

The only thing certain about the stock market is that you can't predict what is going to happen in the future. This puts investors in a difficult position. Investors want to maximize their return while minimizing their risk, but of course, increasing return increases risk.

One way of understanding what could happen in the future is to study the past, but many investors base their predictions about the future only on what has happened in the past year or two. They fail to look at the stock market over longer periods of time to understand how financial assets respond to changes in the economy.

Most people today have set money aside in a 401(k) and in mutual funds to provide them with income after they retire. Planning for retirement requires investors to anticipate what is going to happen to stocks and bonds over the next ten or thirty years, but returns on both stocks and bonds are volatile. Each decade presents new problems and opportunities for investors, and if investors cannot predict what is going to happen in the future, they can at least study the past to better understand how to react to changes in the market.

The GFD Guide to Total Returns on Stocks, Bonds and Bills analyzes long-term historical returns to these assets. As in our other publications, we analyze historical returns not only in the United States, but also in all of the G-7 countries (Canada, France, Germany, Italy, Japan, United Kingdom and United States), as well as Australia and international portfolios for Europe and the World. This enables investors to compare the performance of stocks, bonds and bills in their own country with returns in other countries, or in the world as a whole.

This guide provides a fascinating review of total returns over time and space. It shows how misleading US Data alone can be because the US experience is not fully replicated in other countries. Average stock returns and the equity-bond premium have been lower in other countries than in the United States, and other countries have seen even greater swings in the returns to investors than the United States has. Investors in some countries, such as Germany in the 1920s, even saw a complete loss of their investment. This review also shows a sharp contrast between the returns to investors before 1950 and after 1950, a contrast that is even greater outside of the United States, and shows that buy and hold has not always been the best investment strategy.

For information on the sources of the historical data, please refer to the Encyclopedia of Global Financial Markets. We also recommend *The Triumph of the Optimists* by Elroy Dimson, Paul Marsh and Mike Staunton, which provides a similar review for a larger number of countries.

HISTORICAL DATA ON RETURNS

Our review of total returns is provided in the Excel worksheet that accompanies this Guide. In this Guide we help investors to understand the information we have provided them. We also provide brief summaries of the data so readers can understand the historical context behind the returns. For each country, we have provided the following information.

First, in columns B-G, we provide indices, by decade, for stock prices for the broadest stock index that is available, a total return index for stocks that includes reinvested dividends, a bond return index that includes reinvested interest, a bill return index (bills and cash are treated as synonymous), an inflation index, and historical US Dollar exchange rate data. From this data, we derive all of the number calculated in each worksheet.

Second, in non-US countries, we use the US Dollar exchange rates to calculate the stock market price, stock market return, bond return and cash indices in US Dollars in columns I through L. This allows data from different countries to be compared directly with each other.

Third, in columns N through Q, we calculate the stock market price index, stock market return index, bond return index and cash index in real terms, adjusted for inflation. It is necessary to adjust for inflation because inflation rates vary widely between countries. Between 1960 and 1995, for example, Brazilian consumer prices increased by 18,200,000,000,000,000% while Swiss consumer prices rose by 272%.

Even after adjusting for the direct impact of inflation, there are other problems that should be considered. In countries where capital gains are taxed, inflation reduces the after-tax return relative to what would have occurred in a non-inflationary world.

High, unexpected inflation has a significant negative impact on stock market returns. Most countries suffered their worst stock market declines, as measured in real values, during a period of high inflation or hyperinflation as stocks and other

financial assets failed to keep up with the increases in prices. In most cases, the real value of stocks declined by over 75% during these inflationary bouts.

High inflation is usually accompanied by political and economic chaos, which reduce the earnings of corporations, and thus stock markets returns. Not only does inflation destroy the value of stocks and other financial assets, but dividends fail to keep up with the inflation, further reducing investors' total return.

Fourth, we calculate the dividend yields and equity premia for each country in columns S through V. The equity premium measures the excess return to stocks over bonds and bills. This allows investors to compare the relative returns between different financial assets for different periods of time. All premia are calculated geometrically so the impact of compounded returns over time is factored in.

All data are provided as annual rates of return, and unless indicated otherwise, we use real rather than nominal returns. For example, if you look in the worksheet for the United States, under the 1951-2001 time period, you will see that stocks provided an annual nominal rate of return of 11.97% (cell c64) on average in each of those fifty years.

After providing the raw data for the calculations, we break down the returns into three sets of summary statistics. First, we provide data by decade, showing what the annual rates of return were during each decade in the past. Row 54 in the United States worksheet shows the return investors received between December 31, 1989 and December 31, 1999.

Second, where applicable, we provide summary statistics by century. Century-long data are available for Australia, France, the United Kingdom and the United States.

Third, we look at returns from different points in the past until the present. This allows us to analyze the annual average returns over the past 100-, 75-, 50-, 25-, 10- and 1-year periods. Our goal is to provide investors with more extensive access to the data so they can understand how returns change over time.

During the 1990s, many people followed a buy and hold strategy because historical data showed a long-term excess return of stocks over bonds, and because of the high rate of return that stocks were then provided in the 1990s.

However, one pattern that repeats itself over and over in financial markets is that as soon as one trend develops, it is certain to reverse in the near future. Whatever was a successful investment strategy in one decade rarely proved successful in the next decade. This is why studying the past in detail, and not just looking at the recent past, is so important.

HISTORICAL DATA ON RISK

As valuable as the above data on returns are, investors also want to know what risk they face in receiving those returns. It may be comforting to know that on average stocks have provided US investors a 12% nominal annual return over the past 50 years, but anyone who invested in the stock market in 1972 or 1999 would have been very disappointed by the returns they received in the next two years. All of the data on risk are included in the Risk Data worksheet.

Risk is a difficult idea to convey since the concept embodies uncertainty. It is one thing to know that in theory the market could go up or down 50% in any two-year period. It is quite another to live through a 50% decline in the market.

To help investors understand the risks they face, we provide data on two investment horizons, 10 years and 30 years. We calculated the returns to investors for every 10- and 30-year period for which data were available to get a better understanding of what possibilities investors have faced in the past.

One way of measuring risk is to calculate the standard deviation. The higher the standard deviation is, the higher the variability, and consequently, the higher the risk. However, unless you have had a statistics course, and sometimes even then, it may be difficult to grasp in a practical way the meaning of a standard deviation of 5.27.

For this reason, we also provide information on the maximum losses and the maximum gains investors received in any 10- or 30-year period for the data that are available. This tells investors what would have been their worst-case scenario, or their best-case scenario from investing in the past.

For example, the data for the United States tells us that since 1925, someone who invested in the market for ten years could have expected, on average, an 8.1% (cell p124) average real annual return on stocks in any given ten-year period, with a standard deviation of 6.1% (cell p125). Their best ten-year period lasted from 1948 until 1958 (cell p127) when they would have earned a 17.8% (cell p126)

annual rate of return. The worst ten-year period was from 1961 to 1974 (cell p129) when investors would have lost an average 3.8% (cell p128) per annum. Similarly, for a 30-year investment horizon, US investors since 1925 should have expected an average annual real return of 7% (cell u124) with 10.5% (cell u126) being the best 30-year investment period return between 1931 and 1961 (cell u127) and 4.35% (cell u128) being the worst 30-year investment period return between 1964 and 1994 (cell u129).

Of course, past performance is no guarantee of future returns. Financial assets could provide higher or lower returns in the future, but this data at least provides investors with some idea of what possibilities they might face in the future. To analyze the risk that investors face, we provide four sets of data.

First, we show the average, best and worst returns for 10-year investment horizons in nominal terms. We provide data on returns to stocks (column B), returns to government bonds (column C), and returns to risk-free treasury bills (column D).

One important consideration for investors is the relative returns between stocks, bonds and bills. Most people put their money into a portfolio of stocks, bonds and bills, and the percentage that they put in each depends upon their desired trade-off between risk and return. To help investors make asset allocation decisions, we also provide data on the equity premium of stocks over bills (column E) and of stocks over government bonds (column F). We also provide data on the average geometric difference between the returns on stocks and bonds, the best difference in returns, and the worst difference in returns. If bonds provide a higher return than stocks, the number in this column will be negative. Next we look at what would have happened if investors had put their money into a portfolio with half their money in stocks and half their money in bonds (column G).

Second, we provide data on the average, best and worst returns for 30-year investment periods. Young investors can expect to work for at least 30 years before they pull their money out of their retirement accounts. This is why understanding the dynamics of a 30-year investment period is important. We provide data on returns to stocks (column I), bonds (column J), cash (column K), the premium of stocks over bills (column L), the premium of stocks over bonds (column M) and the returns on a portfolio of 50% stocks and 50% bonds (column N).

Third, we adjust these data for inflation. An investor is much better off getting a

10% return when inflation is 2% than getting a 15% return when inflation is 20%. In the second case, even though the nominal return is higher, inflation wipes out all of the investor's gains. The next set of data looks at returns after inflation. Data for 10-year investment periods is provided in columns P through S, and data for 30-year investment periods is provided in columns U through X.

Although we run the risk here of information overload, we wanted to err on the side of providing too much information rather than too little. Our hope is that investors will study these tables, gradually gaining familiarity with them and the differences between the numbers so they can more fully understand both the risks and returns that investors have faced in the past, and consequently, what they may face in the future.

THE UNITED STATES

Before analyzing other countries, let's look at the United States first, because this is the country which readers are most likely to invest in. The US stock market represents almost 50% of the total world capitalization, US investments often represent an important part of portfolios for non-US investors, and changes in the US stock market influence the behavior of non-US stock markets. Since we have more information on the United States than other countries, the US can act as a benchmark for the rest of the world.

Before looking at returns to United States investors in the 20th Century, we wanted to look at the behavior of financial markets in the 1800s because returns to investor were fundamentally different before and after 1914. We believe it is important to understand what these differences were, and why they occurred. These fundamental changes affected investors throughout the world, so the conclusions we draw from the United States apply to other countries as well.

Both the returns to investors and their reliance on dividends have changed over time. In the 19th Century, capital gains represented an almost insignificant portion of investor returns. On average, investors in 19th Century America received a 0.7% capital gain, but a 5.8% dividend per annum. Since stocks were riskier than bonds, and capital gains were relatively unimportant, stocks paid a higher dividend yield than corporate bonds, a fact that remained true until the 1950s.

Until the second half of the 20th Century, it was primarily speculators who invested in stocks. The average income investor put their money into bonds. Throughout the 19th Century, the excess return of stocks over bonds was only

0.3% per annum. Unlike in the 20th Century, there was virtually no difference in the total returns to stocks and bonds. The only decade from the 19th Century in which stocks rose significantly in price was the 1860s, primarily due to the inflation of the 1860s and speculation surrounding the civil war. Despite the greater risk, the equity premium was very small.

For bond investors, it was a century of declining interest rates. The 19th Century began with the Napoleonic wars drawing to a conclusion. As with most wars, the Napoleonic Wars had proven to be a disaster for financial investors. Inflation and interest rates were high, and currencies were volatile, reducing investor returns. London became the financial center of the world after the Napoleonic wars, and governments and corporations throughout the world issued stocks and bonds there. As governments issued new bonds, yields fell. US government bonds paid 6% at the beginning of the century but 4% by the end of the century. By 1907, the coupon on British consols had fallen to 2.5%.

Another fact that should be noted about the 19th century is that all government debt was long-term. Most governments issued perpetual bonds that had no maturity date. The US government only issued debt during wartime, and after the war, the government gradually paid down the debt. It wasn't until World War I, that the US debt grew, never to decline again, and it wasn't until the 1920s that the US began issuing short-term treasury bills and refunding them on a regular basis.

Since there was no FDIC, bank deposits were risky. There was no risk-free instrument available to investors. We use the yield on discounted paper as the proxy for short-term interest rates during the 1800s, but these yields often exceeded the yields on government bonds.

Finally, there was virtually no inflation over the course of the 19th Century. The average annual US inflation rate for the 19th Century was 0.06%. The only real inflation occurred during the Civil War, but after the war was over, the government successfully pursued a policy of deflation that allowed the United States to lower the price level and return to the Gold Standard in 1878.

These data do not include the losses investors in the Confederate States of America incurred. The CSA funded the war by issuing debt in the form of currency and bonds, but when the Confederacy lost the war, the currency and bonds issued by the CSA government and by the Southern states became worthless. In fact, one clause within the 14th Amendment to the United States Constitution

expressly absolves the Federal government of any liability for debts incurred by the rebellious states after they rejoined the union. Confederate investors were wiped out.

These facts allow us to make several general statements about investing in financial assets during the 1800s:

1. Most people invested in bonds, not stocks
2. Virtually all of an equity investor's returns came in the form of dividends, not capital gains
3. There was little difference in the returns to stocks and bonds
4. Since the government did not issue treasury bills and deposits were not federally insured, there was no "risk free" investment available to investors
5. Bond and dividend yields declined over the course of the century as the risk to investors and inflation declined.
6. Although prices rose and fell in any given year, from 1815 to 1914, there was no overall inflation in the US and in most countries on the Gold Standard.

What is interesting about these points, which would have been taken as given before 1914, is that during the 20th Century none of these assumptions proved to be true. By the end of the 20th Century, most investors were investing in stocks, not bonds, depended on capital gains, not dividends, received a large premium on stocks over bonds, had risk-free investment alternatives, saw interest rates rise during most of the 20th Century, and suffered from the worst inflation in human history.

This makes us wonder how reliable the assumptions that investor make today will be for the next 100 years. Will everything that we assume to be true about investing today prove to be false by the end of the 21st Century, and why was it that the rules for investors changed so radically over the course of the 20th Century?

What is interesting about studying returns to US investors in the 20th Century is that whatever was successful in one decade, rarely proved to be successful in the next decade. There are exceptions to this rule, but financial markets are constantly changing, and making long-term assumptions about financial markets can be a precarious affair.

Four decades stand out for the poor returns they provided US investors during the 20th Century, the 1910s, the 1930s, the 1940s and the 1970s. In real terms, stocks, bonds and bills all provided negative returns in the 1910s and in the 1970s. What will surprise most investors is that the 1940s were actually worse for global investors than the 1930s. This fact was primarily true for non-US investors, but even in the United States, the return to shareholders in the 1940s only slightly exceeded the returns of the 1930s.

Starting in 1940, fixed income investors lost money in real terms as they entered into a 40-year bear market of rising inflation and interest rates. The bear market in fixed income investments that occurred between 1940 and 1981 was a global phenomenon. Nowhere is this fact better illustrated than in the price of the British Consol, which fell in price from 83 in 1942 to 14 in 1974.

The 40-year bear market in fixed income investments is one of the primary reasons why equities have outperformed bonds and bills over the past 75 years. In the United States between 1939 and 1969, equities outperformed bonds by 9.8% per annum! Between 1969 and 2001, the equity-bond premium was only 2.7%. To a large degree, these differences were a result of Keynesian economic policies that favored lower interest rates and government deficits, but resulted in a long-term build up in inflation.

When Paul Volcker decided to fight inflation in 1979, the days of the high equity premium came to an abrupt end. This is why it is important to break apart the data from the past. Any extrapolation from the past to the future that fails to recognize how changes in government policies can affect future investor returns will be misleading.

Just as no one in the 19th Century who had seen an equity premium of 0.5% would have expected a 5.5% equity premium over the course of the 20th Century, few people in 1969 who had experienced an equity premium of 9.8% would have expected a premium of 2.7% over the course of the next 30 years. It is important to understand why financial assets provided the returns they did over different

periods of time to avoid the mistake of extrapolating from a past that will not repeat itself into an uncertain future. Changes in government policies affect the returns to financial assets, and important shifts in government policies can invalidate investors' experiences from the past.

Four decades provided superior returns to equity investors, the 1920s, 1950s, 1980s and the 1990s. The roaring 20s need no explanation. Low inflation and interest rates, technological innovation, and a booming stock market provided superior returns to investors until the market crashed in 1929.

Again, we can see how the assumptions of one decade proved to be a poor guide to the next decade. The 1910s were a period of inflation and negative returns to all financial instruments. Who in 1919 would have predicted that the greatest boom in stocks in decades was about to begin accompanied by price stability? Similarly, few people in 1929 would have predicted that the Great Depression was at hand. Many people expected the economy to return to a mild version of the Great Depression after World War II. Instead, one of the strongest bull markets of the century began.

But every rule has its exception. Whereas the 1920s and 1950s were followed by decades of inferior returns, the 1980s were followed by even higher returns to equities in the United States. Though fixed income investments provided lower returns in the 1990s than in the 1980s, they were still superior to the returns of the past 50 years. One explanation for the continuation of high returns to investors in the 1980s and 1990s was that there was no fundamental change in government policy during this period of time. In essence, it took 20 years to unwind 30 years of Keynesian economics.

Another important investment trend that should be recognized is that the average return to stocks and bonds has steadily increased over the course of the 20th Century. In real terms, stocks returned 6.4% between 1901 and 2001, 7.8% from 1951 to 2001 and 8.8% from 1976 to 2001. Bonds returned 1.5% between 1901 and 2001, 2.4% between 1951 and 2001, and 4.5% between 1976 and 2001. Whether investor returns can continue to rise in the 21st Century remains to be seen.

Using the data for 10-year real returns, we can see that since 1925, on average, someone who invested for any 10-year period got an average real return of 8% on stocks, 2% on bonds, 1.25% on bills, and 5% on an equally-weighted portfolio of

stocks and bonds. The best 10-year investment period for stocks was 1948-1958 and the worst was 1964-1974. It would have been highly unlikely that someone living in 1948, who had just lived through 20 years of inferior equity returns, would have expected that the best 10 years in stocks in the 20th Century was about to begin, nor would someone in 1964 have expected that the worst ten years lay ahead.

The best 10-year returns to fixed income investors and for portfolio holders were between 1981 and 1991. Not surprisingly, this followed the worst ten years of returns to bond holders and portfolio holders between 1971 and 1981. This is a pattern that we see repeated time and time again when studying returns in the United States and in other countries. Periods of excessively high returns are often followed by periods of excessively low returns and vice versa.

Over a 30-year investment period, investors could have expected an average return to equities of 7%, but of less than 1% to bonds or bills. The period 1931 to 1961 was the best 30-year investment period for US shareholders and 1964-1994 the worst. Fixed income investors are currently seeing their best 30 years of returns for any point in the 20th Century, but few fixed-income investors in 1971 would have expected this. Portfolio investors saw their best 30-year returns between 1969 and 1999. The period from 1951 to 1981 was the worst 30 years for portfolio investors in the whole of the 20th Century.

The basic facts of life for investors should be remembered here. Different factors drive the supply and demand for stocks, bonds and commodities. Stocks are primarily driven by earnings expectations, which depend upon the business cycle. Bonds depend primarily upon nominal interest rates, which are driven by inflation and by default risk. Periods of long-term declines in interest rates, between 1865 and 1900, provided high returns to bond investors, while periods of rising interest rates, between 1940 and 1980, provided negative returns to bond investors.

Because it can take years to bring new sources of oil, gold or other commodities into production, changes in the supply of commodities are slower than changes in demand. Commodity prices do not trend upward or downward in the same way that stocks and bonds do. Raw material prices remain stable for years, and then jump suddenly. Rising commodity prices are negative for stocks because they reduce corporate earnings, and for bonds because they are inflationary. The stock market performs best when commodity prices are stable, not when they are rising or falling.

During the 1990s, buy and hold was the strategy that many investors followed because of data on the equity premium and because of the superior rates of return that stocks provided in the 1990s. This review shows how misleading this strategy can be. Even in the United States, which had some of the most stable financial markets in the 20th Century, what worked for investors in one decade rarely worked in the next decade. Investor vigilance rather than Rip Van Winkle confidence is required of any long-term investor. As we will see, this fact is even truer outside of the United States than inside the USA.

When comparing returns to US investors with returns in other countries, we find that US investors did better than investors in almost any other country. There are several reasons for this. First, US investors avoided the economic and political problems caused by World War I and World War II. US investors have also benefited from a strong economy, relatively steady government policies, and a government that has generally been favorable to capitalism throughout the course of the 20th Century.

Investors in Germany, Japan, France and Italy all suffered terrible returns as a result of the World Wars and the economic and political problems that followed. It is primarily the period between 1914 and 1949 when the two World Wars devastated investor returns. Since 1950, returns to investors in Europe have been comparable to returns to US investors in Europe and in Japan.

AUSTRALIA

Australia has provided some of the most consistently good returns of any major country in the world. In nominal Australian Pounds/Dollars, Australian equity investors did not have a single decade with negative returns in the past century. The 1970s provided negative returns after adjusting for inflation, and the 1930s provided negative returns as measured in US Dollars.

Australia has been, in many ways, an emerging market. Its location kept it from the economic and political chaos resulting from World War I and World War II. Australia enjoyed political and economic stability during the 20th Century, and this stability was reflected in the stock market. Because Australian stocks are more heavily dependent on resources than US and European markets, Australian equities have been less volatile. Australian stocks declined less than US stocks in the 1930s and 1970s, but also gained less in the 1980s and 1990s. Australia was the only major market to hit a new high in 2002.

Unlike in the United States, the real return to Australian equity investors has not risen over time, but has remained around 8%. The only decade in which equities provided a negative real return was the 1970s. Nevertheless, US investors would have gained higher returns by investing in the United States than in Australia because the Australian Pound/Dollar consistently depreciated against the US Dollar throughout the 20th Century.

Australian fixed-income investors suffered from the same bear market that investors in other countries endured between 1939 and 1979. Australian fixed-income investors were no better off in 1989 than they had been in 1939. Investors in bills only just managed to keep up with inflation over the past 70 years.

There are some interesting results when the relative returns of equities, bonds and bills are analyzed. The premium on equities relative to bonds was high between 1900 and 1929, and between 1949 and 1969, but was low in other periods. The equity-bond premium over the past 25 years has only been 2.7% and only 1.3% in the 1990s. This is significantly less than the 9.4% equity-bond premium that US investors received in the 1990s. The 1990s provided strong returns to bond investors as they outperformed bills by a wide margin, reversing the trend of the 1970s and 1980s.

The periods with the highest equity-bond premium were 1976-1986 and 1956-1986, when high inflation reduced real returns. The period from 1940 to 1970 provided fixed income investors with their worst returns as the government kept interest rates artificially low in the 1940s and inflation built up in the 1960s. As in most countries, the past 30 years have provided the highest returns to fixed-income investors of any time in the past 100 years.

Equity investors in 1986 had enjoyed the best equity-bond premium in Australian history, but they were about to enter the worst 10 years for equities vs. bonds. As in the United States, the build up in inflation and the desire to fight it was one of the primary factors driving returns to investors over the last half of the 20th Century.

The stability and growth of the Australian economy provided Australian investors with relatively steady returns throughout the 20th Century. However, since resources make up an increasingly smaller proportion of the stock market in Australia, in the 21st Century, Australian returns are more likely to follow returns in the rest of the world than during the 21st Century.

CANADA

Historical equity total return data for Canada only goes back to 1934, providing us with the most limited history of the countries we cover. The Canadian economy is tied to the US economy, but depends more upon natural resources than the United States does. These two factors have determined the returns to Canadian investors over the past 70 years. In general, Canadian financial assets have followed returns in the US, but have generally provided lower returns, though with less volatility.

Canadian stocks declined dramatically during the 1929-1932 bear market, but unlike the United States, provided positive real returns to investors in the 1970s because Canadian resource stocks did well. Over the past 50 years, Canadian stocks have provided a 9% annual return, as measured in US Dollars, versus a 12% return to US stocks over the same period. The largest divergence in returns occurred during the 1990s when Canadian stocks returned only 6.9% per annum versus 12.9% in the United States. The Canadian Dollar has generally depreciated against the US Dollar over time, reducing returns, though not as dramatically as in other countries.

As in other countries, fixed-income investors barely kept up with inflation between 1939 and 1979, but they have received strong real returns since 1980. Bonds outperformed equities in both the 1980s and the 1990s in Canada. The equity-bond premium has been only 1% over the past 25 years and 2.3% over the past 50 years. The worst 10-year period for bond investors (1971-1981) was followed by the best 10-year period (1981-1991). As in most countries, bonds displayed a large premium over bills in the 1990s.

Again, this shows the importance of studying the data for each country and avoiding generalizations. The US provided investors a 9.4% equity premium over bonds in the 1990s, but in Canada, bonds outperformed equities by 0.3% in the 1990s. Because resource stocks play a more important role in equity markets in both Australia and Canada, equity returns were lower in the 1990s. Nevertheless, how many US investors would have guessed that the Canadian equity premium was negative in the 1980s and 1990s?

Since the equity premium in Canada is smaller than in the United States, the benefits to Canadian investors of diversifying into either Canadian bonds or into US equities is relatively high. A portfolio of stocks and bonds would have served Canadian investors well during the past 20 years.

Equity investors have received an average 6% per annum return for 10- and 30-year investment periods in Canada. 1964 was clearly the worst year to invest in equities in Canada, since this was the start of the worst 10- and 30-year investment periods in Canadian equity history. As in most countries, the past 10- and 30-year periods have been the best investment periods for fixed-income investors.

Canada has not shown the topsy-turvy returns in equities that many other countries have, primarily because of the stronger role of resource stocks in the Canadian market. During the 20th Century, Canada had a lower return to equities, a lower equity-bond premium, but less volatile markets than in the United States. If resource stocks play a less important role in Canada's future, its stock market returns should more closely replicate those of the United States.

EAFE

Morgan Stanley Capital International (MSCI) has kept an index of stocks outside of the United States since 1970. The EAFE (Europe, Australasia and the Far East) index includes all the major developed markets except for the United States. The EAFE+EMF index has been calculated since 1987 and also includes emerging markets. These indices provide investors with a good idea of how the United States has performed relative to the rest of the world.

The EAFE index is calculated in US Dollars, so fixed-income comparisons are made with US bonds and bills. The EAFE index is interesting because it provides a contrast between the United States and the rest of the world, raising the question, in which periods were you better off investing inside or outside of the United States?

Historically, the capitalization of the EAFE index has been approximately equal to that of the US stock market, except in periods such as the late 1940s when European and Japanese stocks crashed and in the late 1980s when the Japanese stock market experienced a bubble and the Japanese stock market's capitalization briefly exceeded that of the United States.

During the 1930s, unlike in the United States, the EAFE index increased in value, primarily due to the superior performance of stocks in Germany, Japan, Canada and Australia. In the 1940s, the opposite was true, non-US stocks vastly underperformed US stocks as World War II and the economic and political dislocation that followed took its toll. There was a 13% annual difference in returns

between the US and the rest of the world in the 1940s!

In fact, the returns in the US and in the EAFE index were about the same in the 1950s and in the 1960s. Both Europe and Japan outperformed the US in the 1970s, and the Japanese bubble of the 1980s lifted the performance of the EAFE index above that of US stocks throughout the 1980s. On the other hand, the United States was by far the superior performer in the 1990s. Not only did US stocks outperform European stocks in the 1990s, but Japanese stocks collapsed, pulling the EAFE average return down with it. The simple lesson here is that for international investors, past performance is almost no guide to future performance. What was true for stock markets in different regions of the world in one decade was inevitably untrue in the next decade.

Similarly, emerging markets follow their own pattern, separate from that of the developed world. Emerging markets failed to participate in the bull market that the developed world enjoyed in the 1950s and 1960s. Emerging markets enjoyed a secular bull market from 1966 until 1993. The 1973-1974 bear market, the 1982 Mexican default, the 1987 crash and the 1990 Gulf War were only minor setbacks. Emerging markets peaked in 1993, and failed to participate in the bull market of the late 1990s, in part because of the crippling effect of the 1997 Asian crisis and the 1998 default by Russia. Because of a lack of information on Emerging Markets, total return data for Emerging Markets only goes back 15 years.

Although bear markets, such as 1973-74, 1981-1982 and 1990, affected markets around the world, the primary difference that bears studying is how these markets behaved when a new bull market began. Although global markets are positively correlated with one another, the magnitude of declines and advances varies from one market to the other. Markets that have smaller declines in global bear markets become the leaders in the next bull market. Markets that are crushed in a global bear perform poorly in the bull market that follows. Relative performance is more important in a bear market than in a bull market, because a market that is doing strongly in a bull phase may simply be part of a bubble that could blow up in investors' faces.

The table below compares the performance of the EAFE Index, Europe index and the S&P 500 during the past decades.

Annual Total Real Stock Market Returns

Decade	US	Europe	EAFE
1920s	16.0%	11.0%	7.8%
1930s	1.4%	3.9%	4.6%
1940s	3.2%	-10.5%	-9.6%
1950s	16.7%	18.5%	18.2%
1960s	5.1%	2.1%	2.5%
1970s	-1.4%	1.1%	2.5%
1980s	11.8%	12.7%	16.8%
1990s	14.8%	11.2%	4.3%

The returns were more strongly correlated between the three indices in the 1950s to 1980s than in any other period. The divergence of the 1990s was primarily due to Japan. It is also interesting that there wasn't a single decade in the 1900s in which the US outperformed the rest of the world for two decades in a row or vice versa. This pattern would predict a superior return to the EAFE index than to the US in the current decade. It will be interesting to see the results.

The EAFE index has provided a lower return and greater risk than US equities, meaning that non-US investors have benefited from including US stocks in their portfolio, but the benefit to US investors of expanding their portfolio to include foreign stocks has been small. On the other hand, since 1950, Americans investing in Europe would have been able to reduce their risk without lowering returns. It is mainly the Japanese and Emerging Markets that would have added to US investor risks without a comparable increase in returns.

EUROPE

We also provide an index for Europe that includes all of Europe, not just the EEC or Euro countries. The relative performance of European vs. US stocks looks like a tennis match with the prize for best performance passing back and forth from one decade to the next. US stocks outperformed European stocks in the 1920s,

1940s, 1960s, and 1990s. European stocks outperformed US stocks in the 1930s, 1950s, 1970s and 1980s. With the exception of the 1940s, the difference in the relative performances of stocks in the US and in Europe has been no more than 3% per annum.

The 1940s provided the worst ten years for European equity investors and the 1950s the best ten years. The 1970-2000 period has provided Europeans with the best returns to stocks, bonds and bills while the 1944-1974 period provided the worst 30 years for European equity investors.

One thing that a comparison of Europe and the US brings up is the importance of exchange rates. The superior performance of European stocks in the 1970s and 1980s was largely due to the weakness of the US Dollar between 1973 and 1989. When the US Dollar showed strength relative to European currencies between 1982 and 1986, US stocks beat European stocks every single year, but when the US Dollar declined in value between 1986 and 1990, European stocks outperformed US stocks by a wide margin. Because of the similarity in long-run returns between the US and Europe, anyone investing across the Atlantic, in either direction, in the short run, is betting more on exchange rates than on equity returns.

Now that 12 European countries share a single currency, and many other countries have their currency tied to the Euro, the impact of foreign exchange movements on returns to investors in the United States and Europe becomes clearer. In the short-run, volatility in the exchange rate between the Dollar and the Euro is greater than the differences in the relative returns in the US and Europe, but over longer periods of time, since the US and Europe have similar inflation records, the impact of exchange rates is small.

Overall, if you look at returns to stocks in Europe and the United States over the past 50 years (11.97% for the US vs. 11.96% for Europe) or 25 years (13.78% for the US vs. 14.18% for Europe), there is virtually no difference in the returns. However, a US-Europe stock portfolio would reduce the risk of the portfolio. Both European and US investors would have benefited from investing in each other's stock markets during the past 50 years. On the other hand, US investors would not have benefited from adding Japan, and Emerging Markets to its portfolio because these countries would have added to the risk without increasing returns.

FRANCE

Although France never suffered the devastation from World War I and World War II that Germany did, these two events clearly impacted returns to French investors. Data are available for France over the course of the 20th Century, which allows us to compare the impact of World War I and World War II in France.

There is a large contrast between the performance of French equities in the first half and the second half of the 20th Century. On a real return basis, French shareholders were no better off in 1949 than they had been in 1899. During those 50 years, French shareholders kept up with inflation, but only broke even in real terms. During the past 50 years, however, French shareholders have received positive real returns of 7.35% per annum, a sharp contrast to the first half of the 20th Century returns were concentrated in the 1950s, 1980s and 1990s. In real terms, French stocks showed a net decline between 1959 and 1982.

Given these facts, a buy and hold strategy for equities in France would not have been a good idea. French investors received no net real return on equities in seven of the 20th Century's ten decades. Between 1942 and 1952, French shareholders would have lost on average 12.5% per year, but would have gained 19.6% per year in real terms between 1950 and 1960! The past thirty years have provided French investors with the highest returns to stocks, bond and bills, showing how truly awful the previous 70 years had been for French investors.

Because of the inflation that France endured during and after the two World Wars, as well as during the 1970s, fixed-income investors did very poorly. Between 1914 and 1949, French fixed-income investors were decimated by high inflation. Fixed-income investors, whether they had their money in bonds or bills, lost over 97% over their capital on an after-inflation basis, even after interest was reinvested! By comparison, the losses of US investors during the 40-year bear market between 1939 and 1979 were small.

It bears repeating that the primary enemy of fixed-income investors is inflation. Between 1914 and 1949, fixed-income investors lost almost everything they had; between 1949 and 1979, fixed-income investors broke even in real terms. Only since 1980 have French fixed-income investors in France beaten inflation. French fixed-income investors should have cheered replacing the Franc with the Euro. The Banque de France proved to be the enemy of French fixed-income investors for most of the 20th Century.

Despite the horrible performance of stocks, bonds and bills in France during the

past century, the equity premium remained positive. On average, equities outperformed bonds by around 4% per year, and bills by 6-7% per year, but these averages hide huge differences from one period to the next. Bonds and bills outperformed stocks by about 4% per annum in the 1930s, by about 24% per annum in the 1940s and by 19% per annum in the 1950s! This was a huge difference by any stretch of the imagination.

During the 1960s and 1970s, there was very little difference in the returns to stocks, bonds and bills, but during the 1980s and 1990s, equities outperformed bonds by about 5% per annum and bonds outperformed bills by about 3% per annum. France's equity markets swung wildly during the 20th Century, and any given decade was no indication of what would happen in the next decade.

The important lesson to learn from France (as well as Germany and Italy) is that financial assets can be horrible investments in periods of economic and political chaos. Buy and hold in France would have meant buy and lose during most of the 20th Century. Between 1935 and 1965, fixed income investors would have lost around 10% per annum after inflation. Even shareholders faced 30-year stretches with net losses after inflation, even after including dividends! The returns and experience of French and US investors is so dramatically different that one would think the returns came from stock markets on different planets, not in different countries.

The French inflation affected the Franc as well. The Franc was weak throughout the interwar period, leading to the introduction of a New Franc in 1959 at the rate of 100 Old Francs to 1 New Franc. The French, who were the first Europeans to produce a paper inflation during the French Revolution were unable to avoid inflation in the 20th Century.

The performance of the French stock market is also interesting because both France and Germany had similar increases in their Gross Domestic Product after World War II, but French shares significantly underperformed German shares. One possible reason for this is that for most of the 20th Century, the French government failed to provide active support to the corporate sector outside of the core of large, state-related firms. Clearly, throughout the 20th Century, the best place for French investors to have invested their money would have been outside of France.

GERMANY

World War I, the hyperinflation of the 1920s, World War II, and the currency reform that followed wiped German investors. We have no total return data for Germany before 1925, but it would have been pointless to calculate them. No matter how you look at it, German investors were wiped out twice in the 20th Century, once in the 1920s and a second time in the 1940s. Equity investors faced losses of over 98% during the hyperinflation of the 1920s, and fixed-income investors lost everything. The only comparable examples for the United States were the losses colonialists faced during the Revolutionary War when inflation wiped out 99% of the value of financial assets, and during the Civil war when Confederate issues became worthless.

After the Reichsbank stabilized the currency in 1923, German equities bounced back strongly. Inflation remained under control during the 1920s, giving positive returns to investors, but after 1929, German investors suffered for the next 20 years. In 1931-32, the Berlin stock exchange was closed for several months because of the Great Depression, and stocks fell back to the levels they had reached during the hyperinflation of 1923.

After the Nazis came to power, the Reichsmark became inconvertible, and it steadily depreciated on the black market. German stocks remained strong as the Nazis marched into other European countries, but even before the tide started to turn against Germany in 1942, the German government placed price controls on stocks that prevented them from selling at lower prices. For most of the 1940s, both equities and the Reichsmark were illiquid.

In 1948, a currency reform introduced the Deutsche Mark, but reduced the value of all financial assets by 90%. A complete loss of equity happened in a number of European countries after World War II. Investors in Poland, Hungary and Romania lost all of their capital. After the introduction of the currency reform in 1948, the German government allowed equities to trade at market prices, and a bull market began almost immediately. Within two years, equity investors had completely made up their losses.

After 1950, German shareholders received returns similar to US investors, earning around 7% per annum in real terms. This includes a 25% annual real return during the 1950s, as Germany recovered from World War II. Real equity returns were slightly positive in the 1960s, negative in the 1970s, and it was only in the 1980s and 1990s that equities once again gave German investors double-digit returns.

Bonds provided modest, but consistent returns to investors after World War II, and the German aversion to inflation meant that Germany avoided the long-term bear market that investors in other countries suffered because Germany did a better job of keeping inflation under control. Although the equity-bond premium was an incredible 22% in the 1950s, it was non-existent in the 1960s, and a negative 5.4% in the 1970s. Since 1951, the average equity risk premium has been only 3.1% over bonds and 5.3% over bills in Germany, figures that are lower than in the United States.

1948 was the obvious turning point for all financial assets in Germany. 1938-1948 marks the worst 10-year investment period for German equities, while 1948 marks the beginning of the best 10-year and 30-year investment periods for equities. Bonds consistently beat inflation in Germany by about 3% between 1950 and 1980, and by 5% between 1980 and 2000. Bills have beaten inflation by an average of about 3% during the past 20 years.

Although Germans were proud of the stable Deutsche Mark, during most of the 20th Century, German currencies were decimated. The Mark was replaced by the Rentenmark at the rate of 1,000,000,000,000 Mark = 1 Rentenmark. The Reichsmark was inconvertible and lost 90% of its value on black markets before being replaced by the Deutsche Mark in 1948. The Ostmark was inconvertible from the beginning.

The financial problems that beset Germany before 1950 still shape the German economy today. Germans are risk-averse, prefer a stable economy with low inflation, and have never developed an equity culture in the same way that the Anglo-Saxon countries have. Since 1950, returns to investors in Germany have been relatively stable. German fears of inflation protected fixed-income investors from the losses that plagued investors living in countries that suffered from inflation. Since 1950, German equities have returned around 7% in real terms, bonds around 5% and bills around 3% per annum.

With the introduction of the Euro, German monetary policies now prevail throughout most of continental Europe, and anyone who wants to peer into Europe's financial future, especially for fixed-income investors would do well to study the behavior of Germany's financial markets during the past 50 years.

ITALY

Although Italy never suffered the losses of 90% and more that German investors did in the 1920s and the 1940s, Italy has provided investors with the most

consistently poor returns of any major country. Between 1925 and 2001, Italian equity investors received only 2.3% per annum after inflation. This is quite a contrast to the 7.3% that US investors received, and only slightly greater than the 2.1% that US investors in government bonds received. Italian investors have taken on risks with few returns to show in compensation.

Stocks have been a topsy-turvy investment in Italy. Both the 1940s and 1970s saw double-digit average annual losses, followed by double-digit average annual gains in the 1950s and 1980s. From 1967 to 1977, equities lost on average 14.6% per annum due to rising inflation. In most countries after World War II, equities acted as a hedge against inflation, but in Italy, the persistence of inflation lowered returns, hurting investors in the long run.

Italy has the lowest equity premiums of any country we cover. Since 1951, the equity-bond premium has been only 1.4% (versus 5.25% in the US) and since 1976, it has been only 0.7% (versus 4.15% in the US). Italy's stock market cycle is marked by brief bull markets, which are followed by long, steady declines. When Italy had a bull market, the increases in stock values were quick and dramatic, but once the bubble pops, steady declines in real terms followed for a decade or longer. Any reliance on historical averages hides wide swings in returns to Italian investors. The 20% annual real return to investors in the 1950s was followed by no real return in the 1960s and an annual real loss of over 14% in the 1970s. This was followed by a 15.7% real gain in the 1980s. Buy and hold would not have been good investment advice in Italy.

In real terms, Italian fixed-income investors on average lost money every single year between 1925 and 2001. Most of this resulted from the inflation of the 1940s when fixed-income investors lost, on average, 30% per annum after inflation. Italian fixed-income investors have never recovered from these devastating losses.

Although in real terms, bondholders have gotten a four-fold return since 1950 and cash has given a three-fold return, this has hardly dented the 90+% losses that fixed-income investors suffered in the 1930s. Although equities can make up large losses over time, bonds and bills rarely do, as Italy illustrates.

Italian bondholders earned around 2% per annum in the 1950s and 1960s, lost 6% per annum in the 1970s, but made positive returns in the 1980s as interest rates fell. The real boon to Italian bondholders was Italy's decision to join this

Euro. This pushed long-term interest rates down to German levels, providing bondholders with large capital gains. As a result, bonds outperformed equities in the 1990s, and beat bills by 6% per annum. However, this was a one-off benefit to bondholders that will not be repeated. From now on, the monetary policy of the European Central Bank will determine the returns that Italian fixed income investors will receive.

Contrasting the best and worst 30-year investment periods for Italy shows how things have changed for Italian investors. The best 30-year period for fixed-income investors ended in 2000, primarily because this was the period when the Italian government made the greatest effort to control inflation. But the 3% annual real gain on bills and 4% annual real gain on bonds have to be contrasted with the losses over 11% per annum between 1934 and 1964. During the worst 30 years for equities, between 1961 and 1991, investors lost only 2.4% per annum, but in the best 30 years from 1931 to 1961, they gained 5.9% per annum.

The equity premium has been extremely volatile in Italy. In the 1940s, the equity-bond premium was 24.5% and in the 1950s it was 17.3%. But both bonds and bills beat equities in the 1960s and 1970s. Two decades of a very strong equity premium was followed by two decades of a negative equity premium.

The depreciation of the Lira was general throughout the 20th Century. In 1900, the Italian Lira was at par with the Swiss Franc, but by the time the Italian Lira was replaced by the Euro in 1999, you could get 1200 Lira for one Swiss Franc. The worst depreciation came in the 1940s when the Lira depreciated by 33.4% per annum. This was followed by the only period of stability for the Italian Lira, the Bretton Woods period of 1949-1973. After 1973, the Lira gradually depreciated until it was replaced by the Euro in 1999.

It should be noted that throughout the 20th Century, most countries along the Mediterranean gave poor returns to investors. In the Mediterranean countries, the state was an important regulator of the private sector. The corporatist approach favored large firms and conglomerates. Non-governmental firms were often private, and run by families. Few small firms rely upon equity markets as a source of capital. Mediterranean countries were also more likely to lean toward socialist governments and policies, and southern Europe suffered stronger bouts of inflation than northern European countries, with the exception of the hyperinflation of the 1920s. None of these policies benefited investors.

Given the poor performance of financial assets in Italy, it is no wonder that Italians have pursued la dolce vita and the informal economy, have never developed an equity culture as in the United States, or invested in bonds the way Germans have. Investors in Italy can only hope that by joining the Euro, they will begin receive returns comparable to the rest of the world.

JAPAN

Japanese investors saw it all in the 20th Century—huge gains and huge losses. Despite the global integration of the world's economies, the Japanese market followed its own path during the 20th Century. Whether this was because of cultural barriers, difficulties foreign investors faced in Japan, the size of their own economy, or other factors is uncertain.

Japanese equities have shown large gains and losses over time. Japanese stocks rose modestly in the 1920s, and suffered less in the 1930s than stocks did in other countries. Until World War II, Japanese stocks showed little movement, mainly rewarding investors through dividends. World War II devastated the country, and the inflation that followed World War II decimated stock values. Adjusted for inflation, Japanese equities lost over 95% of their value after World War II while bonds and bills lost 99% of their value. On average during the 1940s, equities lost 26% per annum, bonds 35% and bills 33%.

When the Tokyo Stock Exchange reopened in 1949, few would have foreseen that the next 40 years would produce one of the greatest stock market booms in history. Measured in US Dollars, \$1 invested in the Tokyo Stock Exchange in 1949 would have grown to over \$50,000 by 1989 as Japanese equities rose in value and the Yen appreciated. Even after adjusting for inflation, Japanese investors would have gotten a 200-fold return on their investment between 1949 and 1989. No other market can even come close to matching those returns during that period of time, or during any other 40-year period in stock market history.

The Japanese stock market bubble burst in 1989. While European and American stocks went through a dramatic bull market in the 1990s, Japan steadily declined. Even after adjusting for dividends and deflation, Japanese investors lost 2/3 of their investment between 1989 and 2002, and the Nikkei 225 Average was back to where it had been in 1986. These changes can be illustrated by comparing the Nikkei 225 with the Dow 30 Industrials. In 1957, the Nikkei and DJIA were at the same level. By 1989, the Nikkei was at 39,000 and the DJIA close to 3000. In September 2001, they were both equally valued at around 9000. Buy and hold is a

miracle on the way up, but murder on the way down.

While stocks collapsed in the 1990s, deflation drove interest rates down to unprecedented levels, with the yield on 10-year bonds dropping below 1%. The decline in interest rates allowed bondholders to receive capital gains, offsetting the decline in yields. The yield on cash was essentially zero, meaning that all returns came through deflation. If inflation ever increases and bond yields start to rise, bond investors will face large losses as the price of their bonds declines.

The combination of declining stocks and declining interest rates has meant that bonds beat stocks by 10% per annum during the 1990s, just the opposite of the US where stocks outperformed bonds by 9.4% in the 1990s. This is a sharp contrast with equity-bond premia of 14.6% in the 1940s, 27% in the 1950s and 13% in the 1980s. In Japan, one should never take investments for granted.

Japan had 10-year periods in which equities (1937-1947), bonds (1943-1953) and bills (1938-1948) each lost on average over 30% per annum, though most of the losses were due to the inflation that followed World War II. On the other hand, from 1947 to 1957, equities returned 31.9% per annum, quite a contrast to the 30.2% annual loss that had occurred in the previous ten years. Certainly no one in 1937 or 1947 would have predicted such dramatic gains and losses in stocks in the next 10 years. 1948 to 1978 was the best 30 years for equity investors, for bill investors and for a portfolio of stocks and bonds.

The credit bubble of the 1980s and the decline of the 1990s should not have surprised anyone familiar with long-term Japanese stock market history. Bull-market tops in 1916, 1934, 1962, 1973 and 1990 were all followed by sharp or steady declines. Japan is prone to bubbles and blow-off tops, and there is no reason why this behavior should not continue in the future. Given the homogeneous nature of Japanese society, it could be argued that strong bulls and long-term bears occur because the Japanese act in groups rather than as competitively as in the United States. Once the current decline in equities ends, it seems likely that Japanese investors could be in for another wild bull market.

UNITED KINGDOM

The United Kingdom is the country for which the longest stock market data exists. On the one hand, this gives us the opportunity to peer back to the beginning of stock market time to see how stocks and bonds have performed over the course of three centuries.

On the other hand, the 1700s and 1800s are not a very good guide to what happened in the 1900s or what could happen in the 2000s. This is because financial markets have gone through fundamental changes that make it unlikely that the future will repeat the experience of the 18th and 19th Centuries.

During the 1800s, there was virtually no inflation, equities played a relatively minor role in investment portfolios, such as they were, equities provided virtually no capital gains, making investors almost solely dependent upon dividends for their returns, and since equities were riskier than bonds, the dividend yield exceeded bond yields until the 1950s. Much of what was said about the United States in the 1800s applies to the United Kingdom during the 1700s and 1800s.

Nevertheless, it is interesting to see how the 1700s and 1800s differed from the 1900s. Stock prices rose more in the 1900s than they did in the 1700s and 1800s in London, though most of the increase in the 1900s was due to inflation. After inflation, the average stock price fell by 0.2% per annum in the 1700s, rose by 0.9% in the 1800s and rose by 0.6% in the 1900s. Contrast this with the return on bonds and bills. Bonds, as embodied by the British Consol, returned around 4.4% during both the 1700s and 1800s, or about 0.5% less than British stocks. During the past three centuries, British investors have received a capital gain of less than 1% per annum, and a dividend of 4% or more giving a real total return of 5% per annum. The consistency of this data makes it an important benchmark for other countries.

Historically, equities did not return that much more than bonds, usually about 1% until the 20th Century, making the 1900s the unusual period for investor returns. During the 1900s, equities beat both bills and bonds by around 4% per annum. The aberration in the data comes in the 1900s when inflationary monetary policies, economic and political dislocation, and unprecedented economic changes caused the equity-bond premium to exceed historical norms. With dividends declining in the past two decades, and real bond yields rising, one wonders whether the equity premium in the 21st Century will be less than the equity premium in the 20th Century.

Breaking down investor returns from the 20th Century by decade produces some interesting results. As in all countries, the period from 1900 to 1950 was quite different from the period from 1950 to 2000. Before 1950, equity investors only had one decade, the 1920s, in which they received double-digit returns. In the last half of the century, investors had three decades in which they had double-digit real annual returns (the 1950s, 1980s and 1990s).

Fixed-income investors faced the opposite results. The post-World War II inflation drove the price of the British consol down by 80%. Even after reinvesting interest payments, British consol investors were no better off in 1979 than they had been in 1889! In essence, consol holders endured a 90-year bear market! British consol owners endured two periods (the 1910s and the 1960s-1970s), when they lost over half of their money.

Since 1976, British fixed-income investors have done well. In both the 1980s and in the 1990s, bond and bill investors beat inflation, returning over 4% to cash and over 6.5% to government bonds. Nevertheless, this is little consolation to fixed-income investors who had lost money for decades in bonds. Despite the higher returns that bondholders received, equities beat bonds in the UK in every decade after 1940.

As in many other countries, the best investment periods often led to the worst investment periods and vice versa. 1964-1974 was the worst post-World War II 10-year investment period for equities in Britain, and 1974-1984 provided the best 10-year returns. The period from 1910-1920 provided the worst 10-year investment period for stocks, bonds, and bills in the UK. The unexpected inflation of World War I produced returns that were even worse than the 1970s. Similarly, 1920 and 1974 ended two of the 30-worst years for British investors.

As we have asked before, what is the likelihood that someone in 1964 or 1910 would have expected that the worst 10 years in equity investment history was about to begin, or that someone in 1890 or 1944 was about to suffer 30-years when they would face net losses no matter where they invested their money, using a buy and hold strategy? It is equally unlikely that whenever the worst 10 or 30 years comes in this century, that investors will know what they are getting themselves into.

The Pound depreciated over the course of the 20th Century. During the 19th Century, the Pound was the centerpiece of the Global economy, but the United Kingdom was never able to recover from the costs of the two World Wars. The Pound depreciated from \$4.80 to the Pound Sterling in 1900 to \$1.50 to the Pound Sterling in 2000, and almost touched parity with the US Dollar in 1985. Currently, the main question for the UK is whether it will join the Euro in the near future.

UK stocks generally underperformed US stocks by 2% per annum in the 20th

Century. London remained the primary center for finance in Europe, and its stock market remains the largest stock market in Europe. The returns of the 21st Century may well depend on its evolving role with the Euro.

WORLD

The MSCI World Index has been calculated since 1970 and includes 20 developed stock markets. MSCI has supplemented this index with its All-Country World Index, which includes emerging markets as well developed countries. Our data is based upon the MSCI World Index for developed countries since long-term return data on emerging markets is less readily available. Bond, bill and inflation data are based upon data from the United States since the World Index is calculated in US Dollars.

The World Index allows us to see the twists and turns in the global stock market. Since the US stock market has made up around 50% of the world's stock market capitalization, it has a substantial impact on the World Index. The EAFE index can be used to contrast the performance of the rest of the world to the US stock market, but here we focus on the world index.

Before analyzing the numbers for the World Index during the past century, we provide a brief summary of each of the decades of the 20th Century, discussing the events that affected the world's stock markets:

1900-1910

Stock markets showed no general trend. Financial crises occurred in 1903 and in 1907.

1910-1920

World War I produced inflation and political-economic problems, and as a result, some of the century's worst losses for both equity and fixed-income investors.

1920-1930

Economic problems at the beginning of the decade (hyperinflation in Germany) gave way to a roaring bull market in the last half of the decade.

1930-1940

The worst bear market of the century was followed by an uncertain recovery, shrinking world trade and the onset of World War II.

1940-1950

World War II, the post-war inflation, and the onset of the Cold War produce large losses in Europe and Japan, and no real gains in the United States

1950-1960

A decade of solid economic growth and stock market returned as the capitalist countries recover from World War II

1960-1970

New technology replaced “recovery growth”. Stocks continue to rise, though at a more moderate pace, as inflation increased.

1970-1980

Stagflation, the OPEC oil crisis, and other problems generate the worst returns to stocks of the last half of the 20th Century.

1980-1990

The fight against inflation and high interest rates, greater emphasis on free markets and free trade, and the Japan bubble provided large stock increases.

1990-2000

Innovations in biotechnology, computers and telecommunications, accompanied by low inflation and increasing world trade produced a stock bubble that popped when the new century began. Japan declined throughout the decade.

Since 1925, after inflation, stocks returned an average 6% per annum. This return can be contrasted against 7.3% for the S&P 500, 5% for the EAFE index, and 5.2% for European stocks. Since 1951, which excludes the negative impact of World War II, the World index returned 7% per annum, the S&P 500 7.8%, Europe 7.8%, and the EAFE Index 7.3% (The MSCI World Index returned less than its components because MSCI included South Africa and Mexico during the 1980s, which were not included in the EAFE index, and these two countries pulled down the return to the World Index). Since 1950, there has been virtually no difference in the returns to European and US stocks.

There were two decades with double-digit returns (1950s and 1980s) to equities. The 1990s would have produced double-digit returns were it not for Japan. Two

decades provided negative returns, the 1930s and the 1970s, one a period of depression, the other a period of stagflation.

If most people were asked which was a worse decade for stocks, the 1930s or the 1940s, most people would answer the 1930s, because of the Great Depression. In reality, the 1940s provided worse returns to global investors, primarily because of the losses World War II and its aftermath caused investors in Europe and Japan.

One interesting aspect of global stock returns is that there was a 30-year stock market cycle during the 20th Century. Stocks provided their greatest returns in the 1920s, 1950s and 1980s. Stocks provided more moderate real returns in the decades that followed, the 1930s, 1960s and 1990s. The worst decades were the 1910s, 1940s and 1970s, due to World War I, World War II, and stagflation respectively. This 30-year cycle is probably a coincidence since the cycle cannot be extended back to the 1800s, and there is no logical reason for a 30-year cycle to exist.

The World Index also shows the importance of market timing. The worst 30-years for Global investors since 1925 was 1928-1958 and the best 30-years for Global investors was 1931-1961. Only three years separated the start of the best and worst periods for global investors in the 20th Century. Similarly, the worst 10-year period for Global investors (1938-1948) was followed by the best 10 years (1949-1959).

The evidence shows that in the 20th Century, non-US investors benefited from a risk-return point of view from diversifying into the United States. These results were primarily due to the impact of World War II on investor portfolios. Since 1950, the difference in returns to investors in the developed countries has been small with the US and Europe providing comparable returns. Barring some unpredictable economic or political chaos in the 21st Century, this fact is likely to remain true in the near future.

CONCLUSIONS

So far we've looked at returns on stocks, bonds and bills in eight different countries and in international portfolios. We have found both some results that hold true for each country regardless of financial and economic conditions when investing over long periods of time, and we have found some relationships that depend upon the economic and financial environment. For our conclusions based upon this survey of investing in the 20th Century, see the paper "Ten Lessons for

the 21st Century Investor.”