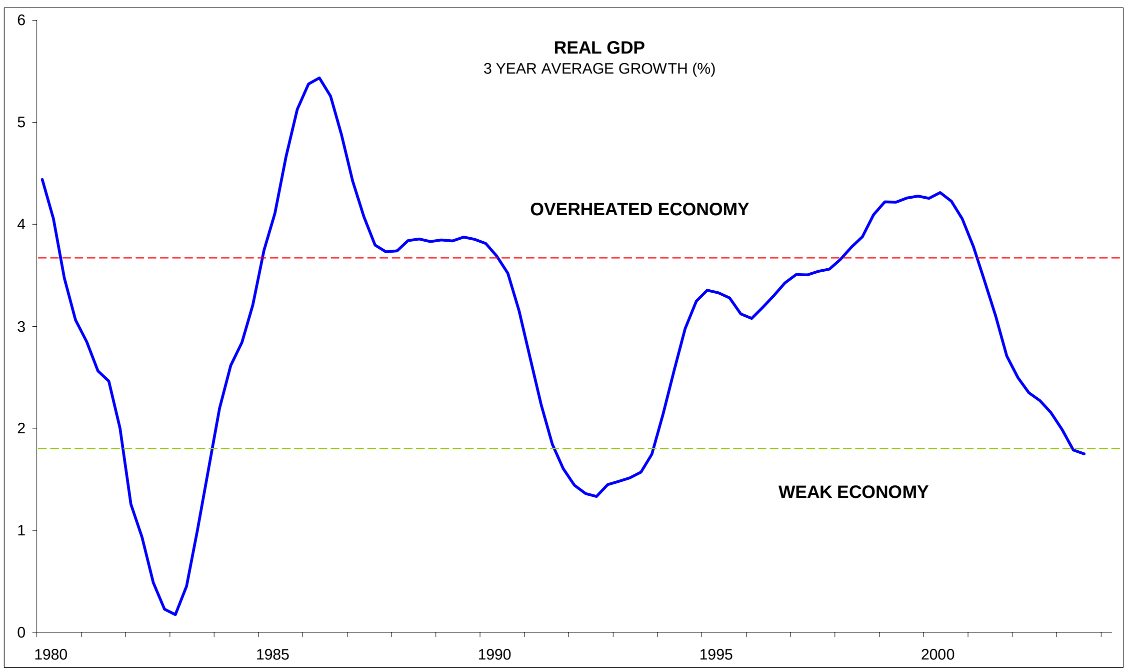


Fig. 3-1. This graph shows the growth rate of the US economy as measured by the gross domestic product after inflation. The growth has been averaged over a three-year span. It shows wide swings between more than 5% and zero percent. Wide swings in the business cycle cause prices of various assets to go sharply up or down.

Economic growth above the 2.5 – 3% long-term average is accompanied by rising lagging indicators, such as interest rates and inflation. Stock prices in this phase grow at a below average pace. Investment risk increases. The prospect of higher profits in stocks and bonds materializes when the pace of the economy shrinks below its long-term average as interest rates and inflation decline. When the economy accelerates, it develops the forces that will make it grow at a slower pace. However, in spite of all these dynamics, the long-term average growth of the economy remains 2.5 - 3.0%.

This is similar to what happens to a jogger. If the jogger's natural pace is nine minutes per mile, any attempt to speed up will result in a faster pulse rate, higher temperature, shortness of breath and increased fatigue. Before long, the jogger has to slow down and coast until strength returns. Experienced joggers know that a fast, long run above their average pace will force then to slow down to rest with longer recuperation.

The economy acts exactly like a jogger. If the economy grows faster than the growth potential, its temperature rises. For the economy, this rising temperature equates with higher inflation and interest rates, accelerating wages, high capacity utilization of machines and human resources, and eventually lower business profit as productivity slows down. Like the jogger, the economy has to slow if it is to regain strength. Thus, it must grow at a pace below its growth potential. Only then will inflation, interest rates, growth in wages and capacity utilization decline and business profitability improve.

As you read the following pages, a question emerges. If the long-term average growth rate is so important, what do we do to raise it? Research in this area indicates that increasing the country's productivity is the only answer. We can increase productivity through improved education, investments, and low inflation. It is just that simple and enormously difficult to achieve.

Let’s analyze what happens to the business and financial markets when the economy comes out of a recession or slow growth and starts to improve. When the economy grows slowly, inflation drops because consumers recognize the difficult times and become cautious buyers. Some cannot find jobs as unemployment rises. Growth in wages declines and income grows slowly. Consumers become cautious buyers and so keep inflation under control. With a slow economy, borrowing is subdued and interest rates decline. A slow growth phase is characterized by slow production. Thus, fewer raw materials are needed and commodity prices decline.

But, good news penetrates every slow growth phase. The decline in wages, interest rates, raw materials, and inflation reflects lower costs for business. So, business profits begin to improve. Most people consider this phase of the business cycle as the worst of times.

Growth in wages, interest rates, and borrowing are all lagging indicators. A decline in the lagging indicators means that cost pressures, excesses generated by the previous growth phase, are finally under control. Thus, the lagging indicators anticipate improvement in the business cycle. In fact, as slow growth brings costs down and efforts to improve productivity kick in, profits begin to improve. For this reason, profits are an important leading indicator. Improved profits encourage business to take an aggressive outlook in their investment plans.

Here is an important aspect of the business cycle. A decline in the lagging indicators is followed by an improvement in the leading indicators. For example, a decline in costs is followed by improved profits. Interest rates decline because the demand for money is low because business does not borrow due to the slow growth in business activity. As soon as profits improve, demand for money increases. The Fed encourages this process by increasing the money supply needed by business. The process of liquidity creation by the Fed is detailed in my book *Profiting in Bull or Bear Markets.* An increase in the growth of the money supply signals the Fed is increasing the available money in the banking system. Banks have more money to lend to business and consumers. During a slow growth phase, as inflation declines, long-term interest rates tend to decline, indicating lower inflation expectations.

Since the stock market thrives on liquidity, equity prices turn and start rising. This phase of the business cycle represents a pivotal time for financial markets. Interest rates decline and the Fed injects money in the system to favor the expansion. The increase in liquidity goes partly into the real economy. Some of this liquidity goes into the financial markets. That's why the financial markets do extremely well in this phase.

As profits continue to improve and costs remain under control, business expands production capacity and hires more people to jump on the opportunities. More jobs lead to more income. More sales lead to more production and even more jobs. The economy grows as the process feeds on itself with increased business profits. The money supply expands robustly, interest rates decline, bond yields, and commodity prices move lower, and the stock market rises. The dollar, reflecting the confidence of the international financial markets on the future of the U.S. economy, strengthens. This is the phase when the jogger (economy) is rested and able to run faster.

Now, the economy is so robust that growth rises above the long-term average. Employment, production, income, and sales continue to rise rapidly. As unemployment drops, the ability to find skilled workers drops. Wages begin to rise faster. Increased production puts upward pressure on raw materials. Favorable economic conditions and growth in income lead to aggressive consumer buying. The pace of borrowing goes up. Eventually, high consumer and business borrowing cause interest rates to rise. Manufacturing capacity usage reaches high levels and business feels compelled to borrow and increase capacity. But, as capacity utilization increases, improvements in productivity slow down.

Business can no longer absorb the rising costs of commodities, labor, and interest rates. Raising their ugly heads, the lagging indicators warn investors of an overheated economy. Risk is increasing. Profitability is now at stake with profit margins under pressure because of rising costs. Increased costs signal the economy is bound to slow down. Increased costs will force the leading indicators to decline. Increased costs mean business profits are at risk. Business will have to cut costs to maintain profitability. During this phase, characterized by strong growth in the economy, we pay attention to the variables (mostly lagging indicators) that impact decisions causing the economy to slow down.

As interest rates and inflation rise, they negatively impact other important leading indicators. These leading indicators include consumer sentiment and consumer expectations. As interest rates and inflation rise, consumers' real income declines. Thus, consumer attitude is negatively impacted. The main reasons are an increase in inflation and an erosion of purchasing power. Thus, the reduced purchasing power of the consumer becomes a drag for the economy. Higher interest rates raise the cost of consumer borrowing. This has a negative impact on their ability to obtain credit. A strong growth phase, followed by increasing lagging indicators, forces the decisions that eventually lead to slower growth in the economy.

Like an over-confident jogger, the economy runs faster. When this happens, the Fed understands an overheating economy and too much growth will bring higher inflation. Thus, high interest rates are allowed to rise even higher. Eventually business and consumers are discouraged from borrowing. This action causes a decline in the growth of the money supply and in overall liquidity. Slower growth in liquidity and rising interest rates have a negative impact on stock prices. The stock market peaks. The strong growth now sets in motion a series of events that trigger a slowdown. As the economy downshifts, the dollar weakens, anticipating slower growth.

This is a treacherous phase of the growth cycle. Growth in sales is at the highest level in years. Profits get soft. Interest rates and the inflation rate have risen for some time. The recognition of high rates lags behind. Businesses cut costs and the Fed reduces liquidity. As costs accelerate and sales slow, there is downward pressure on income, sales, employment, and production. As the growth in the money supply declines, consumers and business have less money to spend. The lower level of liquidity, rising inflation and rising interest rates force business and consumers to cut spending. The ultimate effect is a slower economy.

As costs keep rising, business is forced to cut costs even further. The negative feedback between lagging and leading indicators is clearly visible at this point. Business will cut costs until the factors that created declining profits are in control. Business will stop cutting costs when the lagging indicators start to decline. A decline in the lagging indicators (inflation rate, interest rates, growth in labor costs) signals costs are finally under control. It signals that labor costs, commodities, and interest rates are on the way down. It indicates to business that their margins are likely to improve in the near future, and thus, encourages them to spend again. This phase of the business cycle slowdown will continue until the lagging indicators begin to decline.

Finally, the jogger (economy) decides, “I just can't make it.” It is time for the economy to slow down to below the average pace. The growth of the economy eventually falls below the long-term average of 2.5 to 3%. With tight monetary policy, the money supply slows down, business cuts costs, and the economy remains weak. Eventually the first signs of recovery begin to appear. As the economy grows very slowly, inflation declines. Consumers do not buy much because the unemployment rate goes up due to business cutting costs. Due to lower inflation and slower growth in the credit demand, interest rates start to decline. Commodities weaken because of slow demand caused by the economy and slow growth in production. Reflecting all these uncertainties, the dollar remains weak.

The forces that caused the slowdown - higher costs, inflation cost, and interest rate cost - now reverse. In other words, the lagging indicators now decline. As the cost factors decline, profit margins improve. At the same time, the Fed lets the growth of the money supply expand to stimulate the economy. Because of greater liquidity and lower costs, lower inflation, and increasing profitability, the economy is positioned to begin to grow faster again. The jogger has rested and has the strength to start running at a faster pace and the business and financial cycles are ready to start all over again. The dollar begins to strengthen.

3. Turning points in business and financial cycles

This section views economic and financial development in terms of leading, coincident, and lagging indicators - as introduced in Chapter Two (Fig. 3.2). In the next section, this framework is used to forecast the turning points of specific markets.

Let us begin with the business and financial cycle in configuration “B” or “H.” The following trends are visible.

a. The leading indicators have risen sharply and grow more slowly.
b. The coincident indicators rise sharply.
c. The lagging indicators also rise rapidly.

The system is in configuration “B” because the growth in monetary aggregates has risen rapidly for more than a year. Stock prices, in a bull market, mirror the strength in monetary aggregates and now begin to sputter. The dollar has soared, but has traded in a range for some time. Business begins to clamor for a weaker dollar. The yield curve has steepened for some time, as the Fed maintained an easy stance in monetary policy. Now the yield curve begins to flatten.

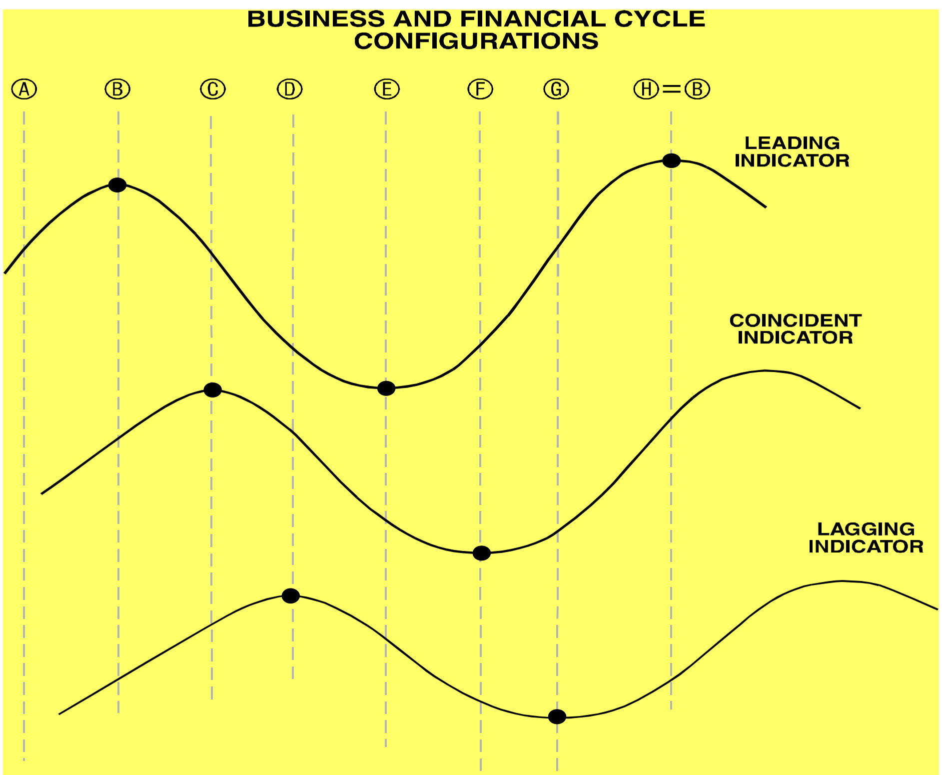


Fig. 3.2. All the information dealing with business and financial cycles is reflected by these graphs.

The protracted strength of the leading indicators is now reflected by a very strong economy. Industrial production expands rapidly. The ISM index of purchasing managers and the index of vendor deliveries are well above 50%. Employment, income and retail sales rise rapidly. All the coincident indicators reflect a booming economy.

Because of the booming economy, inflation becomes an issue. Commodity indexes rise following the economic turnaround. The demand for money is strong. Market-driven interest rates rise and the Fed increases the interbank rate. Bond yields move up due to heavy borrowing by business.

The lagging indicators now negatively impact the financial markets and business activity. The lagging indicators continue to rise well into the next two phases between configuration “B” and “D.”

Sputtering leading indicators, a strong economy, and soaring lagging indicators signal, reliably, the business and financial cycle shift from configuration “B” to configuration “C.” Configuration “C” is documented by the following tendencies.

a. The leading indicators decline.
b. The coincident indicators rise rapidly and then more slowly.
c. The lagging indicators continue to rise rapidly.

The continued rise in the lagging indicators has two main effects. Rising inflation reduces the purchasing power of consumers. Consumers begin to borrow less and trim their purchases. Rising inflation also reflects rising costs for business. Profit margins deteriorate and investment plans are put on hold. Business borrowing is cut. Bond yields move higher because of the rising inflation premium. Alas, the economy slows down.

Lower demand for money is reflected in a decline in the growth of monetary aggregates. Rising short-term interest rates cause the yield curve to flatten. The dollar sputters as the economy becomes less attractive to foreign investors. As less liquidity flows through the system, stocks decline.

As short-term and long-term interest rates rise and inflation goes up, the economy weakens. Meanwhile, business and consumers become more cautious about the future. The economy continues to deteriorate until the initial negative causes self-correct.

When the lagging indicators finally decline, the worst is over. The business and financial cycle is now in configuration “D” and moving quickly toward configuration “E.” Configuration “D” is recognized from the following tendencies.

a. The leading indicators continue to decline.
b. The coincident indicators are still heading lower.
c. The lagging indicators have stopped rising.

The economy has weakened long enough to lower inflation (due to slower growth in demand), lower interest rates (due to lower demand for money), and lower commodities (due to the pronounced slowdown in the manufacturing sector).

The growth in the money supply declines and the yield curve flattens (due to rising short-term interest rates). The dollar remains weak as economic conditions remain uncertain. Stock prices decline as liquidity shrinks.

The lagging indicators, however, following a prolonged economic slowdown, begin to sputter and then decline. As costs (wages, raw materials, and interest rates) decline, business begins to feel more confident, thus setting the stage for the next phase. Due to lower inflation and declining interest rates, consumer confidence improves. Because of pent-up demand, consumers start to borrow and spend again.

Configuration "E" is the direct result of the decline of interest rates, inflation, growth in commodity prices and wages. As costs decline and margins improve, business and consumers get new optimism. Encouraged by the Fed, more money is borrowed. Liquidity improves and the growth of the money supply expands again. Due to lower short-term interest rates, the yield curve steepens. Stock prices gain strength due to the increased liquidity. Foreign investors recognize new prospects and bid up the price of the dollar. The dollar strengthens.

Configuration "E" is therefore characterized by the following trends.

a. The leading indicators bottom and then rise.
b. The coincident indicators decline.
c. The lagging indicators decline.

Before the economy can benefit from the increased liquidity, some time elapses. It takes about 12-24 months for the economy to respond to an increase in the leading indicators.

The economy, meanwhile, continues to grow slowly. The slow growth in employment, income, production, and sales continues to place downward pressure on the lagging indicators. Short-term and long-term interest rates continue to decline. Commodity prices move lower as inflation is subdued.

The business and financial cycles are moving steadily toward configuration "F," which is characterized by the following trends.

a. The leading indicators continue to rise.
b. The coincident indicators stop dropping and show strength.
c. The lagging indicators remain in a downtrend.

The strong and prolonged liquidity injection gives business the incentive to invest again. Lower interest rates and inflation are a major incentive for consumers to borrow and purchase more goods and services. The economy responds to the stimuli and begins to improve. Increases in output, sales, income, and employment feed on themselves and the economy improves. Business activity remains slow enough that commodity prices, short-term interest rates, bond yields and inflation continue to decline.

The continued rise in the leading indicators and the strong demand for goods and services translate into a stable performance of the lagging indicators. The business and financial cycle reach configuration “G.” This configuration is characterized by the following trends.

a. The leading indicators rise.
b. The coincident indicators rise reflecting an improving economy.
c. The lagging indicators stop declining and begin to stabilize.

This is a critical configuration. It occurs, on average, 12-24 months after the coincident indicators improve. The coincident indicators (economy) grow above their long-term average of 3%. Capacity utilization rises to high levels. The unemployment rate is close to new lows. Now, the economy operates at close to capacity.

The strong demand for money from consumers and business drives interest rates higher. Rising commodity prices and unit labor costs (labor costs adjusted by productivity growth) are reliable signs inflation will soon begin to rise. Bond yields start rising. Higher bond yields reflect an increasing inflation premium.

The business and financial cycle moves rapidly toward configuration “H,” which is characterized by the following trends.

a. The leading indicators show signs of peaking.
b. The coincident indicators remain strong.
c. The lagging indicators rise.

This configuration takes place a few months after configuration “G.” As soon as short-term interest rates begin to rise, consumers and business lose their appetite to borrow. Less borrowing means slower growth in liquidity. Money becomes tighter due to rising interest rates. The stock market peaks. The yield curve flattens due to rising short-term interest rates. The dollar weakens.

Finally, the business and financial cycle starts all over again at configuration “B.”

4. <u>Predicting turning points in the business and financial cycles</u>

The purpose of this section is to expand the idea of turning points discussed in the previous section to specific cases.

a. <u>Predicting turning points in the business cycle (coincident indicator)</u>

The business cycle is represented by the growth of the economy. Changes in GDP or industrial production are a good proxy. The ISM index is also useful because of its timely report on the first day of each month.

The conditions leading to a downturn in the business cycle are the following (Fig. 3.2, configuration “C”).

- The growth of money supply has declined for at least 12 months.

- The yield curve has flattened for at least 12 months.
- The dollar has weakened for at least 12 months.
- The stock market has declined for about a year.

These trends are reinforced by the action of the lagging indicators:

- Short-term interest rates rising for about a year;
- Bond yields rising for many months;
- Inflation rising for at least a year;
- Commodities moving higher for more than 12 months.

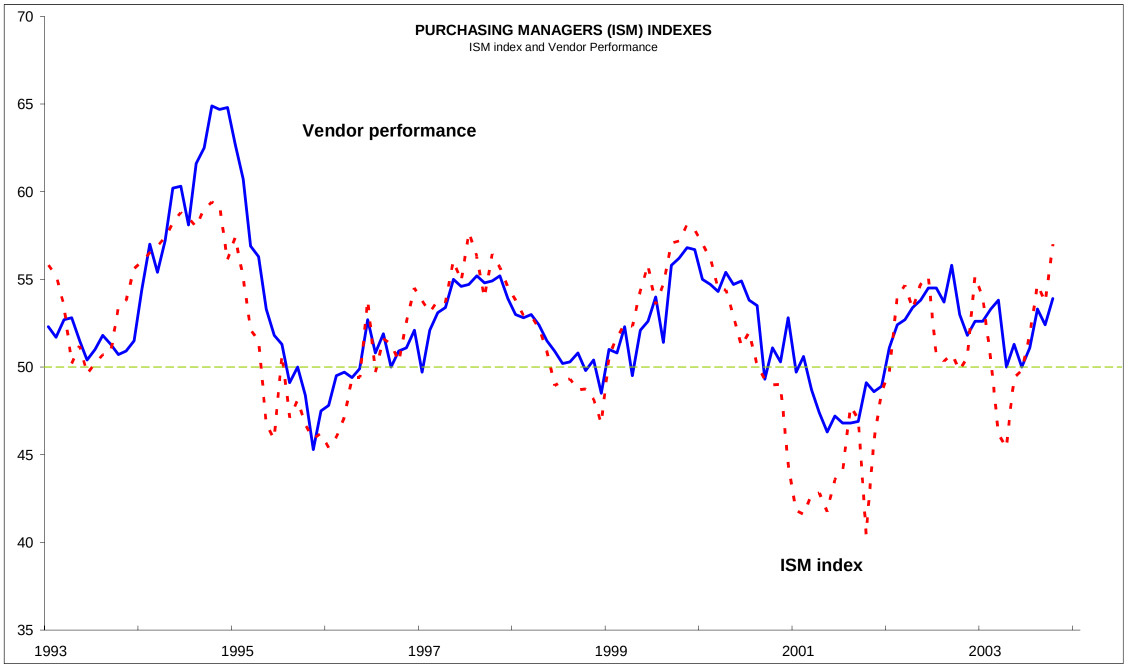


Fig. 3.3 The ISM index is a timely indicator reflecting turning points in the business cycle.

A lack of progress for 2-3 months in the ISM index confirms the business cycle is close to a peak. At this point gradually adapt your investment strategy to reflect changing economic conditions.

The conditions leading to an upturn in the business cycle are as follows (Fig. 3.2, configuration "F"):

- The growth of money supply has risen for at least 12 months;
- The yield curve has steepened for at least 12 months;
- The dollar has strengthened for at least 12 months;
- The stock market has risen for about a year.

These trends are reinforced by the action of the lagging indicators:

- Short-term interest rates declining for about a year;

- Bond yields declining for many months;
- Inflation declining for at least a year;
- Commodity prices moving down for more than 12 months.

If the ISM index stabilizes for a few months, the business cycle is close to a trough.

b. <u>Predicting the turning points of commodity prices (lagging indicator)</u>

A downturn in commodity indexes like the CRB futures index or the CRB raw industrials (spot) is accompanied by the following conditions (see Fig. 3.2, configuration “D”):

- The growth of money supply has declined for at least 12 months;
- The yield curve has flattened for at least 12 months;
- The dollar has weakened for at least 12 months;
- The rate of growth in stock prices has declined for about 12 months.

These trends are accompanied by the following tendencies in the coincident indicators:

- The ISM index for manufacturing and non-manufacturing has fallen for about 12 months;
- The ISM index of vendor deliveries has fallen for about 12 months;
- The growth in industrial production is declining for about 12 months;
- The growth in employment is declining for about 12 months.

An upturn in commodity indexes like the CRB futures index or the CRB raw industrials (spot) is accompanied by the following conditions (Fig. 3.2, configuration “G”):

- The growth of money supply has risen for at least 12 months;
- The yield curve has steepened for at least 12 months;
- The dollar has strengthened for at least 12 months;
- The stock market has improved for about a year.

These trends are accompanied by the following tendencies in the coincident indicators:

- The ISM index for manufacturing and non-manufacturing has been rising for 12-24 months;
- The ISM index of vendor deliveries has improved for 12-24 months;
- The growth in industrial production has risen for 12-24 months;
- The growth in employment (manufacturing and totals) has improved for 12-24 months.

The amplitude of the change in commodities depends on the level of real short-term interest rates (rate on 13-week Treasury bills divided by inflation). Real short-term interest rates below 1.4 are typically associated with high inflation and sharply higher commodity prices. High real short-term interest rates, above 1.4, are associated with declining inflation and muted movements in commodity prices. For an in-depth discussion please read Chapter 6 of *Profiting in Bull or Bear Markets*.

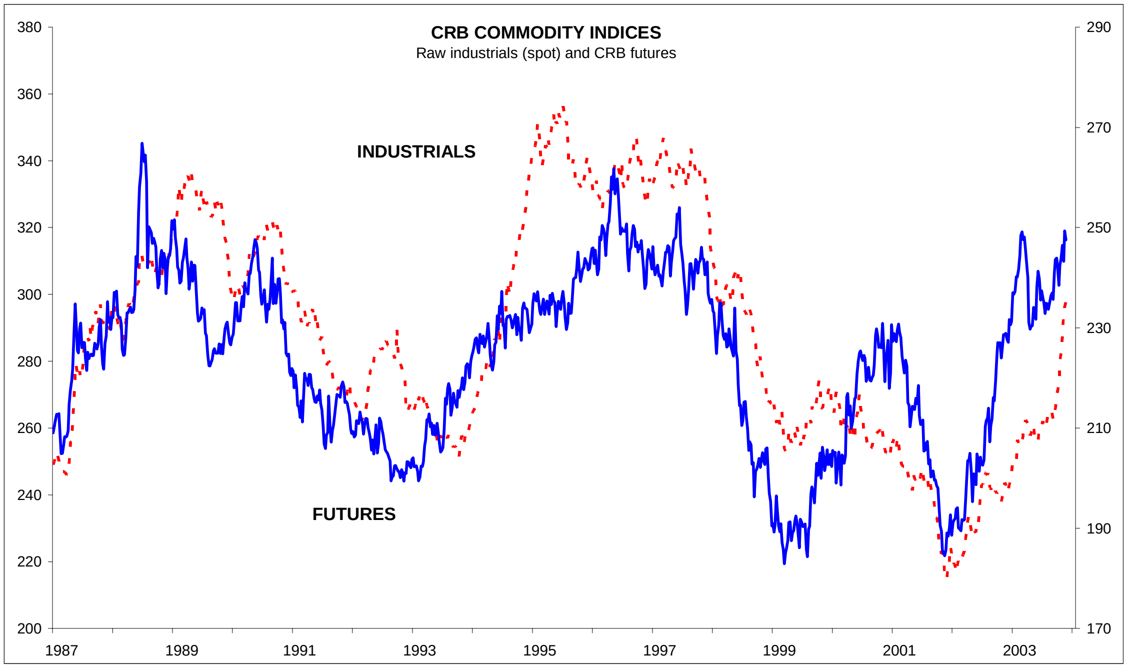


Fig. 3. 4 The commodity futures index follows turning points in the business cycle. Commodities weaken after a phase of slower growth in business activity. They strengthen after a phase of improving economic conditions.

c. <u>Predicting turning points in inflation (lagging indicator)</u>

Like commodity prices, the amplitude of the movement of inflation depends on the levels of real short-term interest rates. Low real short-term interest rates (less than 1.4) associate with above average increases in inflation. High real short-term interest rates (above 1.4) associate with declining or low inflation.

A downturn in inflation, at the producer or consumer levels, is accompanied by the following conditions (see Fig. 3.2, configuration "D").

- The growth of the money supply has declined for at least 12 months;
- The yield curve has flattened for at least 12 months;
- The dollar has weakened for at least 12 months;
- The rate of progress in the stock market has declined for about a year.

These trends are accompanied by the following tendencies in the coincident indicators:

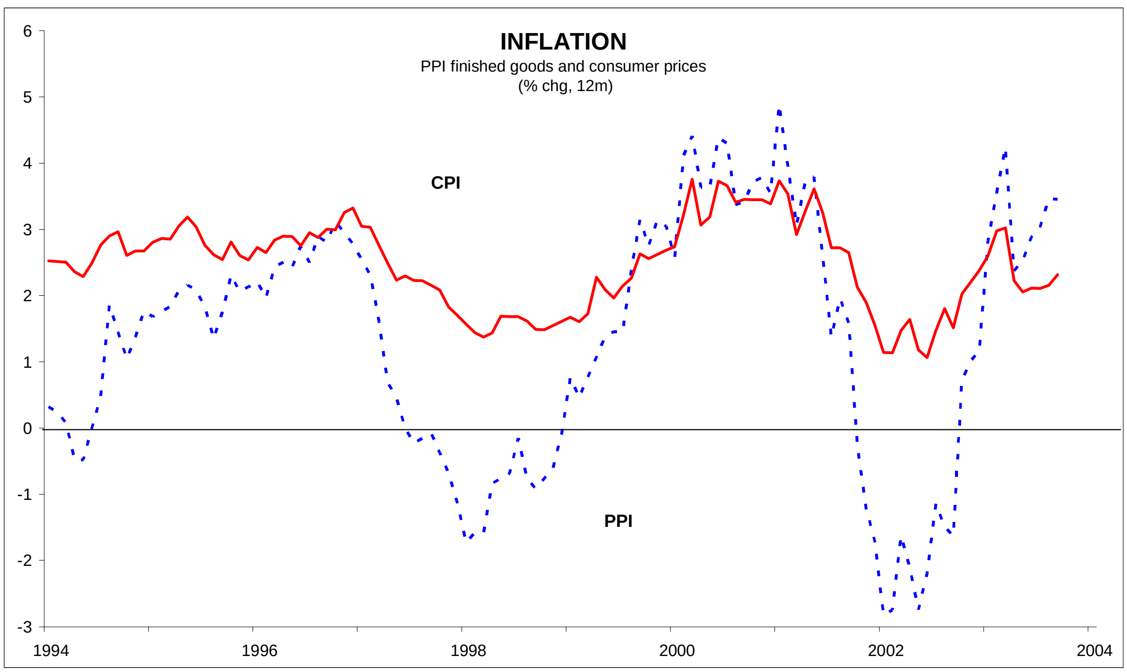
- The ISM index for manufacturing and non-manufacturing falls for about 12 months;
- The ISM index of vendor deliveries falls for about 12 months;
- The growth in industrial production declines for about 12 months;
- The growth in employment (manufacturing and total) declines for about 12 months.

An upturn in inflation, at the consumer or producer levels, is accompanied by the following trends (Fig. 3.2, configuration "G").

- The growth of the money supply rises for at least 12 months;
- The yield curve has steepened for at least 12 months;
- The dollar has strengthened for at least 12 months;
- The stock market prices have improved for about a year.

These trends are accompanied by the following tendencies in the coincident indicators:

- The ISM index for manufacturing and non-manufacturing rises for 12-24 months;
- The ISM index of vendor deliveries improves for 12-24 months;
- The growth in industrial production rises for about 12-24 months;
- The growth in employment (manufacturing and total) has improved for about 12-24 months.



<u>Fig. 3. 5</u> Inflation, at the consumer and producer levels, has the same turning points in the cycle as commodity prices. Inflation and commodity prices follow the turning points of the business cycle. After a phase of slower growth in business activity, inflation declines. Inflation increases after a phase of improving economic conditions.

d. <u>Predicting turning points in short-term interest rates (lagging indicator)</u>

Short-term interest rates are driven by market conditions. A stronger economy drives short-term interest rates higher. Short-term interest rates decline when the economy weakens. The Fed adjusts the inter-bank rate (fed funds rate) to match market rates. This process is discussed in detail in *Profiting in Bull or Bear Markets*.

Sometimes the Fed needs to resort to extreme measures because of very weak economic conditions. The Fed can lower short-term interest rates below market rates. During such times, real short-term interest rates fall to unusually low levels. Low real short-term interest rates stimulate economic growth with strong inflation. The market eventually wins and drives short-term interest rates higher. The Fed is forced to adjust the inter-bank rate accordingly. The market always prevails.

The Fed can distort the market pricing mechanism temporarily. But, the longer this distortion lasts, the more drastic the market must correct. In the 1970s, the Fed forced real short-term interest rates to very low levels. The result was soaring inflation from 3% to 15%. At the same time, short-term interest rates jumped from 3% to 20%.

A downturn in short-term interest rates is accompanied by the following conditions (Fig. 3.2, configuration "D").

- The growth of the money supply has declined for at least 12 months;
- The yield curve has flattened for at least 12 months;
- The dollar has weakened for at least 12 months;
- The rate of progress in stock market prices has declined for about a year.

These trends are accompanied by the following tendencies in the coincident indicators:

- The ISM index for manufacturing and non-manufacturing falls for 12-24 months;
- The ISM index of vendor deliveries falls for about 12 months;
- The growth in industrial production declines for about 12 months;
- The growth in employment (manufacturing and total) declines for about 12 months.

An upturn in short-term interest rates is accompanied by the following trends (Fig. 3.2, configuration "G").

- The growth of the money supply has risen for at least 12 months;
- The yield curve has steepened for at least 12 months;
- The dollar has strengthened for at least 12 months;
- The stock market has improved for about a year.

These trends are accompanied by the following tendencies in the coincident indicators:

- The ISM index for manufacturing and non-manufacturing rises for 12-24 months;

- The ISM index of vendor deliveries improves for 12-24 months;
- The growth in industrial production rises for 12-24 months;
- The growth in employment (manufacturing and total) improves for about 12-24 months.

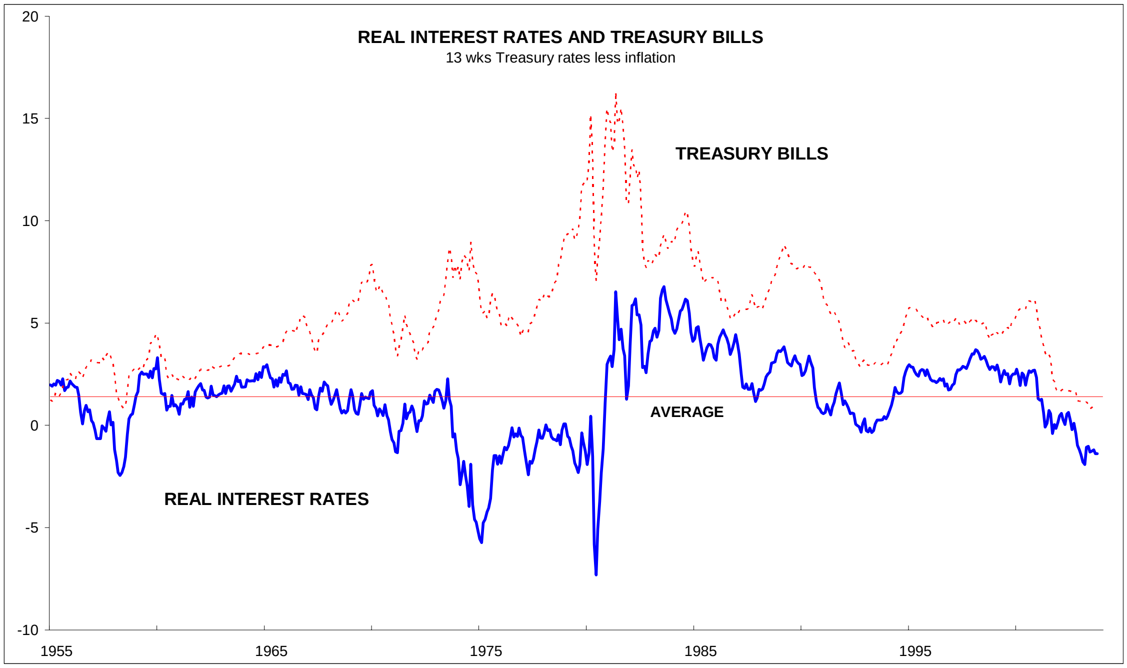


Fig. 3. 6 Phases of rising inflation and short-term interest rates accompany low real short-term interest rates. Inflation declines or is stable at low levels when real short-term interest rates are higher than their long-term average. Inflation rises when real short-term interest rates are below their long-term average.

e. Predicting turning points in bond yields (lagging indicator)

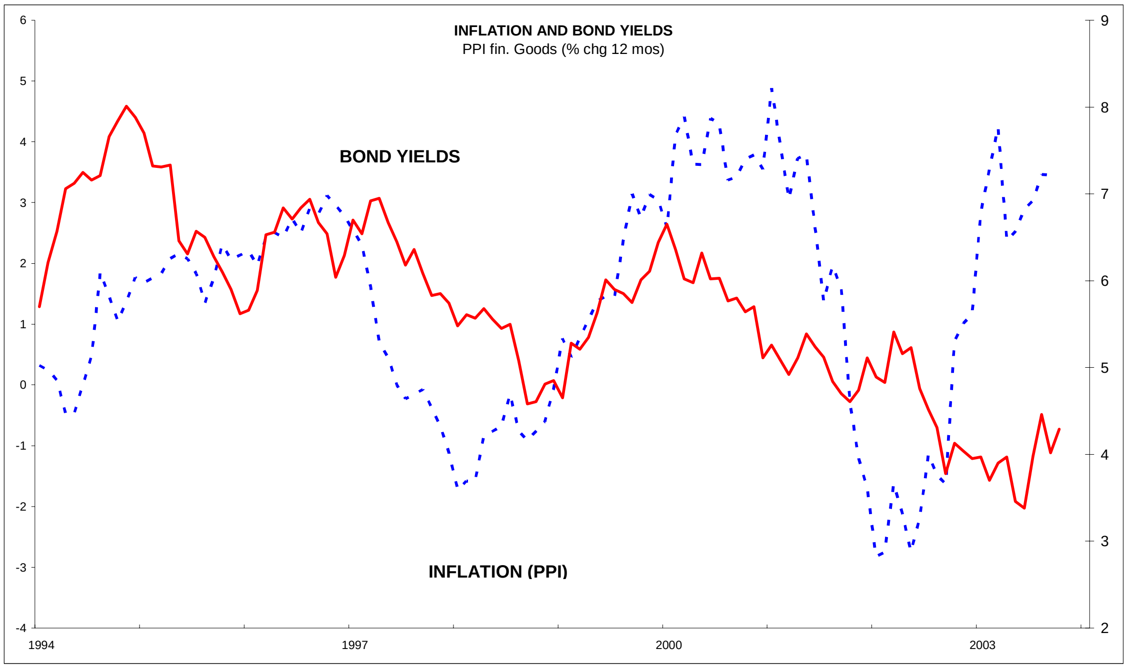
Like commodity prices and inflation, the cyclical movement of bond yields depends on the levels of real short-term interest rates. Low real short-term interest rates associate with above average rises in bond yields. High real short-term interest rates accompany declining or low bond yields.

A downturn in bond yields is accompanied by the following conditions (Fig. 3.2, configuration "D"):

- The growth of the money supply has declined for at least 12 months;
- The yield curve has flattened for at least 12 months;
- The dollar has weakened for at least 12 months;
- The rate of progress in stock market prices has declined for about a year.

These trends are accompanied by the following tendencies in the coincident indicators:

- The ISM index for manufacturing and non-manufacturing falls for 12-24 months;
- The ISM index of vendor deliveries falls for about 12 months;
- The growth in industrial production declines for about 12 months;
- The growth in employment (manufacturing and total) declines for about 12 months.



<u>Fig. 3. 7</u> Bond yields have the same cyclical turning points as inflation and commodity prices. Yields follow the turning points of the business cycle. Yields decline after a phase of slower growth in business activity. Yields increase after a phase of improving economic conditions.

An upturn in bond yields is accompanied by the following trends (Fig. 3.2, configuration “G”).

- The growth of the money supply has risen for at least 12 months;
- The yield curve has steepened for at least 12 months;
- The dollar has strengthened for at least 12 months;
- The stock market has improved for about a year.

These trends are accompanied by the following tendencies in the coincident indicators:

- The ISM index for manufacturing and non-manufacturing rises for 12-24 months;
- The ISM index of vendor deliveries improves for 12-24 months;
- The growth in industrial production rises for 12-24 months;

- The growth in employment (manufacturing and total) improves for about 12-24 months.

f. Predicting turning points in the growth of the money supply (leading indicator)

The growth of the money supply is an important measure because it reflects the borrowing appetite of business and consumers. The rise in the growth of the money supply reflects increasing liquidity in the system. A decline in the growth of monetary aggregates reflects less borrowing by consumers and business and thus decreasing liquidity (Fig. 3.2).

- Declining growth in industrial output, employment, and ISM indexes reflects slower growth in business activity.
- Short-term and long-term interest rates eventually decline because of the protracted decline in the growth of business activity and lower demand for money.
- Lower interest rates encourage business and consumers to borrow more.
- The growth of the money supply increases as banks and other lenders encourage business and consumers to borrow.
- Liquidity increases as funds move from lenders to borrowers (investors, businesses, and consumers).
- The increased liquidity is eventually reflected in a stronger economy. The economy takes about 12-24 months to respond positively to improving liquidity.
- Economic momentum increases as higher sales are translated in higher production, employment, and income.
- Short-term interest rates, bond yields, inflation, and commodity prices start to rise when business growth rises above its average long-term growth rate (about 3%).
- The rise in interest rates and costs discourages business from new investments.
- Consumers become more cautious about spending and borrow less as real income slows down due to rising inflation.
- Business borrows less because of deteriorating margins caused by higher inflation and interest rates.
- The growth of the money supply declines because of lower demand for money.
- Lower liquidity in the system is eventually followed by slower growth in business activity.
- And the cycle starts all over again.

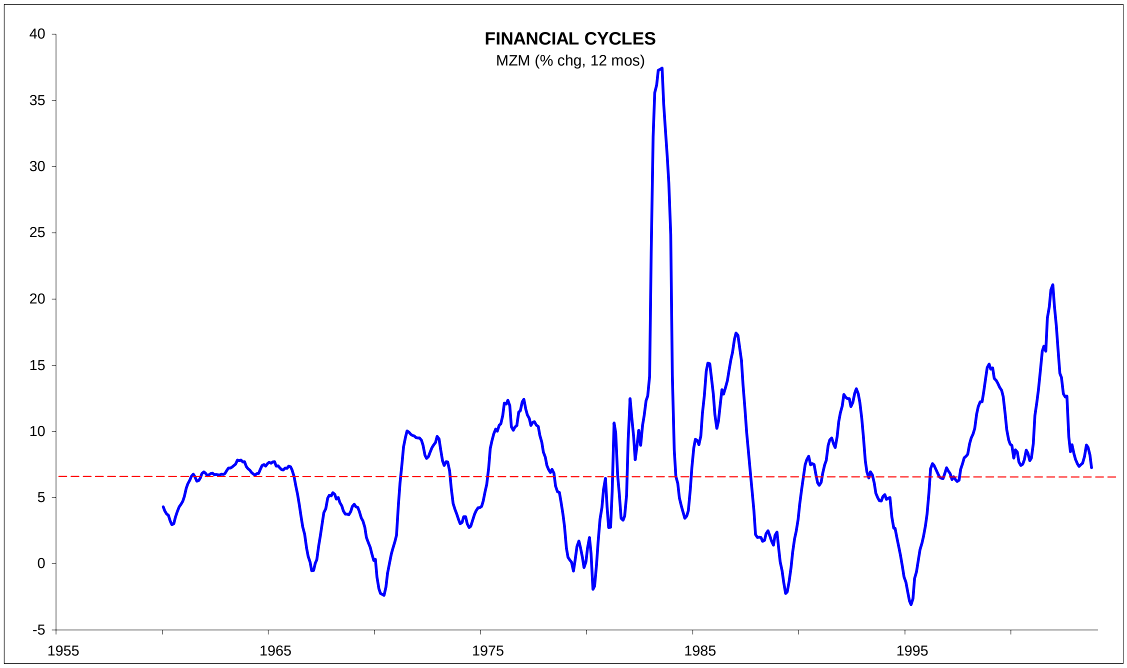


Fig 3. 8 The growth of the money supply averages 6-7%. The average trough-to-trough length is about 5-7 years. The turning points for the growth of the money supply lead turning points in the business cycle. A decline in the growth of business activity follows a peak in the growth of the money supply after 12-24 months. A rise in the growth of business activity follows a bottom in the growth of the money supply after 12-24 months. The growth of the money supply is sensitive to interest rates. Shortly after a rise in interest rates, the growth of the money supply declines as demand for money decreases. A decline in interest rates, on the other hand, is followed within a few months by increased demand for money and rising growth in monetary aggregates.

g. Predicting turning points of the shape of the yield curve (leading indicator)

The shape of the yield curve is measured by the difference between 10-year Treasury bond yields and the rate on the 13-week Treasury bills. The shape of the yield curve reflects the level of liquidity in the financial system. A steeper yield curve suggests liquidity is increasing. Short-term interest rates decline relative to bond yields. A flatter yield curve suggests liquidity is decreasing. Short-term interest rates rise relative to bond yields (Fig. 3.2).

- Declining growth in industrial output, employment, and ISM indexes reflects slower growth in business activity.
- Because of the protracted decline in the growth of business activity and lower demand for money, short-term and long-term interest rates eventually decline.
- As short-term interest rates drop, the yield curve gets steeper.
- Lower interest rates encourage business and consumers to borrow more.
- A steeper yield curve increases lenders' desire to lend money.

- As funds move from lenders to borrowers (investors, businesses, and consumers), liquidity increases.
- Increased liquidity eventually shows up as a stronger economy.
- Economic momentum increases as higher sales translate into higher production, employment, and income.
- Short-term interest rates, bond yields, inflation, and commodity prices start rising when business grows above its average long-term growth rate (about 3%).
- As short-term interest rates rise faster than long-term interest rates, the yield curve flattens.
- The rise in short-term interest rates and costs discourage business from borrowing to make new investments.
- Consumers spend cautiously as real income slows down.
- Business and consumers borrow less because business conditions deteriorate due to higher inflation and interest rates.
- Less liquidity in the system is eventually followed by slower growth in business activity.
- And the cycle starts all over again.

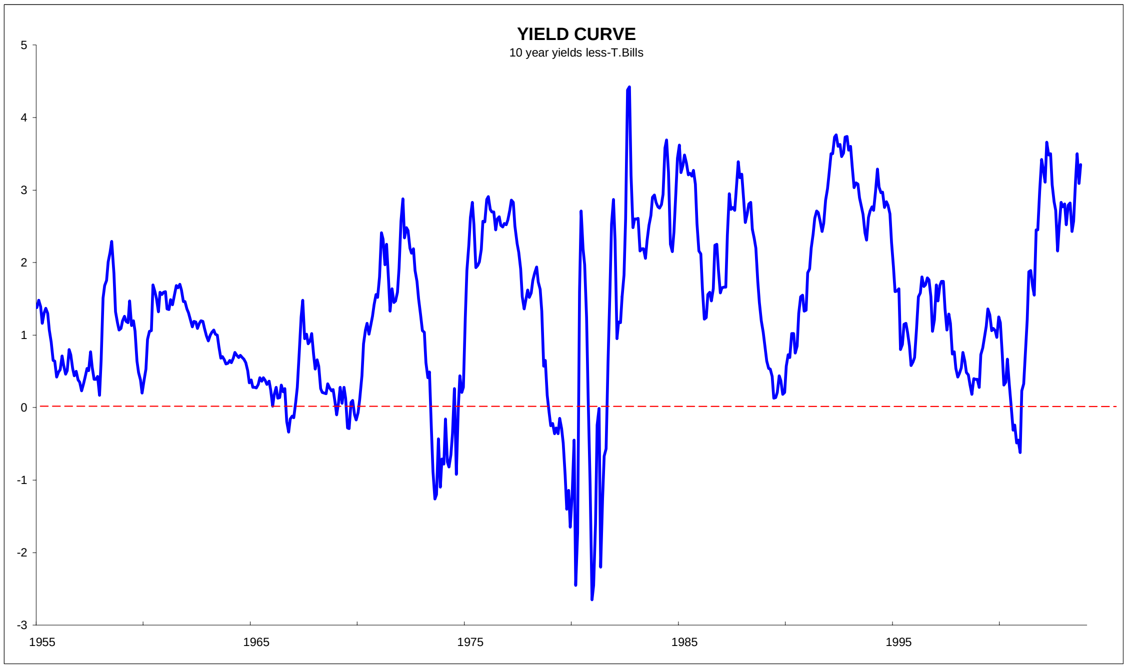


Fig 3. 9 Turning points of the yield curve lead turning points in the business cycle. As the yield curve flattens, the growth of business activity declines after about 12-24 months. As the yield curve becomes steeper, the growth of business activity goes up after about 12-24 months.

h. <u>Predicting turning points in credit spreads (leading indicator)</u>

The ratio between the yield on BAA bonds (lower quality bonds) and the yield on 10-year Treasury bonds indicates the degree of risk in the financial markets. When the ratio increases, risk increases. When the spread declines, risk declines.

An increase in the ratio is a sign the market is raising the risk premium to business borrowers. The increased risk premium makes borrowing more costly and difficult for lower credit-worthy companies. This credit crunch creates slower growth in the money supply because business is discouraged from borrowing.

A decrease in the ratio is a sign the market is lowering the risk premium to business borrowers. The reduced risk premium makes borrowing less costly. The increased borrowing stimulates the growth of the money supply (Fig. 3.2).

- Slower growth in business activity is reflected by declining growth in industrial output, employment, and declining ISM indexes.
- Short-term and long-term interest rates eventually decline because of the protracted decline in the growth of business activity and lower demand for money.
- Lower interest rates encourage business and consumers to increase their borrowing.
- Liquidity increases as funds move from lenders to borrowers (investors, businesses, and consumers).
- Credit spreads increase due to the increase in business borrowing.
- The increased liquidity is eventually reflected in a stronger economy.
- Economic momentum increases as higher sales are translated in higher production, employment, and income.
- Short-term interest rates, bond yields, inflation, and commodities start rising when business growth rises above its average long-term growth rate (about 3%).
- The rise in interest rates and costs discourages business from making new investments.
- Consumers become more cautious about spending as real income slows down.
- Business and consumers borrow less because of deteriorating business conditions caused by higher inflation and interest rates.
- Liquidity slows down.
- Credit spreads decline due to a decrease in business borrowing.
- Lower liquidity in the system is eventually followed by slower growth in business activity.
- And the cycle starts all over again.

i. Predicting turning points in the stock market (leading indicator)

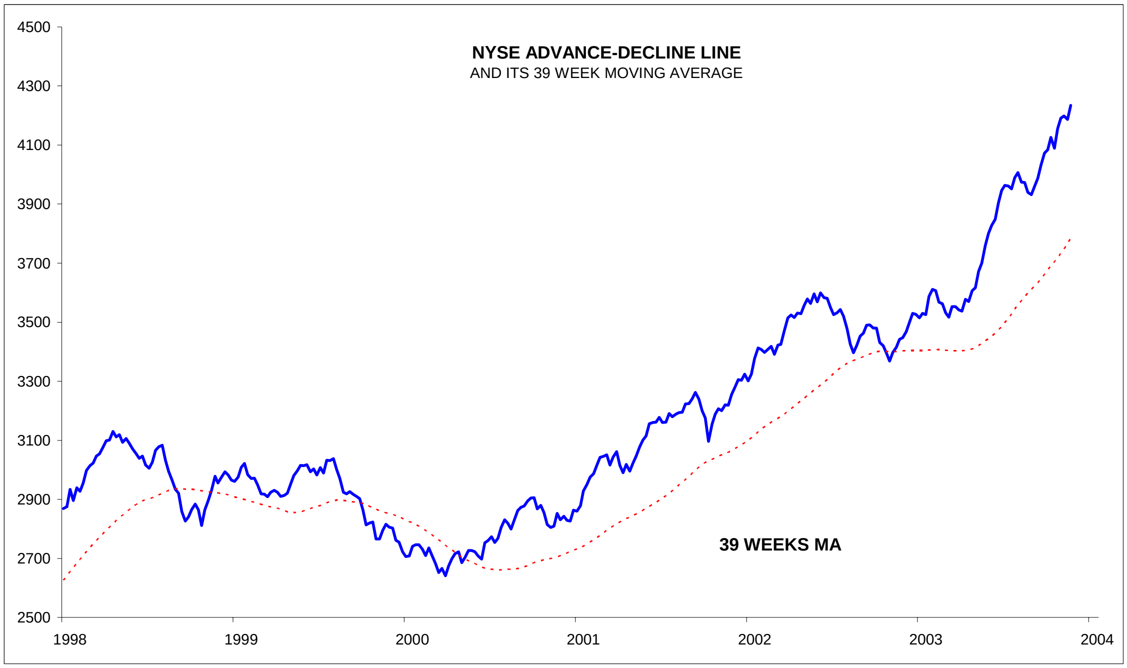


Fig 3. 10 Turning points of stock prices lead turning points in the business cycle. A decline in stock prices is accompanied by slower growth in the money supply. A rise in stock prices is accompanied by faster growth in the money supply due to increases in borrowing by corporations.

The change in stock prices depends on the growth of liquidity. Rising growth in liquidity precipitates faster growth in stock prices. A decline in liquidity causes slower growth in stock prices (Fig. 3.2).

- Slower growth in business activity is reflected by declining growth in industrial output, employment, and declining ISM indexes.
- Because of the protracted decline in the growth of business activity and lower demand for money, short-term and long-term interest rates eventually decline
- Lower interest rates encourage business and consumers to borrow more.
- Liquidity increases as funds move from lenders to borrowers (investors, businesses, and consumers).
- Stock prices rise due to the increased liquidity in the system.
- The increased liquidity is eventually reflected in a stronger economy.
- Economic momentum increases as higher sales are translated in higher production, employment, and income.
- Short-term interest rates, bond yields, inflation, and commodities start rising when business growth rises above its average long-term growth rate (about 3%).

- The rise in interest rates and costs discourages business from making new investments.
- Consumers are cautious about spending as real income slows down.
- Business and consumers borrow less because of deteriorating business conditions caused by higher inflation and interest rates.
- Liquidity decreases and stock prices perform poorly.
- Lower liquidity in the system is eventually followed by slower growth in business activity.
- And the cycle starts all over again.

5. Conclusions

The business cycle measures the growth of the economy. The growth of the economy is very sensitive to the way consumers and business react to changing economic conditions. A decline in the growth of costs (lagging indicators) improves the profitability of business. A decline in inflation and interest rates (lagging indicators) improves the purchasing and borrowing power of consumers. As business and consumers borrow more, monetary aggregates leading indicator) grow faster. Eventually the economy (coincident indicator) strengthens with a typical lag of 12-24 months from the turning point of the money supply.

The economy gains strength as producers increase production to match rising sales. Employment and income increase. This process is reinforced until the economy grows well above the average (close to 3%). It usually takes 12-24 months for the economy to reach this stage. Because of scarce labor and capacity and the strong demand for money, interest rates, commodity prices, and inflation begin to rise. This controlling mechanism returns the business cycle to sustainable growth.

Rising costs mean less profit to business. A rise in inflation and interest rates diminishes the buying and borrowing power of consumers. Business and consumers begin to minimize how much they borrow. The growth of the money supply declines within about six months from the bottom of interest rates and inflation.

Slower growth in liquidity is followed after 12-24 months by slower growth in business activity. After 12-24 months of a down turn in the growth of the economy then interest rates, inflation, and commodities begin to decline. And the business and financial cycle starts again.

The above lead-lag times are representative. The lead-lag times tend to be longer when the economy is very strong or very weak. They are shorter when the economy is growing close to its potential.

This chapter reviews, in detail, what happens in each configuration of the business and financial cycles. This formal way of looking at business and financial cycle developments helps us forecast turning points in stock prices, interest rates, commodities, the dollar, the growth of the money supply, and inflation.

The model connects all of the indicators we need to follow (see Fig. 3.2).

- A peak in the leading indicators is followed by
- A peak in the coincident indicators, which is followed by
- A peak in the lagging indicators, which is followed by
- A trough in the leading indicators, which is followed by
- A trough in the coincident indicators, which is followed by
- A trough in the lagging indicators, which is followed by
- A peak in the leading indicators.

And the business and financial cycle repeat the pattern.

The business and financial cycle continue to repeat itself with regularity. The above relationships have another crucial attribute. In each phase of the business and financial cycle, there can be only one outlook. In other words, for each configuration of leading, coincident, and lagging indicators, we look for only one answer. By focusing on only one logical outlook, we can develop our investment strategy.

In the next chapter, we use these concepts to develop specific investment strategies and recognize risk. It is possible then to adjust our portfolio allocation to reflect the changing risk profile of each market depending on the changing configurations of the business and financial cycles.