

Because the world is currently experiencing one of its worst bear markets since the Great Depression, there is an even greater need to study past bull and bear markets to make long-term decisions about investing in the stock market.

Information on bull and bear markets in the United States is readily available from other sources, but we have introduced several innovations to help investors better understand the nature of bull and bear markets. Most sources only provide the beginning and ending dates for bull and bear markets based upon a price index, but we provide:

1. A history of bull and bear markets in the major stock markets outside of the United States
2. A history of bull and bear markets on a total return basis
3. A history of bull and bear markets on a total return, inflation-adjusted basis

By providing information on other countries, investors can see how the United States stock market has performed relative to other stock markets. Dividends are an important part of investor returns. Ignoring them doesn't provide a true picture of how much investors would have earned during bull or bear markets. This is truer in the past than it is today because dividend yields are much lower today than they were in the past. Just looking at the price index ignores about one-third of investor returns.

Similarly, adjusting for inflation is also important. Inflation has been higher since World War II, and was especially strong in the 1940s and 1970s. Inflation reduces the size of bull markets and increases the size of bear markets. In some cases, bull markets have simply been attempts to keep up with inflation. For example, the return index for France rose by 321% between July 1945 and October 1948, but adjusting for inflation, investors actually lost 9% during those three years because inflation wiped out the capital gains and dividends investors received.

The one variable we do not factor in is taxes. Tax rates vary from one country to another, vary from state to state, vary over time, vary between different income tax brackets, and differ for dividends and for capital gains. Given all of these complications, we have left taxes out of our calculations. All data are based upon before-tax returns.

WHEN IS A BULL A BULL AND A BEAR A BEAR?

At what point does a bull market become a bear market and a bear market become a bull market? This is a much more difficult question to answer than it might seem at first.

Bull and bear markets are measured from the highest closing value on an index to the lowest closing value on an index, and then back again. Simple enough, but in reality this presents several problems.

Some bear markets are short. Bad news creates a panic and stocks sell off suddenly. When no more bad news comes out and investors realize that the world isn't coming to an end, markets bounce back. The bear markets of 1987 and 1998 fit this category. Bull markets occur when a series of good news generates investor optimism, and bear markets occur when a series of bad

news generates investor pessimism.

Longer bear markets are actually a combination of smaller sell off markets as bad news succeeds bad news. The bear market of 2000-2002 has included three sell offs. The sell off in 2000 occurred because of the bursting of the Technology bubble, the sell off in 2001 occurred because of fears over recession and the terrorist attacks of September 11, and the sell off in 2002 occurred because of corporate malfeasance and the crisis of confidence it created. The Japanese market has been declining for 12 years now as new bad news has piled on top of old bad news driving the market further and further down.

Markets may take time to form bottoms or make tops, sometimes of two years or more. This makes it difficult to determine WHEN the market hit a top or a bottom. There may be only a slight difference between the lowest low on the market in one year and the lowest low in another year. What if a market touches 107.4 in August 1945. If the market hits another low in August 1947 at 107.5 did the bear market end in 1945, or if the market hits a low of 107.3 did the bear market end in 1947? For consistency, we always go with the lowest low, regardless of the timing.

Determining exact tops and bottoms is an even greater problem before the 1960s because many countries did not keep daily indices that could pinpoint the exact top or bottom. Instead, only monthly indices are available, and these can obscure the fluctuations of stocks within any given month, and thus, when bull and bear markets were initiated.

The timing of the top also depends upon the index that is used. Take the current bear market in the United States. The bull market of the 1990s topped on January 14, 2000 using the Dow Jones Industrials Average, March 24, 2000 using the S&P 500 Price Index, and September 1, 2000 using the S&P 500 Return Index. Which is correct?

As we demonstrated above, measuring the size of a bull or bear market differs dramatically depending on whether dividends and inflation are included. This is why we include price indices, total return indices and total return indices adjusted for inflation.

To see why this is important, let's take the example of someone who had invested at the top of the market in 1929. The S&P Composite Price index didn't return to its old 1929 high until 1954, but the S&P 500 Return Index rebounded to its old 1929 high in 1945, and on an inflation-adjusted total return basis, the S&P composite returned to the 1929 high at the 1937 bull market top. Quite a difference!

We exclude most rallies within a downtrend from our definition of bull markets. For example, in early 1930, the stock market in the United States rallied by almost 50% from the 1929 low before plunging to new lows later in the year. Obviously, this would not count as a bull market since it was primarily a reaction to an oversold market.

The definition of bull and bear markets should also be different before 1900 than after 1900. In the 1800s, inflation was low and investors depended more on dividends than on capital gains for their returns. As a result, throughout the 1700s and 1800s, there was virtually no overall

increase in the average price of stocks in London. For two centuries, virtually all of the return to investors came from dividends, not from capital gains. In the 20th Century, inflation provided an upward bias to stocks, and investors get more of their returns from capital gains than from dividends. Consequently, our standards for bull and bear markets before 1900 are more liberal than for the 20th Century.

Our definition of a bull or bear market is that during a bull market, the market must rise by at least 40%, preferably to a new high in the market, and the market must decline by at least 15% during a bear market. In some cases there are borderline bull and bear markets that we provide information on, leaving it to the judgment of the reader whether to include them or not. Before 1900, we use 25% as the minimum rise in the stock market on a price basis.

One important trend to notice is that the timing of bull and bear markets has become much better coordinated between global stock markets. There was little coordination of bull and bear markets in the 1960s, but virtually every stock market fell into a bear market in 1990, 1998 and in 2000-2002. This trend will probably intensify in the future as global stock markets become even more integrated.

We have included data for the most recent market bottom or top in each country. The most recent data should not be taken as THE market bottom or market top, but is given only to indicate the extent of the rise or decline during the current market cycle. These numbers will be revised, as changes require.

BULL AND BEAR MARKET INFORMATION

For each country, we provide the following information:

1. Bull and Bear Markets for the Broadest Price Index
2. Bull and Bear Markets for the Broadest Return Index
3. Bull and Bear Markets for the Broadest Return Index Adjusted for Inflation

In some cases, the current stock market index, which covers the broadest range of stocks in that country, lacks sufficient long-term daily data in order to determine when the exact tops and bottoms were. In those cases we have provided data from more than one index. For example, we provide stock market indices from both Toronto and Montreal for Canada since Montreal provides more historical daily data than Toronto, but Montreal no longer trades stocks.

For each market index we provide information on:

1. The date of the market top.
2. The value of the index at the market top.
3. The percentage change in the index from the previous high or low.
4. The length in time in calendar days of each bull or bear market.

We include information on all G-7 countries (Canada, France, Germany, Italy, Japan, United Kingdom and the United States) as well as Australia. We also provide data on two international portfolios, the MSCI World Index and the MSCI Europe Index in order that these international portfolios can be compared with national indices.

Finally, we provide summary statistics on the largest, smallest and average bull and bear market moves. This data will help to compare bull and bear markets with each other to see how an individual bull or bear market compares with the norm. We provide brief descriptions of the indices that are used here. More detailed information on sources is provided in the Encyclopedia of Global Financial Markets.

AUSTRALIA

Australia shows a low correlation with other stock markets because of its greater dependence on resource-based companies and because of its geographical distance from the United States and Europe. We have used the All-Ordinaries Index for both price and return indices, and data from the Sydney stock exchange before 1958.

The 1972-1974 bear market proved to be the worst for Australia in this century. The declines of the Great Depression were mitigated by the strength in Gold and other resource stocks. For the most part, the Australian stock market has been very resilient during the past century, having very strong bull markets and relatively mild bear markets with no declines over 50% on a total return basis. The reliance on resource stocks has also served the ASX well in the current bear market. It was the only major exchange to hit a new high in 2002.

The return data indicate that Australia enjoyed a continuous bull market from 1875 to 1929 as dividends sufficiently covered any decline in stocks during that period of time. However, since the Lambertson data do not include all stocks traded in Australia, there is probably some degree of survivor bias in these numbers.

CANADA

Canada's economy is tied to the US economy, but it relies more on resources than the United States does. These two factors drive the Canadian stock market more than anything else. The Montreal Stock Exchange has the longest daily data for any overall index of the Canadian market, but in 2000 the Montreal Stock Exchange stopped trading stocks and discontinued their stock market index. Consequently, indices from both the Montreal and Toronto Stock Exchanges are provided for Canada.

Canada suffered its worst stock market decline during the 1929-1932 bear market when the Investor's Index of stocks declined by 80%, almost as much as the decline in the United States. The 1973-1974 bear market was milder than in the United States because of the role of oil and gold stocks in Canada. The 2000-2002 bear market in Canadian stocks is the worst decline in the Canadian stock market since the 1929-32 bear market.

EUROPE

The European stock index uses Morgan Stanley Capital International's (MSCI) Europe Index as measured in US Dollars back to 1969 and our own reconstruction prior to that. Because the index relies on stock markets from a number of different countries, the bear markets are fewer

and milder than they are for individual European countries. Since the Europe index is calculated in US Dollars, the return index is adjusted for inflation using data from the United States' CPI.

Several things should be noted about the European index. First, Europe failed to recover from the post World War I decline as strongly as the United States did, primarily because stock markets in northern Europe did not recover during the 1920s. Europe's January 1929 high was only about 20% above its 1919 high. A smaller bull produced a smaller bear, and this reduced the size of the decline in 1929-1932.

Data from the 1940s should be taken with a grain of salt because currency controls and stock market controls reduced convertibility and liquidity of stocks, and thus the reliability of the data. The Germans introduced laws that prevented stocks from trading at lower prices, and the black market value of the Mark, Lira and other currencies was substantially below their official values. Moreover, strong inflation in Italy and France, as well as the German currency reform in 1948 sent the value of European stocks crashing as measured in US Dollars. The combination of these factors, which culminated in the devaluation of European currencies in 1949 led to a European stock market crash more vicious than that of the Great Depression.

Since 1949, European stocks have provided comparable returns to US stocks, and bull and bear market phases have followed the rises and declines in the United States. The 2000-2002 bear market is the worst in Europe since 1950, exceeding even the 1973-1974 decline.

FRANCE

The Paris stock exchange has not played as important a role in the French economy as the stock markets in London and New York have in their countries. In general, French stocks have underperformed the stock markets of other countries as inflation, economic, military and political problems hurt French investors. The SBF-250 index is used for current data, and the CAC General Index and the INSEE General Index of stocks are used before the 1990s.

France participated in the economic boom of the 1920s more strongly than other European countries, but it also had the longest bear market during the 1930s of any major country. The election of a Socialist government in France in the mid-1930s prevented the market from recovering earlier than it did. The strong nominal performance of French stocks in the 1940s is due more to inflation than to a recovery in the stock market. During the 1945-1948 bull market, the nominal return index rose by 321%, but the inflation-adjusted index fell by 9%. Quite a difference!

Since 1950, French stocks have done relatively well, following the bear and bull market patterns of the rest of the world. Nevertheless, French bear markets usually lasted longer than those in other countries, usually topped out before the rest of the world and recovered later. French stocks lost half their value during the 2000-2002 bear market, exceeding the declines that occurred in 1973-1974.

GERMANY

German stock market data are heavily influenced by the military and economic woes that beset the country during the 20th Century. Two price indices are provided for Germany. The Commerzbank index provides daily data back to 1956, but was discontinued in 2000. The CDAX All-Share index is daily back to 1970. Prior to that, indices calculated by the Bundesamt and the Reichsamt have been used to provide long-term data on Germany.

Germany had more severe stock market crashes than any other country in the 20th Century. During the hyperinflation of the 1920s, stocks declined by over 98% between 1918 and 1922 wiping out virtually all equity wealth. Data from the hyperinflationary period are measured in inflation-adjusted marks to eliminate the effects of the hyperinflation. Otherwise, the index values would have to be measured in the trillions!

The Great Depression produced a less severe, but still staggering drop of 74% between 1929 and 1932 as Germany succumbed to economic collapse. The Nazi government placed controls on stock prices during World War II, which delayed the drop in the value of stocks until after the war. This was compounded by the currency reform of 1948, which wiped out 90% of the value of financial assets, leading to an 80% decline in stocks.

Since 1950, German stocks have performed relatively well. Note that the 1960-1962 bear, which included problems in Berlin, was worse than the 1973-1974 decline, and that the 1987 crash was the culmination of a bear market that had begun in 1986. The 2000-2002 decline in German stocks is worse than either of these post-war bear markets, with stocks declining almost 60% from their highs.

ITALY

Italian stocks were the worst performing stocks of any major country during the 20th Century. War, inflation, a reliance on small industry, labor unrest, a lack of development in the south and other problems have beset Italian investors for the past 100 years. Italy has never developed an equity culture similar to that in the Anglo-Saxon countries. Bear markets in Italy have been longer and deeper than in any other country.

Inflation should be considered whenever bull markets are measured in Italy. The 12-year bull market from 1932 to 1944 produced a 3035% increase in nominal terms, but only a 67% increase after inflation. Amazingly, after adjusting for dividends and inflation, the Italian stock market was just 9% above its 1928 peak in September 1992! Sixty years and no real returns. Now you know why Italians indulge in la dolce vita.

The 2000-2002 bear market will mark the tenth time during the past century in which Italian stocks have declined by 50% or more. The 1973-1974 bear didn't end until 1977, and the 1987 bear began in May 1986. Similarly, the Gulf War bear market was followed by a second decline in stocks in 1992 when the Lira sank after the European currency crisis. Italian investors must certainly hope that the adoption of the Euro will bring the Italian market more in line with the behavior of other European markets.

JAPAN

Japan's stock market has shown a very low correlation with the rest of the world's stock markets because of its distance from and lack of integration with the rest of the world's financial markets. This remains as true in the 21st century as it was in the 20th century. The TOPIX index provides daily data back to 1953, and other indices extend the monthly data back to 1914. All return data are monthly.

Japan's worst single bear market occurred between 1920 and 1924 as the economy slowed following World War I. However, if you treat the 1990-2002 decline as a single bear market, the overall decline on the price index comes to 68%, exceeding that of 1920-1924. The post-World War II inflation wiped out investor profits. The 3280% nominal rise in Japanese stocks between October 1930 and August 1949, was actually a 75% decline when adjusted for inflation.

Severely oversold in 1949, the Japanese stock market bounced back strongly between 1950 and 1990 producing some of the strongest bull markets of any stock market in the world. Japan did face strong declines in 1973-1974, but was barely phased by the 1987 crash. Since the popping of the Japanese stock market bubble, the performance of the Tokyo stock exchange has been horrible, with the stock market currently only 25% higher than its 1973 peak on an inflation-adjusted return basis.

THE UNITED KINGDOM

London provides the longest history of any stock market, allowing us to look back over 300 years to see how the market has behaved since 1700. However, analyzing bull and bear markets prior to 1900 is difficult because of the lower rate of inflation and the greater importance of dividends. Moreover, since no contemporary indices were calculated, all stock market indices have been calculated retrospectively, and these stock market indices exclude companies that had short lives during stock market manias and did not survive the crash that followed. Any data from before World War I should be treated as general indicators.

We use three indices for the United Kingdom. The Financial Times 30 Industrials provides the longest daily history for British stocks; however, the index only includes 30 stocks, and it is increasingly less representative of the market as a whole. The FTSE All-Share provides a more representative indicator of British stocks, but it only provides daily data back to the 1960s. Prior to that, other broad indices of British stocks have been used to provide data back to 1700.

The two primary crashes before World War I were in the 1720s when the South Sea Bubble struck England, and in the 1820s in the post-Napoleonic War boom that led to massive speculation in Latin American mines and a second stock market bubble. These two declines were worse than the decline during the Great Depression (1929-1932) and World War II (1936-1940). The 1972-1974 bear market was the worst bear market of the 20th Century for the United Kingdom as OPEC, runaway inflation, and political problems decimated investor confidence. Since this bear market occurred during a period of high inflation, the 77% real decline comes close to matching the US bear market of the Great Depression.

THE UNITED STATES

The United States is the country for which the most detailed stock market information is available, and for which we can provide the best analysis of bull and bear markets. We use three indices to analyze past bull and bear markets in the United States.

The Dow Jones Industrials Average is used both because it provides a benchmark for stocks in the United States, and because it has the longest daily stock market data of any index. We have adjusted the data from the Dow Jones 12 Industrials, which was calculated before 1914, to the Dow Jones Industrial Average to provide a consistent measurement of the size of bull and bear markets.

The S&P 500 Composite is a better benchmark of the US Stock Market since it currently includes about 75% of the stock market's capitalization. The S&P Composite included 90 stocks until 1957 and 500 stocks thereafter. S&P started calculating data for the index in 1918. Data were calculated back to 1871 by the Cowles Commission, and we used various broad indices of the US stock market for data back to 1800. The Total Return version of the S&P 500 was calculated using historical data on the price index and on dividend yields.

A brief history of the principal causes of past bear markets is provided below. For more information see either *101 Years on Wall Street* by John Dennis Brown, or *Wall Street and the Stock Markets* by Peter Wyckoff.

1835-1843

The first real panic caused by falling land prices, an overexpansion of credit, and the bursting of the canal building bubble.

1847-1848

The crisis in Europe in 1848 affected US stocks.

1852-1857

A default in California and a banking crisis between 1853 and 1855 culminated in the "Banker's Panic" of 1857 as the California Gold Bubble ended.

1864-1865

The Civil War ended leading to deflation

1872-1877

The failure of Jay Cooke & Co. and the collapse of rail speculation closed the NYSE for 12 days in 1873 and led to a long-term recession.

1881-1885

The market initially fell after Garfield was shot, and a 3-year economic depression followed.

1887-1896

Railroad wars, silver legislation, the Baring Crisis and other events kept the market in a bearish mode

1901-1903

The “Nipper” Panic caused by the corner on Northern Pacific Railroad stock, President McKinley was assassinated, and the “Rich Man’s Panic” in 1903 caused by high interest rates and an overissuance of securities.

1907

The bursting of the Copper stock bubble and the Financial Panic of 1907

1912-1914

Pre-World War jitters

1916-1917

Investors were scared that either peace or war could slow economic activity

1919-1921

Post-World War I Depression and Deflation

1929-1932

The 1929 Stock Market Crash, Banking Panic, the Great Depression

1934-1935

The market falls back after recovering from 1932 lows

1937-1938

Recession within the Great Depression

1938-1942

World War II Begins as the Axis powers attack the Allies

1946-1947

Post-World War II Recession and Deflation

1957

Concerns over Sputnik, Hungary and Eisenhower’s heart attack

1961-1962

The “Kennedy Panic” over confrontation between Kennedy and the steel industry

1968-1970

Concerns over Viet Nam, inflation and domestic problems

1973-1974

OPEC, Watergate, inflation and recession

1976-1978

Stagflation, budget deficits and trade deficits

1980-1982

High interest rates, the second OPEC crisis, recession, inflation

1987

An overvalued market and program trading lead to the 1987 stock market crash

1990

The Gulf War begins and Japan's stock market bubble ends

1998

Russia defaults and Long Term Capital Management crashes

2000-2002

The Internet bubble, an overvalued market, recession, corporate malfeasance

The US stock market has been one of the world's strongest in the past century, and this is reflected in its performance. The worst bear market was the 1929-1932 crash when overvalued stocks, economic crises in Europe, banking crises in the United States, reductions in international trade, and a lack of confidence led to three years of horrific declines. Including dividends and deflation reduces the size of the 1929-1932 bear from 86% to 79%. The 1929-1932 bear is followed in size by the 1937-1938, 1973-1974 and 2000-2002 bear markets, each of which declined by 45-50%. Other bear markets were shorter and shallower than these three major bears.

Adjusting for dividends and inflation strengthens the returns from the 1950s bull market and especially the 1920s bull market. The 675% increase in the value of stocks between 1921 and 1929 dwarves all other bull markets. Three bull markets in the 1930s produced gains of 100% even though the market remained below the 1929 high.

The US stock market was in a trading range between 1947 and 1949. On a total return basis, the market bottomed out in 1947, even though the price index hit a slightly lower low in 1949. The huge bull market of 1947-1961 followed, interrupted only by a brief decline in 1957. The period from 1961 to 1982 provided no real returns to investors, despite periodic moves up and down. At the market bottom in 1982, the US inflation-adjusted return index was no higher than it had been in 1961.

After 1982, the US stock market entered into a huge bull phase in which stocks increased in value over 14-fold before declining by almost 50% between 2000 and 2002. Based upon past

evidence. The US is likely to remain in a trading range on an inflation-adjusted return basis for the next 10-15 years.

WORLD

The MSCI World Index has been calculated since 1969, and we have extended the index back to 1919 on a price basis and 1925 on a return basis. Since the World Index is a combination of all of the world's indices, it can help us focus on the events that affected global stock markets and factor out purely national events. Since the United States represents almost 50% of the world index, its influence on the index should not be ignored. Data are adjusted for inflation using the United States' CPI.

Measured on a global basis, the 1929-1932 bear market was clearly the worst stock market decline of the 20th Century with stocks falling by 63% on an inflation-adjusted return basis. There have been four other declines in global stocks of around 50%. The first occurred after World War I between 1918 and 1919 when the post-war recession caused a 50% decline in stocks. A second decline of 50% occurred after World War II, largely because of the collapse in the price of European and Japanese shares due to the decimation caused by World War II and the inflation and problems that followed the end of the war. A third decline of 49% occurred during the 1973-1974 bear market, and the decline of 2000-2002 has been about 47%. Other declines have been relatively modest.

The relative weakness in European stocks in the 1920s reduced the global strength of the 1920s bull market, which was strongest in the United States. The collapse in stock values after World War II laid the foundations for the greatest bull market of the 20th Century. The 1949-1961 global bull market produced a 550% increase in stocks on an inflation-adjusted return basis. Only the bull market of the 1980s and 1990s came close to matching the 1950s bull.