GFD Guide to Global Stock Markets

Bryan Taylor, Chief Economist

Global Financial Data

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Australia

1. Sources

Global Financial Data's coverage of Australia relies upon a number of sources. Australian companies listed on the London Stock Exchange before exchanges opened up in Australia. Data from the GFD Indices for Australia, using Australian stocks that were listed in London, is used from 1825 until 1936. This data for mining and finance stocks is combined with data from Lamberton's *Share Price Indices in Australia* for Commercial/Industrial stocks from 1875 to 1936 to get an index of Australian stocks. We have combined data for mining stocks from the GFDatabase with Lamberton's data on commercial and industrial stocks that are listed in Australia to provide a more complete index of stocks in Australia. The dividend yield from the GFD Indices is used to calculate the total return from 1825 to 1936. For more information on the index, see Lamberton's article, "A Revised Stock Index for Australia." Real time indices from the Sydney stock exchange are available from 1936. The Australian exchanges combined into a single exchange in 1979. We have chain-linked these series to produce an index of Australian stocks that extends from 1825 until today.

Australia was formed as a federation in 1901. Before then, bond data from individual states are used to provide information on bond yields and returns. Bonds from different states are used until 1917 when the Australian government issued bonds in London. Since 1917 data from individual Australian government bonds with a maturity of 10 years or more are used. The bill index uses the bank deposit rate from 1834 until 1928 and the yield on 3-month T-bills since 1928.

2. Returns to Stocks, Bonds and Bills

Returns to Australian stocks from 1825 until 2020 are provided in Figure 1.1. Australia has provided one of the highest rates of return of any country in the world with an average annual return between 1859 and 2020 of 6.88% per annum as measured in US Dollars after inflation. Moreover, the returns to stocks in Australia have been very consistent as a review of Table 1.1 reveals. Australia has been able to grow its economy consistently during the past 200 years without the impediments of wars, inflation, nationalizations and the other problems which affected European countries during the twentieth century.

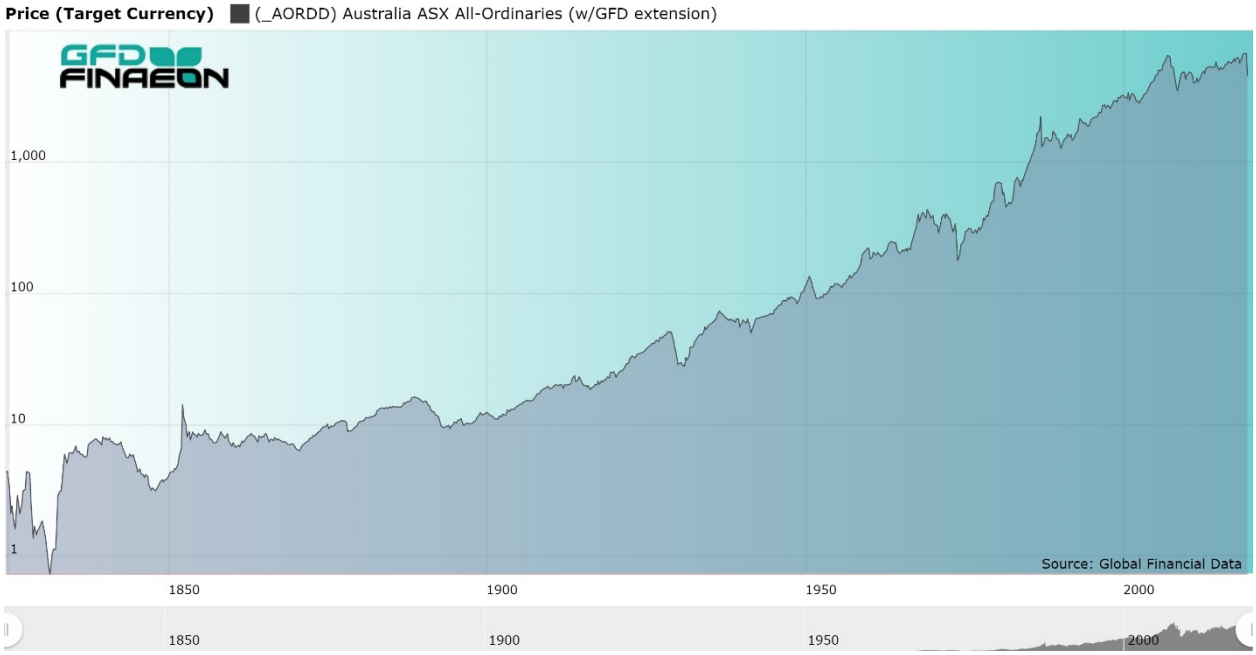

Figure 1.1. ASX All-Ordinaries with GFD Extension, 1825 to 2020

Australia's geographical isolation, its store of natural resources, its ability to attract immigrants, and its generally positive attitude toward growth and business have paid off in long-term steady growth that few other countries have been able to benefit from. Australia suffered no recessions in either the 2000s or the 2010s. Australian stocks have moved up in price steadily since 1900. Despite some dips in the stock market that came during recessions in the twentieth century, there appears no reason to believe that the Australian economy, and thus its stock market, will not be a stellar performer during the twenty-first century.

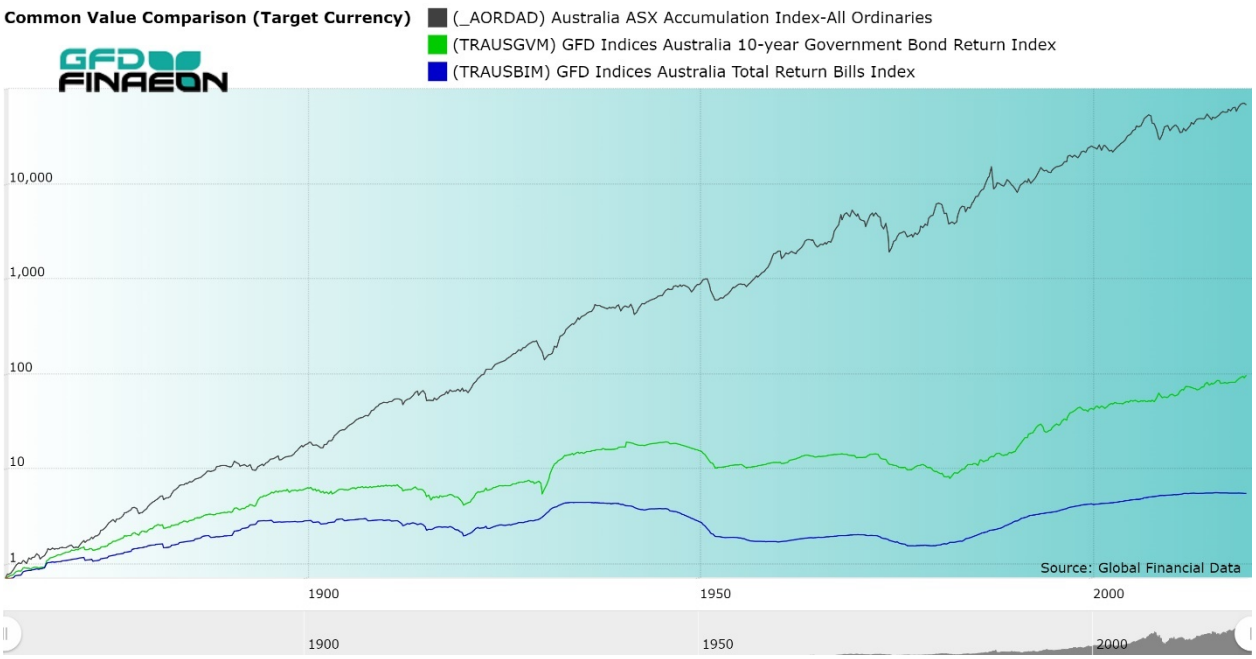

Figure 1.2. Real Returns to Stocks, Bonds and Bills in Australia, 1850 to 2020

Figure 1.2 charts the returns to stocks, bonds and bills in US Dollars after adjusting for inflation in Australia from 1850 until 2020. Stocks have far outperformed bonds which in turn have outperformed bills/cash during those 170 years. What is interesting is the consistency of the returns to stocks between 1850 and 2020. Stocks have consistently provided a return of around 7%. Although these returns fluctuated from decade to decade, as is illustrated in Table 1.1, if you look at the returns in the different eras that GFD tracks, these returns are fairly consistent. This is not true of most European countries. Australia shows what can happen in a country where politics does not interfere with growth in the economy.

The 1920s provided the highest returns to stocks of any decade during the twentieth century. Double-digit returns were also produced in the 1940s and 1950s, and although returns since 1980 have been less than 10% in any given decade, returns have remained consistently strong. The only decade which registered a negative return was the 1910s when inflation and World War I reduced the return to stocks. Australian investors have truly benefitted from their isolation from the rest of the world.

Years By Decade	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
1829-1839	15.19	16.89			19.49	
1839-1849	-4.56	-0.62			-2.96	
1849-1859	7.53	14.6			15.94	
1859-1869	-4	2.84	2.84	0.74	0.00	-1.8
1869-1879	3.37	10.08	5.53	3.8	4.31	0.1

1879-1889	5.25	11.34	5.15	2.92	5.89	0.28
1889-1899	-2.99	3.02	3.98	2	-0.92	-1.47
1899-1909	2.37	9.7	-0.31	-0.86	10.04	1.12
1909-1919	-7.55	-1.64	-7.61	-7.18	6.46	5.27
1919-1929	10.73	16.49	9.16	7.54	6.71	0.72
1929-1939	1.42	6.8	4.76	0.56	1.94	-1.01
1939-1949	-4.55	0.97	-3.62	-7.18	4.76	5.32
1949-1959	5.71	12.75	0.81	-1.26	11.85	6.42
1959-1969	5.04	11.18	1.65	1.58	9.38	2.48
1969-1979	-5.78	1.05	-0.5	-0.15	1.56	10.12
1979-1989	3.64	8.23	3.39	5	4.68	8.31
1989-1999	1.77	5.88	7.73	2.34	-1.72	2.26
1999-2009	5.14	9.54	7.43	6.11	1.96	3.17
2009-2019	-0.87	3.61	2.68	-1.65	0.92	2.11
By Era						
1848-1914	1.83	8.45		1.51		0
1914-1945	0.75	6.45	2.11	-0.42	4.26	1.65
1945-1981	0.16	6.44	-1.38	-1.42	7.93	6.71
1981-2019	2.47	6.86	6.07	2.83	0.75	3.61
To Present						
1899-1999	1.14	7	1.43	-0.06	5.50	4.05
1859-2019	1.05	6.88	2.6	0.81	4.17	2.66
1899-2019	1.29	6.92	2.02	0.31	4.80	3.81
1919-2019	2.12	7.54	3.28	1.2	4.13	3.94
1969-2019	0.71	5.62	4.1	2.29	1.46	5.14
1999-2019	2.09	6.53	5.03	2.16	1.43	2.64

Table 1.1. Returns to Stocks, Bonds, Bills, ERP and Inflation, 1829 to 2019

As in other countries, fixed-income investors suffered from rising interest rates between 1945 and 1981 and benefitted from falling bond yields after 1981. Total returns to bonds declined between 1945 and 1981 by 1.38% and returns to bills declined by 1.42%. Since 1981, bonds provided a positive 6.07% return while bills provided a 2.83% return; however, the return to bonds fell to 2.68% in the 2010s. With 10-year government bond yield under 1% in 2020, bonds and bills are unlikely to return more than 1-2% per annum for the rest of the decade.

3. Equity Risk Premium

The 10-year Equity Risk Premium between stocks and bonds is illustrated in Figure 1.3. Equities consistently outperformed bonds between the 1860s and the 1980s with the exception of the 1890s. What is impressive is the consistency of the relative return of stocks over bonds during those 120 years. In most countries, the equity-risk premium fluctuates up and down as stocks fall into bear markets and bonds outperform equities by default. However, the chart illustrates the absence of major bear markets in Australia's history and thus the consistent outperformance of stocks over bonds.

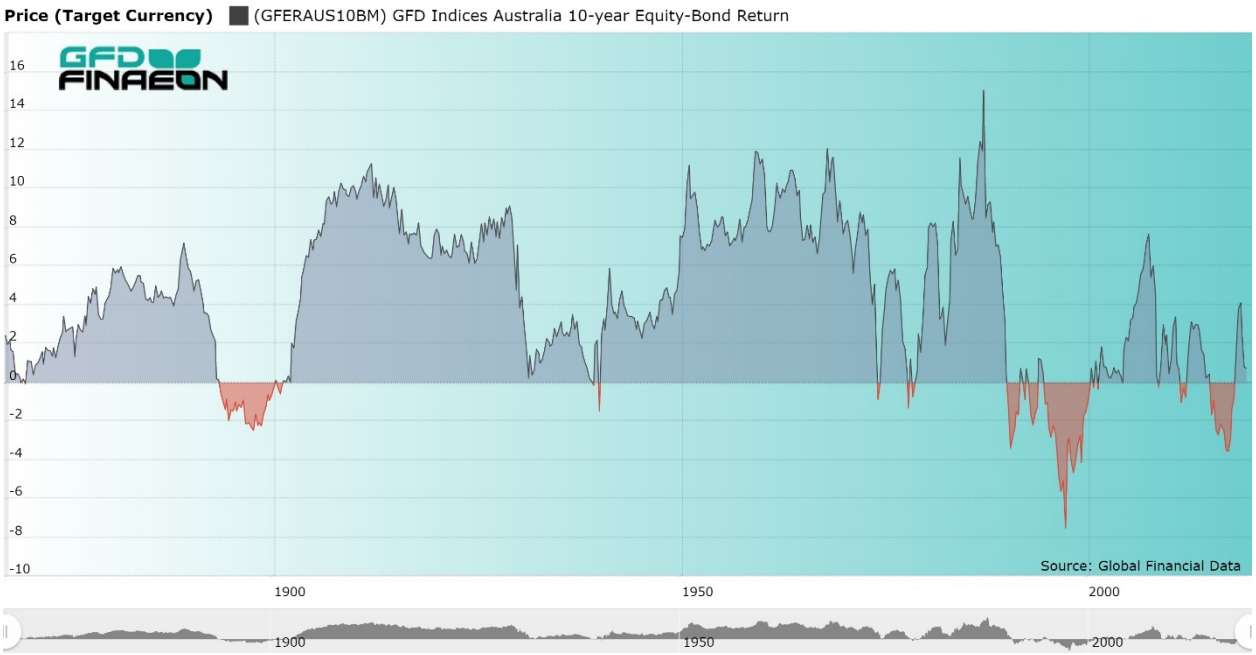

Figure 1.3. 10-year Equity Risk Premium in Australia, 1860 to 2020

This changed in the 1980s and 1990s when interest rates began their steady decline from 16.25% in 1982 to under 1% in 2020. Bond yields remained in double digits throughout the 1980s and only began their steady decline in 1989. The decline in bond yields between 1989 and 1998 enabled bonds to outperform stocks for the first time since the 1890s. However, with government bonds yielding under 1% in 2020, returns to bonds are unlikely to be greater than 1-2% per annum during the coming decade. Consequently, the equity-risk premium is likely to remain positive unless Australia suffers a bear market during the decade which, given Australia's history, seems unlikely.

4. Bull and Bear Markets

Table 1.2 provides a record of the bull and bear markets in Australia between 1825 and 2020. Data before 1870 is based upon a limited number of stocks that were listed on the London Stock Exchange which exaggerates the size of the bull and bear markets that occurred. For the most part, the bull and bear market moves are consistent with bull and bear markets in global stock markets.

Date	Bear Loss	Date	Bull Gain
		05/31/1825	
2/10/1826	-73.33	05/31/1828	243.75
4/30/1832	-85.45	06/30/1840	1156.70
11/30/1847	-62.60	12/31/1852	370.07
03/31/1871	-55.38	04/30/1889	156.93
01/31/1895	-42.79	6/30/1914	153.30
1/31/1917	-21.91	2/28/1929	178.97
8/31/1931	-46.49	3/31/1937	166.47

3/25/1942	-34.22	5/7/1951	192.73
11/7/1952	-37.88	9/16/1960	164.28
11/16/1960	-23.18	2/27/1964	41.65
6/25/1965	-20.40	1/6/1970	119.80
11/23/1971	-38.96	6/23/1972	57.85
9/27/1974	-59.43	8/19/1976	101.50
11/26/1976	-22.53	11/17/1980	172.76
7/8/1982	-40.62	9/21/1987	420.47
11/11/1987	-50.09	8/29/1989	54.80
1/16/1991	-32.40	2/3/1994	94.32
2/8/1995	-22.10	3/7/2002	88.67
3/13/2003	-22.29	11/1/2007	156.37
3/6/2009	-54.60	2/20/2020	133.16
3/19/2020	-37.09		

Table 1.2. Bull and Bear Markets in Australia, 1825 to 2020

The worst bear market since the 1870s was the 1972-1974 bear market in which stocks declined almost 60%. The 1987 and 2009 bear markets were even worse than the 1929 bear market in Australia. Surprisingly, the 2002 bear market was relatively weak compared to the declines in other countries, in part because Australia did not participate in the strong stock market rally of the late 1990s in the same way that the United States and other countries did.

The strongest bull market in Australia's history occurred between 1982 and 1987, in part because of the strong performance of mining stocks during those years. Although bull markets in Australia were more modest than some of the bull markets in the United States, what is impressive is the consistency in the returns. Bull markets were not as strong as in other countries, but bear markets were weaker as a result. Australia was able to pass through the 2010s without falling into a bear market, but finally went into a bear market during the Coronavirus Collapse of 2020. Once the Coronavirus pandemic is resolved, Australia should return to a bull market for some years to come.

5. Stock and Bond Yields

Figure 1.4 provides a graph of the yield on 10-year government bonds in Australia from 1857 until 2020. The graph relies upon bonds issued by individual states between 1857 and 1917 and by the Australian government between 1917 and 2020. Australian bond yields followed bond yields in the United Kingdom until World War I, declining during the nineteenth century and rising slightly until World War I began. Bond yields rose during the war, but peaked in 1931 when bond yields rose above 8% for the first time in the country's history. Bond yields declined until 1950 when the interest rate pyramid of rising rates from 1941 until 1982 and declining rates thereafter began.

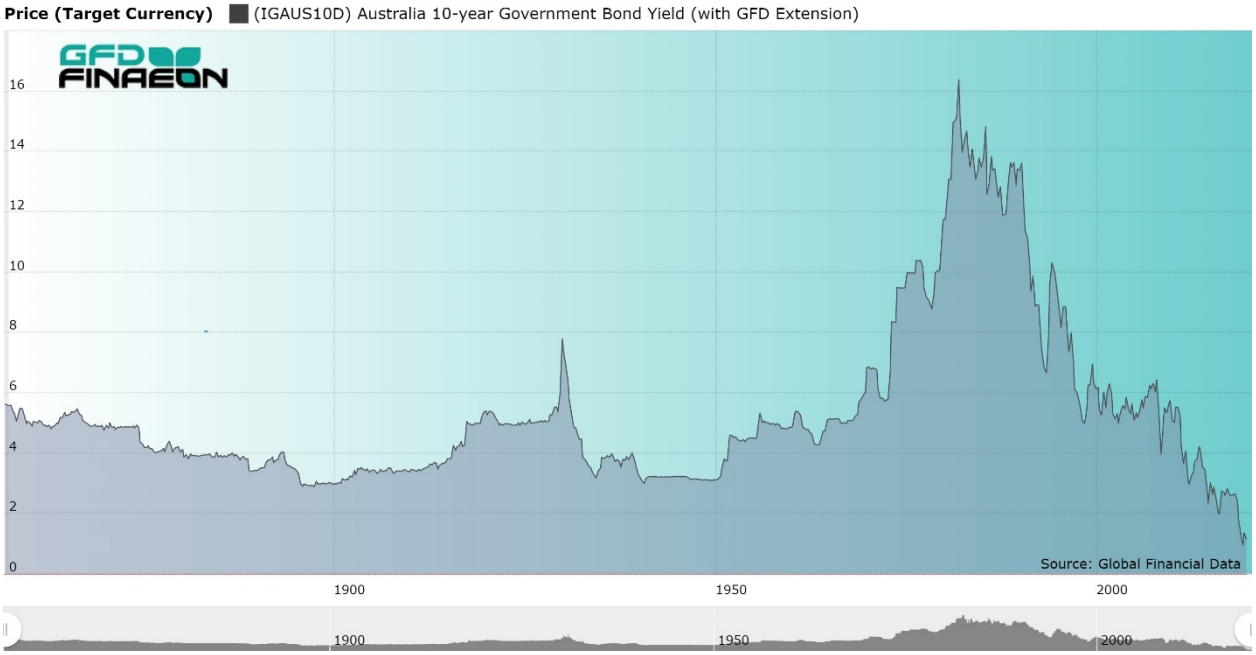

Figure 1.4. Australian 10-year Bond yield, 1857 to 2020

Australia suffered from high inflation in the 1970s and 1980s and this kept bond yields in double digits for over a decade; however, beginning in 1989, bond yields began their steady decline to under 1% in 2020. Bond yields are likely to remain in the 1-2% range for some years to come.

Figure 1.5 compares the yield on stocks and bonds by subtracting the yield on bonds from the yield on stocks. Stocks provided a higher yield than government bonds until the 1960s when rising interest rates drove the difference to double-digit levels by the 1980s. There was a brief period in the 1930s when government bond yields exceeded stock yields, but this didn't last past the start of World War II when falling bond yields enabled stocks to once again provide a higher yield than bonds. After 1981, falling government bond yields reduced the difference between the yield on stocks and bonds. During the past ten years, the falling yield on bonds has once again enabled stocks to provide a higher return than bonds. With government bond yields stuck below 1% at present, this pattern looks like it will probably continue for some years to come.

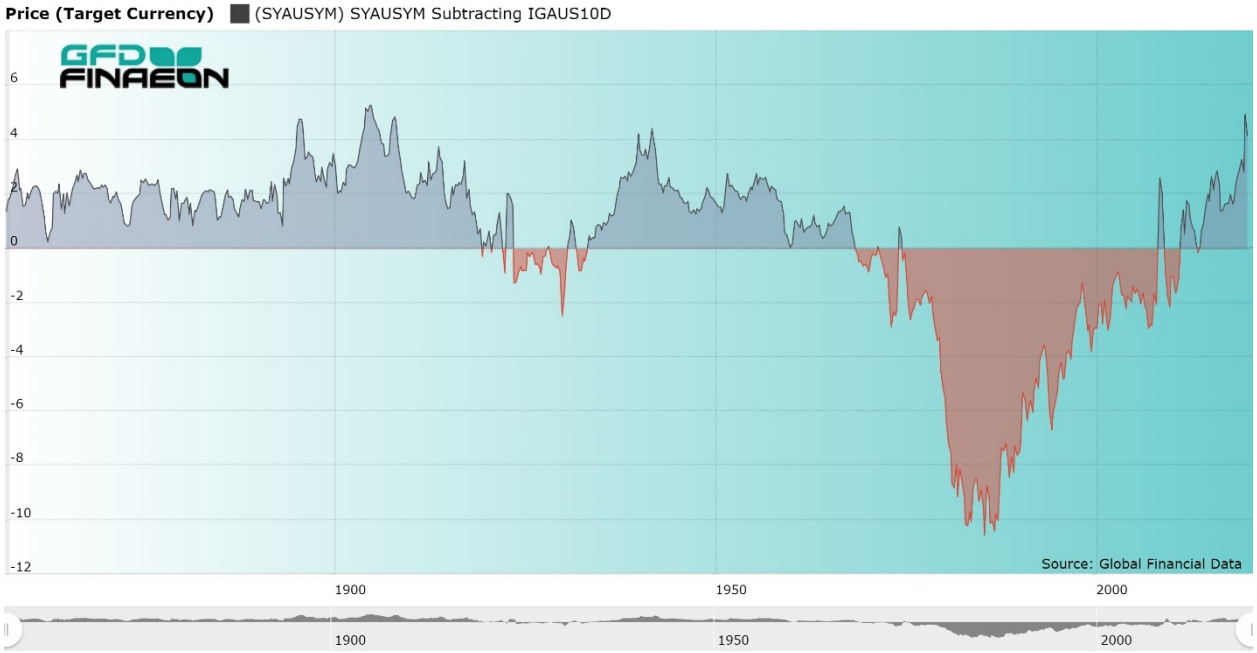

Figure 1.5. Australia Stock Yield Minus Bond Yield, 1860 to 2020

6. Stock Market Capitalization and Government Debt Share of GDP

Using data from the London Stock Exchange in the 1800s and Australian exchanges in the 1900s and 2000s we have been able to produce data on the market capitalization of Australian stocks back to the 1830s. Our calculations show that the stock market capitalization averaged around 40% of GDP between the 1830s and the 1910s. Although this number seems high, numerous mining companies were listed in London which raised the MCap/GDP ratio. Gold was discovered in Australia in 1851 and this led to an increase in the number of Australian companies that listed in London. Australia participated in the bull market of the 1920s as market capitalization exceeded GDP by 1929, but this ratio declined from there until the 1980s when market capitalization began growing again. Today, the Australian Exchange has a capitalization over $1 trillion and lists almost 2000 companies.

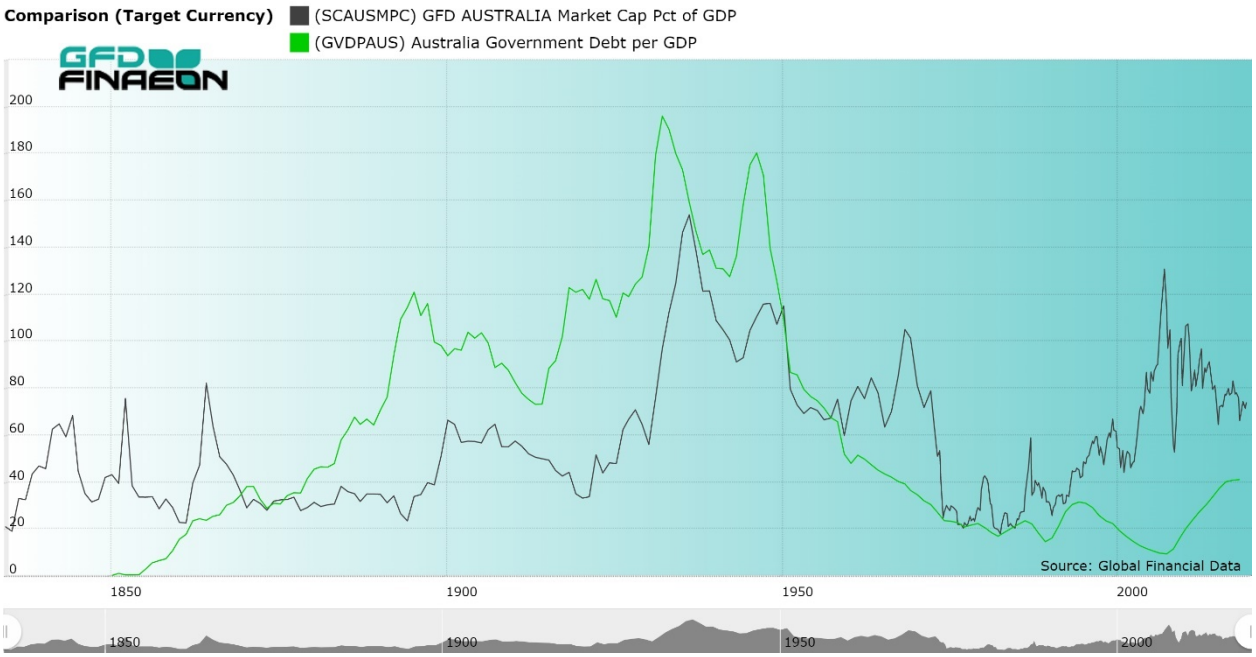

Figure 1.6. Australia Market Cap and Government Debt as a Share of GDP, 1830 to 2020

Surprisingly, for most of Australia's history, its government debt has exceeded its market capitalization. In part, this was because Australia was a former colony of Great Britain and it was able to raise money in both London and Australia. Although Australia was never invaded during either World War I or World War II, the country did incur large expenses in aiding the United Kingdom which increased its debt load to over 100% of GDP by the end of World War II. Since then, government debt consistently declined between the end of World War II and 2000 by which time government debt had fallen to around 10% of GDP. Although government debt has risen during the past 20 years, it remains less than the stock market's capitalization and less than in most developed countries as a share of GDP. Australia's low government debt load is a positive factor that favors continued growth of the stock market.

7. Exchange Rate

Figure 1.7 provides 200 years of exchange rate history between the Australian Pound/Dollar and the United States Dollar. Originally, the Australian Pound was tied to the British Pound Sterling at par. Any changes in the exchange rate in Britain was reflected in a change in the exchange rate in Australia. When Britain left the Gold Standard in 1931, Australia began to chart its own exchange rate path. The exchange rate was revised in 1932 at 1.25 Australian Pounds equal to 1 British Pound, and in 1966, the Australian Dollar replaced the Australian Pound with 2 Australian Dollars equal to 1 Australian Pound.

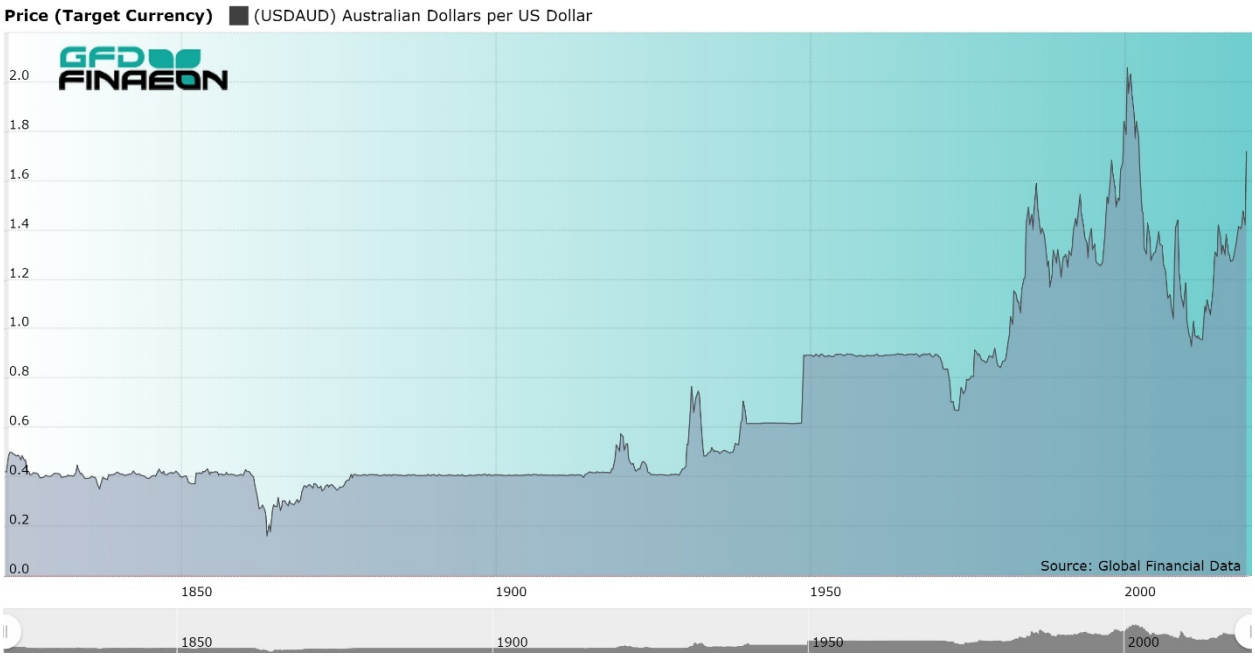

Figure 1.7. Australian Pound/Dollars per United States Dollar, 1822 to 2020

The Australian Pound depreciated in 1949 in line with the British Pound, and the exchange rate between Australia and the United States remained stable between 1949 and 1971. Since then, the Australian Pound has floated and generally depreciated relative to the United States Dollar. Most of the depreciation came in the 1980s when Australia suffered higher inflation than the United States, but since then, there has been little overall change in the Australian Dollar – United States Dollar exchange rate. It would be expected that the exchange rate would stay around the level of 1.25 Australian Dollars per United States Dollar for some years to come.

8. Conclusion

Australia has provided one of the most consistent and highest returns to equity investors of any country in the world. The country has enjoyed the opportunity to grow its economy without war, hyperinflation, dramatic social changes or political chaos influencing the economy. Since 1859, stocks returned 6.88% in US Dollars after inflation, bonds returned 2.6% and bills 0.81%. These numbers are just slightly below the 7.09% return for equities, 3.54% for bonds and 2.27% that the United States provided after inflation between 1791 and 2019. So far, during the twenty-first century, returns have been 6.53% for stocks, 5.03% for bonds and 2.16% for cash.

There is no reason to believe that Australia will not continue to provide high returns in the decade to come. Australia has benefitted from the growth of the Chinese economy and will continue to grow as the Chinese economy expands. Australia remains open to immigration, trade and places few impediments on the growth of the economy. Australia has always been a good country to invest in and likely will continue to be so in the coming decade.

Austria

1. Sources

The Austro-Hungarian Empire was the second largest country in Europe until World War I. The Vienna stock exchange started trading bonds in 1771 and shares in 1818. The stock exchange was one of the larger exchanges in Europe with companies from the different parts of the Empire listed on the Vienna stock exchange. After World War I, the Empire was broken up into smaller countries and the size of the Vienna stock exchange shrank dramatically. The Vienna stock exchange reopened in 1948, but there were no IPOs in the 1960s or 1970s. Today, the capitalization of the Vienna stock exchange is relatively small at around $125 billion and lists about 70 local companies.

No historical indices for the Vienna stock exchange is available before World War I and data for the Vienna stock exchange begins in 1922 after Austria recovered from the post-World War I hyperinflation and replaced the Krone with the Schilling. Austria was incorporated into Nazi Germany between 1938 and 1945 and emerged as an independent, though neutral, country after World War II.

Stock market indices calculated on the Vienna Stock Exchange have been used from 1922 until the present. Various indices were calculated by national statistical agencies until the 1960s and a daily index of the Vienna Stock Exchange was introduced in 1967. Although price data exists since 1922, dividend yield and total return data are only available beginning in 1969.

Data for government bonds is based upon bonds issued by the Austrian government beginning in 1788. Data for Austria, as opposed to Austria-Hungary is used beginning in 1922. Data for cash depends upon private bills from 1860 to 1931, the central bank discount rate from 1931 to 1959 and either treasury bills or the interbank rate since 1960.

2. Returns to Stocks, Bonds and Bills

Returns to stocks, bonds and bills in Austria were adversely impacted by World War I, the hyperinflation that followed the war, World War II and the requirement of political neutrality that followed the war. Although we lack dividend yield data before 1970, which would enable us to calculate the total return to stocks, we can rely upon the price indices for stocks before 1970 to provide an idea of the total returns that investors would have received. Measured in nominal US Dollars, there was no change in the value of the stock market between 1922 and 1969. Austria has had one of the worst returns to stocks, bonds and bills of any country in the world.

Since 1969, stocks have returned 4.80% per annum, but this is barely above the 4.63% that bonds have returned during the past 50 years. In no decade since the 1950s have Austrian stocks provided a double-digit return in US Dollars, and during the twentieth century, stocks have only returned 1.87%.

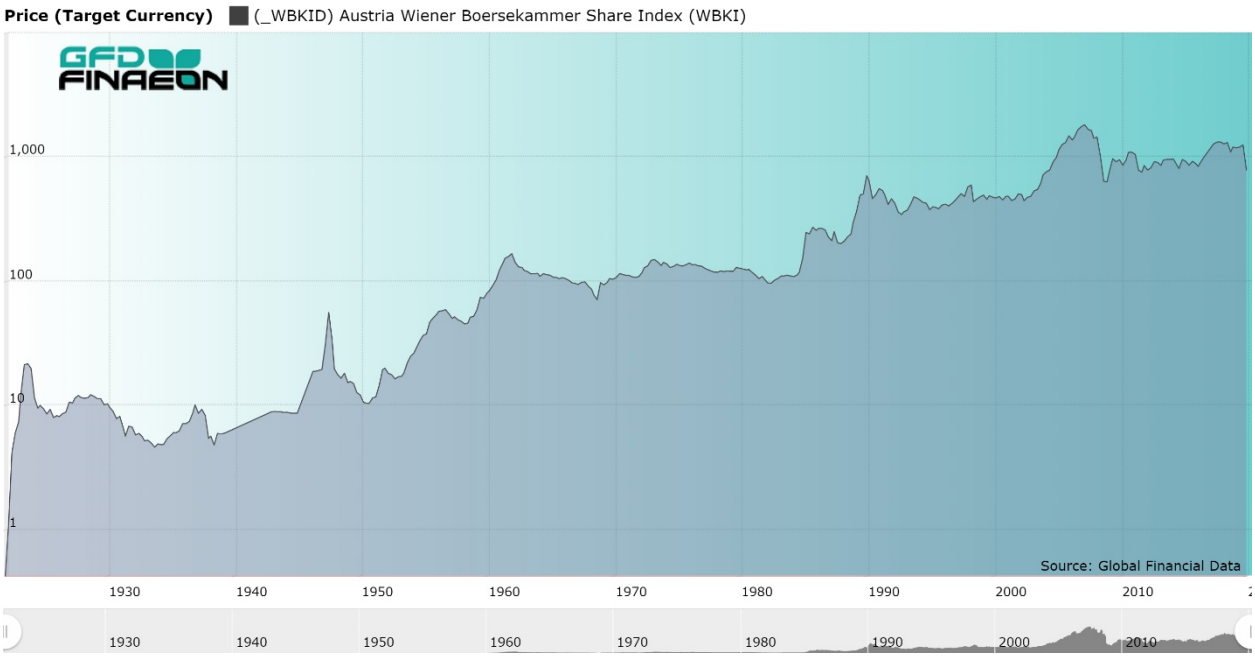

Figure 2.1. Austrian WBKI Index, 1922 to 2020

Returns to bonds during the first half of the twentieth century were negative because of the hyperinflation that followed World War I and the inflation and currency changes that were introduced after World War II. Between 1899 and 2019, bonds on average lost 1% per annum in real US Dollars while cash lost 6.42%. Annual inflation was over 10% between 1899 and 2019, primarily driven by an average annual inflation rate of over 91% in the 1920s. Between 1914 and 1945, bonds lost 8.32% per annum, gained only 0.58% between 1945 and 1981, but gained 4.98% per annum between 1981 and 2019.

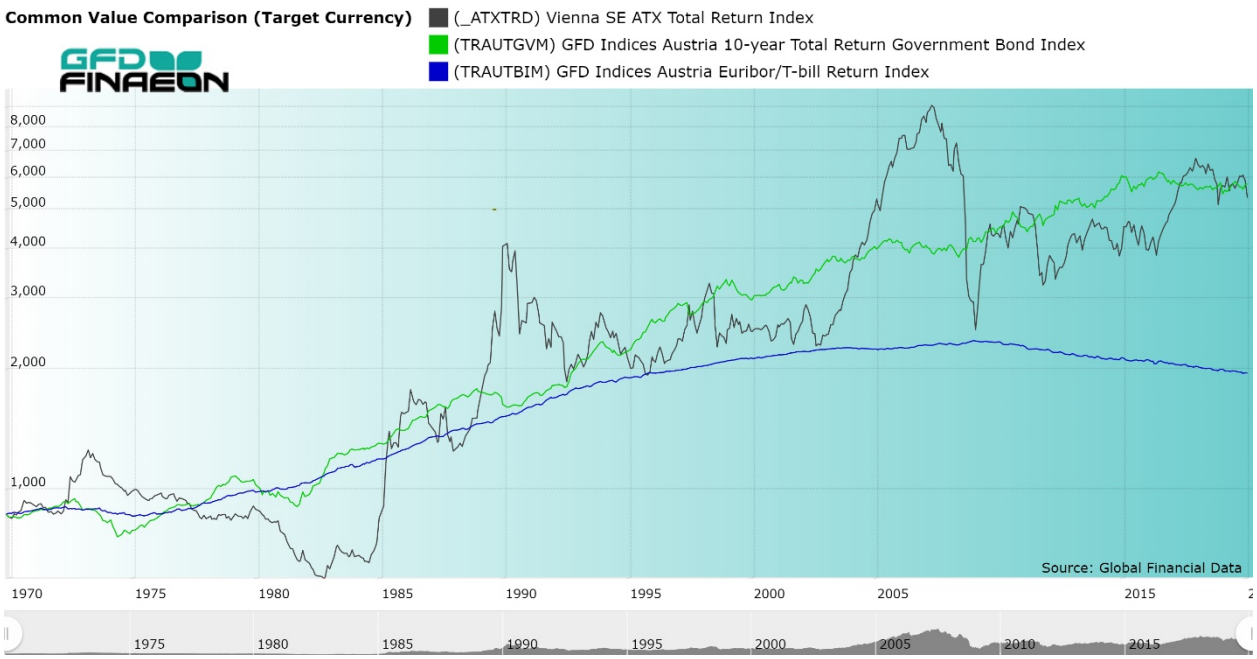

Figure 2.2. Real Returns to Stocks, Bonds and Bills, 1970 to 2020

With bond yields currently negative, it looks like there are few opportunities for either capital gains through lower interest rates or earning interest on government bonds. This means that fixed-income investors are unlikely to get any return during the coming decade. This also means that equities are likely to outperform bonds as long as there are positive returns. Between 1969 and 2019, stocks and bonds had very similar returns. This is unlikely to be true in the coming decade.

Years	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
By Decade						
1869-1879			15.46	7.99		0.58
1879-1889			7.77	3.64		-0.84
1889-1899			4.06	3.62		-0.26
1899-1909			2.38	1.72		1.39
1909-1919			-29.13	-31.44		13.64
1919-1929			-2.75	-40.61		91.74
1929-1939	-0.27		4.39	10.11		-0.85
1939-1949	-14.76		-14.52	-18.16		21.6
1949-1959	19.3		8.11	4.77		4.8
1959-1969	1.23		3.7	2.19		3.41
1969-1979	2.3	6.7	8.34	7.67	-1.51	5.98
1979-1989	9.58	11.18	3.93	3.43	6.98	3.69
1989-1999	-4.53	-2.85	3.93	1.45	-6.53	2.41
1999-2009	7.61	8.53	6.91	3.98	1.51	1.94
2009-2019	-1.05	1.09	0.24	-3.99	0.84	1.93
By Era						

1914-1945			-8.32	-20.58		28.80
1945-1981	1.19		0.58	-0.39		16.61
1981-2019	4.54	6.14	4.98	1.95	1.10	2.28
To Present						
1899-1999			-1.89	-7.64		12.50
1899-2019			-1.01	-6.42		10.67
1919-2019			2.01	-4.27		11.35
1969-2019	2.65	4.8	4.63	2.44	0.16	3.18
1999-2019	1.26	1.87	1.39	-0.03	0.47	0.77

Table 2.1. Real Returns in US Dollars to Stocks, Bonds and Bills from 1869 to 2019

3. Equity Risk Premium

Stocks and bonds provided approximately the same returns between 1969 and 2019. The Equity-Risk Premium during the past 50 years was only 0.16%. This means that the equity-risk premium is almost non-existent in Austria. Between 1914 and 1945, bonds lost 8.32% per annum which means that stocks outperformed bonds if only by default.

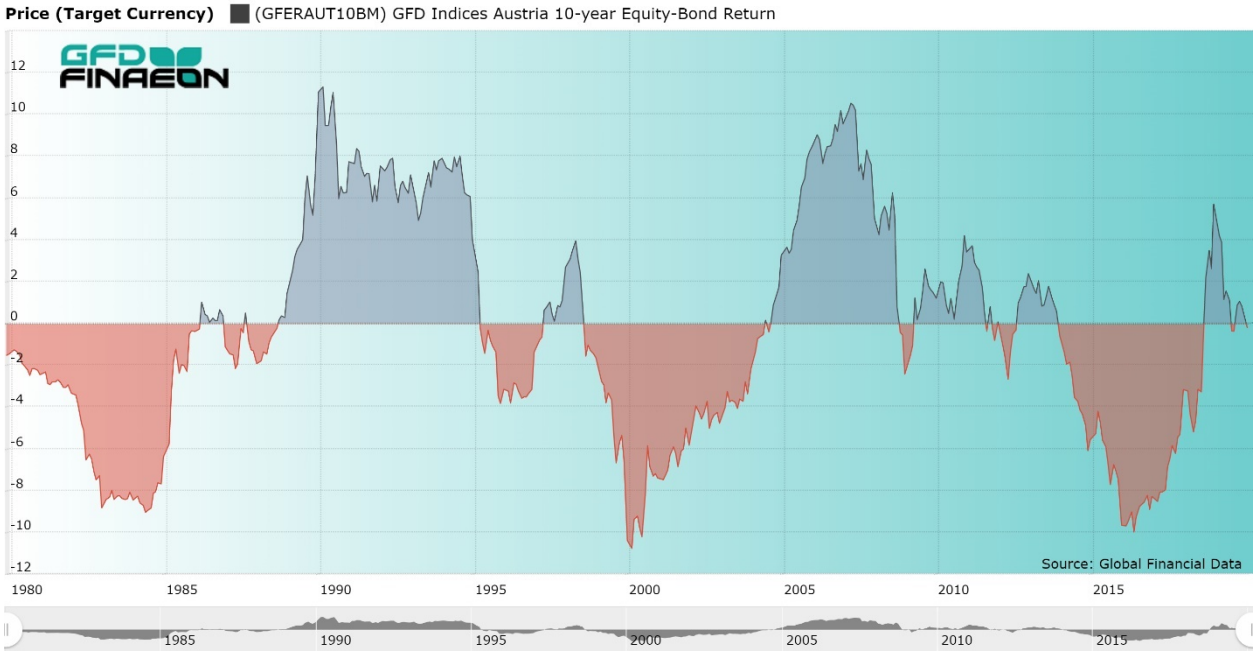

Table 2.3. Austrian Equity Risk Premium, 1980 to 2020

These facts are reflected in Figure 2.3 which illustrates the 10-year Equity-Risk Premium between 1980 and 2019. Equities outperformed bonds in about half the years. In most countries, equities outperform bonds about 80% of the time. Primarily because we anticipate that the return to bonds will be low in the coming decade, the Equity-Risk Premium is likely to be positive for most of the decade; however, the opportunities for high returns in Austria during the coming decade remain low.

4. Bull and Bear Markets

A history of bull and bear markets in Austria is provided in Table 2.2. As the table shows, Austria tends to have very deep bear markets with eight of the ten bear markets showing a drop of 50% or greater. This is one reason why equities have performed so poorly in Austria. The post-World War II bear market was the worst in Austria's history with the stock market declining over 82%; however, this was followed by the best bull market in Austria's history during which the market rose over 1670% between 1950 and 1962. The second worst bear markets was the 2007-2009 bear market when the market declined over 71%. Although the market has declined over 50% since 2018, given the behavior of past bull markets, you would expect that the Austrian market should at least double in price when the new bull market begins. Nevertheless, this would only bring the Austrian stock market back to where it had been when the current bear market began.

Date	Bear Loss	Date	Bull Gain
2/28/1922		12/31/1923	5177.86
12/31/1925	-63.11	11/30/1927	56.81
1/31/1934	-63.16	3/31/1937	118.62
8/31/1938	-53.31	9/30/1947	1087.76
8/31/1950	-82.79	2/28/1962	1670.98
12/31/1968	-58.35	6/30/1973	110.61
10/31/1982	-36.23	7/27/1990	655.96
1/15/1993	-54.30	6/15/2007	463.03
3/9/2009	-71.22	2/14/2011	111.59
11/23/2011	-40.14	1/23/2018	110.31
3/18/2020	-51.10		

Table 2.2. Bull and Bear Markets in Austria, 1922 to 2020

5. Stock and Bond Yields

Austria has a long history for government bond yields. Government bonds were traded on the Vienna stock exchange in 1771 and data in Amsterdam go back to 1788. The yield on the bond averaged around 4% during most of the 1800s and the first half of the 1900s, but rose as high as 11% in 1848 and 10% in 1867 because of fears of default. During the hyperinflation of 1920, the yield went down to almost zero as the price of Austrian bonds skyrocketed to 18% in June 1940 when Austria was part of Nazi Germany. During the increase in bond yields in 1981, the yield reached 11.48%, but declined to less than zero in 2019. With bond yields close to or below zero, fixed-income investors are unlikely to receive much of a return in the decade to come.

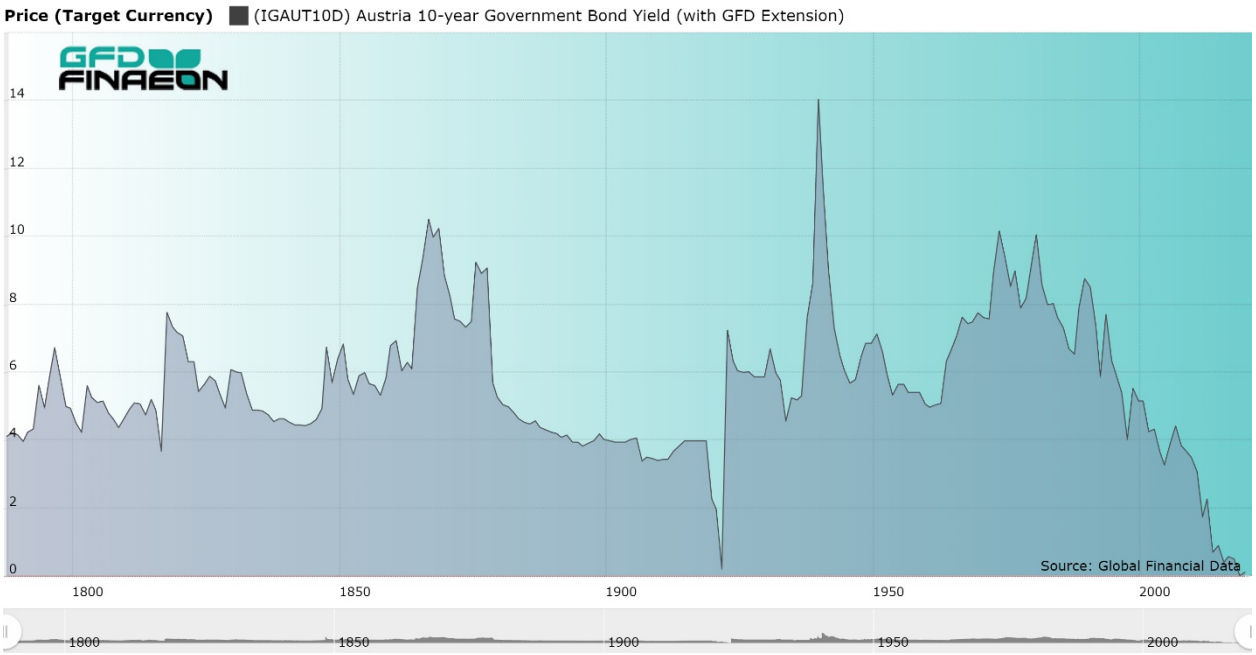

Figure 2.4. Austrian Yield on 10-year Government Bonds, 1788 to 2020

Unfortunately, we only have 50 years of history on the yield on Austrian stocks, so the ability to compare the yield on stocks and on government bonds is limited. As in other countries, between the 1960s and the financial crisis of 2008, the yield on government bonds exceeded the yield on stocks. However, since 2011, stocks have consistently provided a higher yield than government bonds, primarily because the yield on government bonds has been so low. This pattern is likely to continue in the near future.

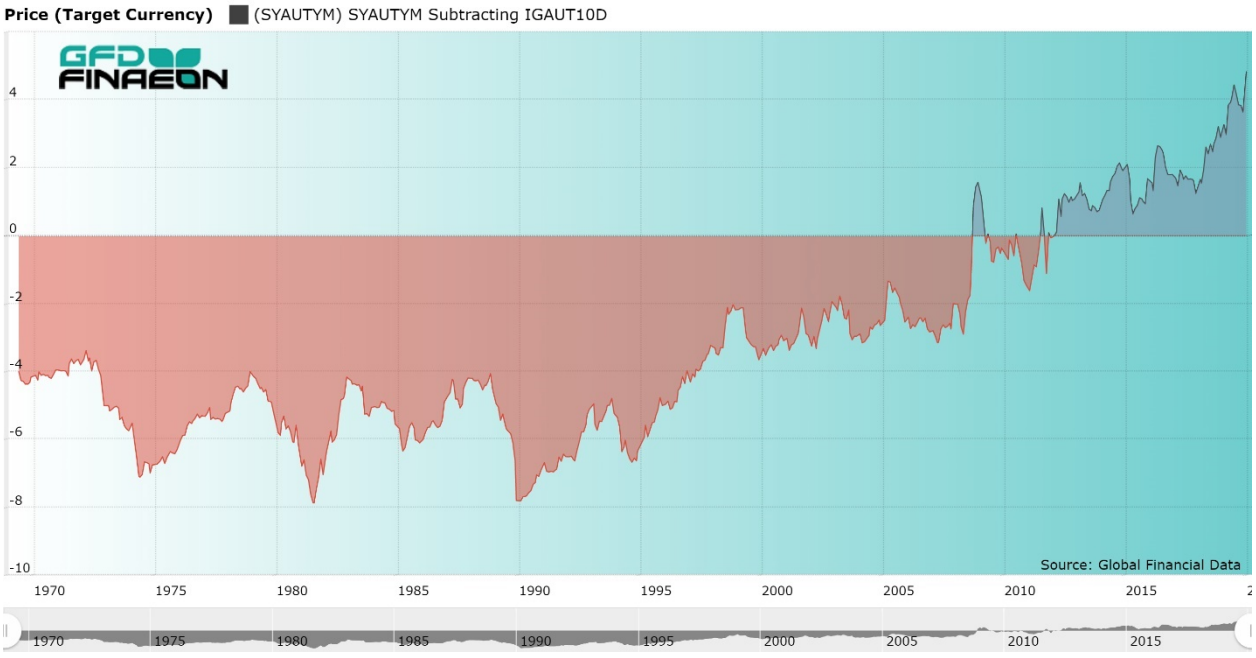

Figure 2.5. Austria Stock Yield Minus Government Bond Yield, 1970 to 2020

6. Stock Market Capitalization and Government Debt Share of GDP
Market Cap and Government Debt as Share of GDP Graph

Both government debt as a share of GDP and market cap as a share of GDP declined from the beginning of World War I until the 1970s. Government debt as a share of GDP fell from 80% in 1900 to around 20% in the 1970s. It then returned to 80% by 2020. Market cap as a share of GDP has always been low in Austria. Primarily local companies have listed on the Vienna stock exchange. The market cap declined from around 40% before World War I to around 10% after World War II and remained under 10% until the 1980s. Although the market cap has risen to around 20% of GDP today, this is still substantially below the level of almost any other country. Although Vienna had an important stock market before World War II, the Viennese stock exchange has been almost irrelevant to the rest of the world since Vienna lost the rest of its empire after World War I.

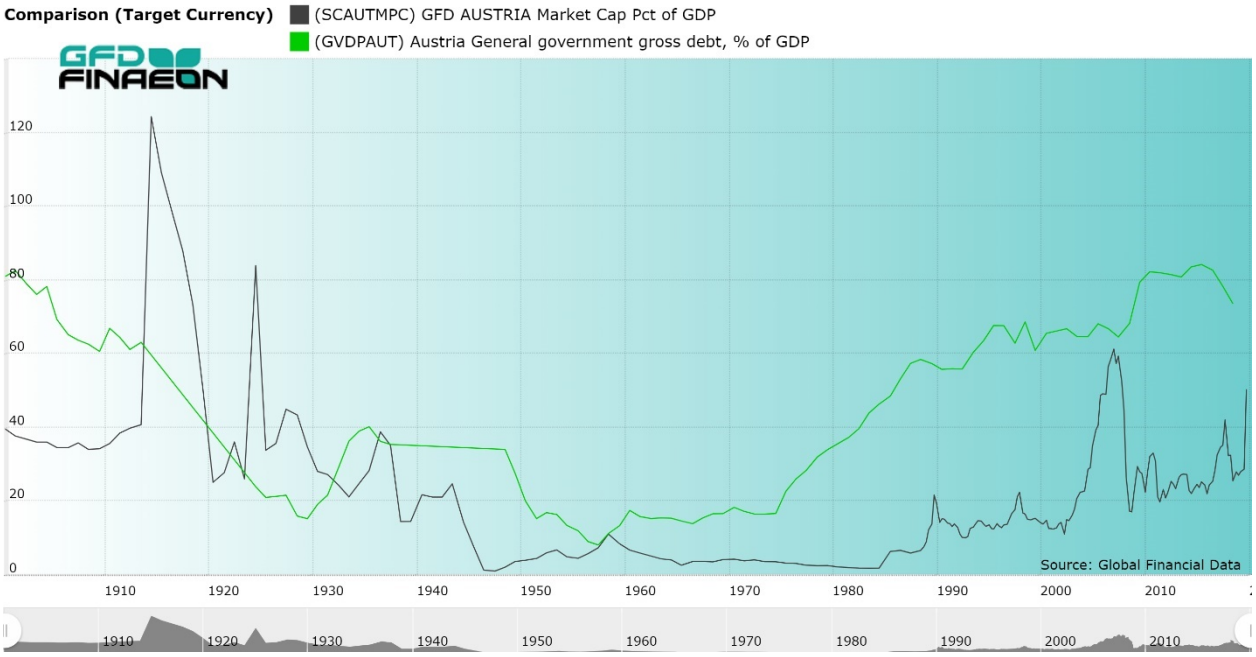

Figure 2.6. Austria Market Capitalization and Government Debt as a Share of GDP, 1900-2020

7. Exchange Rate

With a couple of exceptions, Austrian exchange rates have been very stable relative to the U.S. Dollar since 1813. Austria suffered depreciation in the 1800s when the Gulden fell from 11.5 ounces of silver in 1757 to 1.11 ounces in 1857, a 90% depreciation. The two exceptions to this stability in the twentieth century were the post-World War I hyperinflation that occurred in Austria in the early 1920s and the post-World War II inflation. The annual inflation rate in the 1920s was 91% per annum, although almost all of that occurred between 1920 and 1922 when the Schilling replaced the Kronen at a rate of 10,000 Kronen to 1 Schilling. After World War II, a new Schilling was introduced which was set equal to 3 old Schilling. These large changes in the value of the currency are illustrated in Figure 2.6. During other time periods, Austria was able to maintain its exchange rate to the US Dollar.

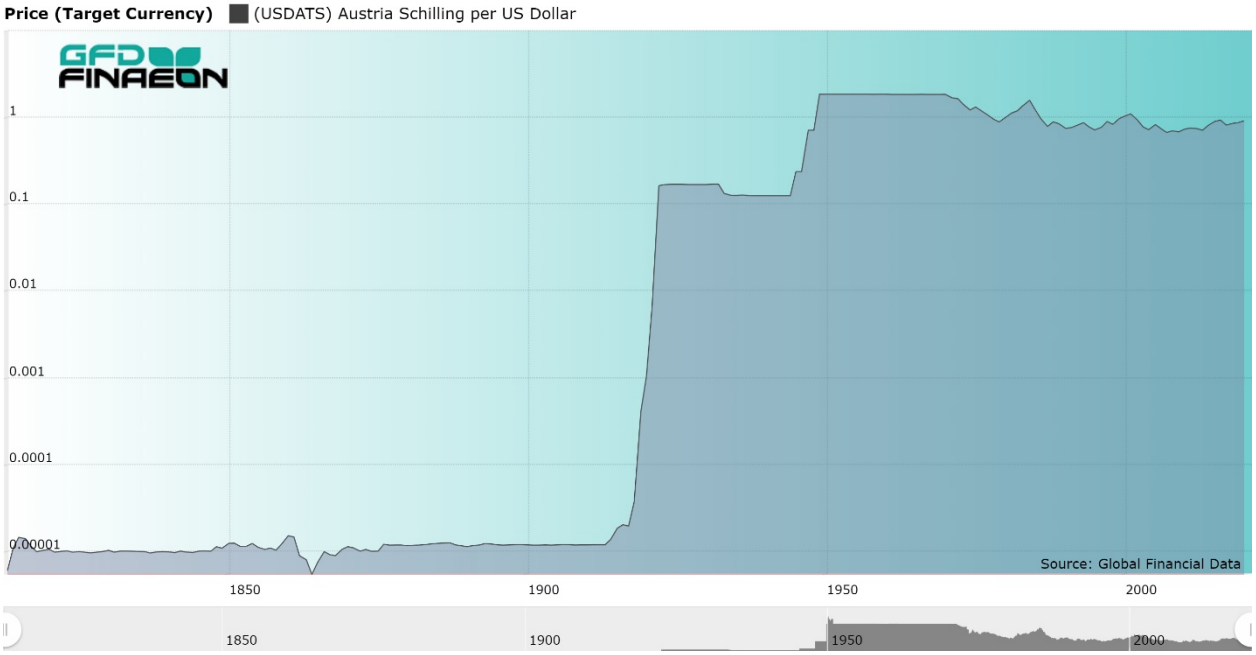

Figure 2.7. Exchange Rate of Austria Krone/Schilling/Euro to the US Dollar, 1813 to 2020

8. Conclusion

Austria has had one of the worst returns to stocks, bonds and bills of any country in the world. Although total return data is only available during the past 50 years, we can look at the price behavior of Viennese stocks before 1969 to extrapolate how equity investors would have done. Between 1929 and 2019, shareholders would have earned a 4.90% annual return in real US Dollars. With bond yields negative and little prospect for growth, Austrian stocks, bonds and bills are all likely to provide mediocre returns in the decade to come.

Belgium

1. Sources

The Brussels stock exchange was established in 1801 when the country was part of France. Belgium gained its independence from the Netherlands in 1831, but has been torn between the Flemish and Walloon portions of the country ever since with the capital of Brussels stuck in between. In the 1800s, the Brussels stock exchange was one of the largest in Europe. Although the Belgian railroads were built by the states, there was plenty of investment opportunities in banks and in tramways as well as foreign companies. Unfortunately, returns to investors have been mediocre.

The StudieCentrum voor Onderneming en Beurs (SCOB) has done extensive work using the archives of the Brussels stock exchange to recreate the history of equities in Belgium from the 1830s to the present. Monthly data on Belgian stocks are available beginning in 1897. The Belgian stock market was closed between 1914 to 1918, in 1940 and in 1944-1945. GFD has chain-linked the various stock market indices that have been calculated to provide data from 1897 until today.

When Belgium gained its independence in 1831, one-third of the Dutch debt was transferred to Belgium. The Belgian 5% Rentes were gradually converted into 3% Perpetual Bonds that continued to exist until World War II and are used as the basis for returns to government bonds in Belgium. Data on private bills was available beginning in 1848 and the Central Bank Discount Rate is available beginning in 1858. The overnight call rate was used from 1927 to 1948 and the Treasury bill yield from 1948 until the present.

2. Returns to Stocks, Bonds and Bills

Stock returns in Belgium are among the lowest of any of the countries that we cover. Belgium suffered a lot of destruction during each of the two World Wars since Belgium was placed between Germany and France. Between 1839 and 2019, the average price of equities in Belgium as measured in real US Dollars actually declined. Only when you add in the dividends that shareholders received do equities provide a positive return, though this is only 3.5% per annum. This compares very poorly with returns of about 7% for equities in the United States. Bonds returned 2.08% per annum during that same period of time, leaving an ERP of only 1.39%. Between 1899 and 2019 returns to cash were negative. One could almost recommend that Belgian investors should avoid investing in Belgium.

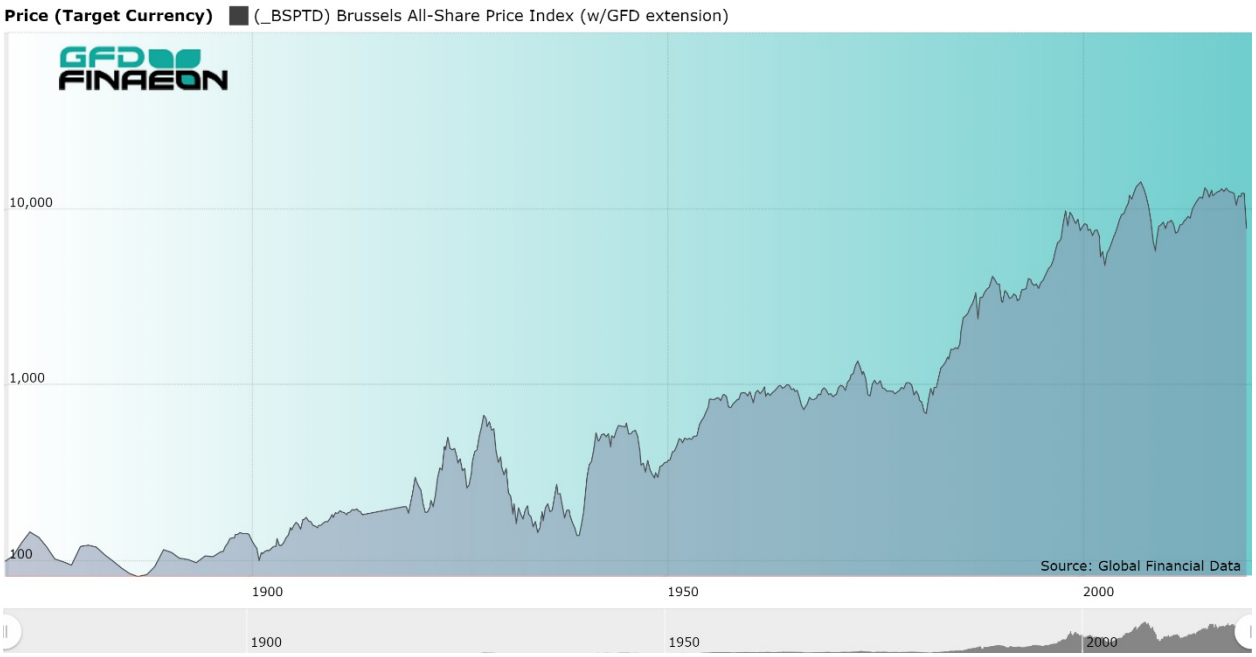

Figure 3.1. Brussels All-Share Price Index, 1870 to 2020

By breaking up the returns into the four eras, we can see that returns were 4.26% between 1848 and 1914, fell to under 1% between 1914 and 1981, and then increased to 8.26% between 1981 and 2019. The negative impact that Belgium's geographical position had on its returns becomes obvious when you break down returns by these eras. Because of inflation, returns to bondholders were -3.54% between 1914 and 1945 when Belgium was subjected to World War I and World War II and only 0.54% between 1945 and 1981 when inflation raised the yield on government bonds from 3.25% in 1937 to 14.25% in 1982. The return to bonds rose to 5.86% between 1981 and 2019 as bond yields declined from 14.25% in 1982 to -0.38 in 2019.

Although the best decade for equities was the 1920s when stocks returned 21.38% per annum, this decade was surrounded by negative returns in the 1910s (-7.36%), 1930s (-3.36%) and 1940s (-13.26%). These poor returns occurred during periods of high inflation in the 1910s (13.71%) and 1940s (12.73%). As in most countries, the stock market provided high returns in the 1980s (12.90%), but has faltered in the twenty-first century when equities have only provided a 3.04% return in real US Dollars.

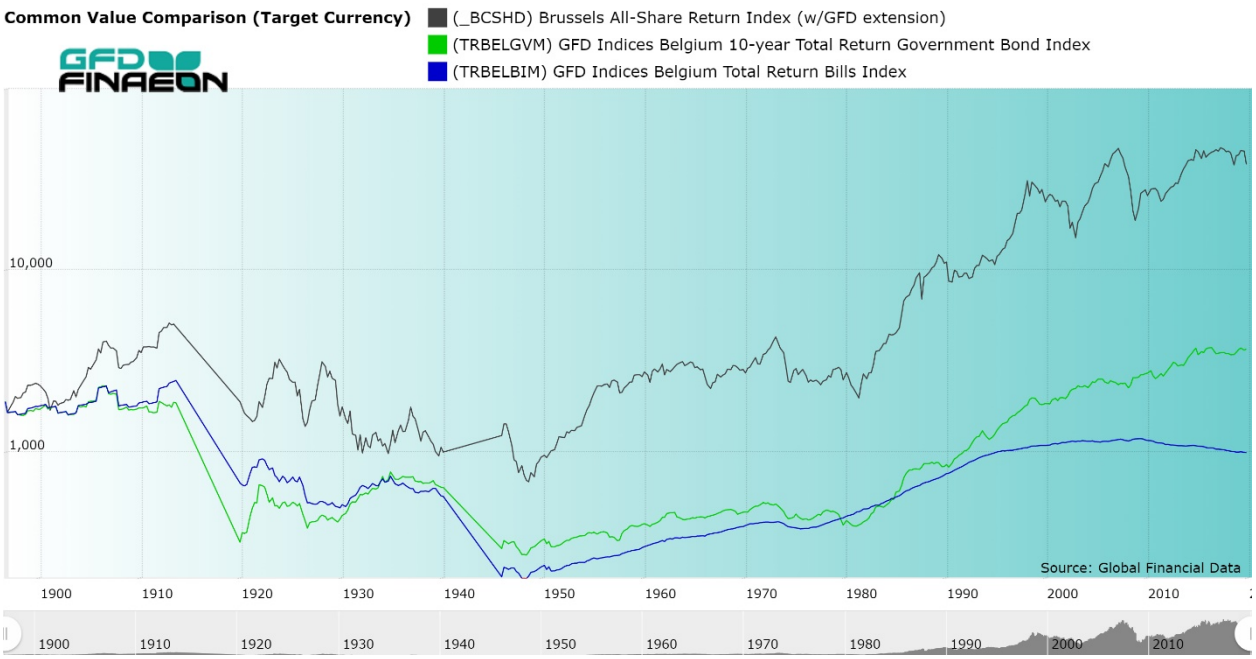

Figure 3.2. Belgium Returns to Stocks, Bonds and Bills, 1897 to 2019

The impact of the war on bonds is visible in the 1910s and 1940s when bonds lost 14.17% and 19.47% respectively in real US Dollars. Because of the inflation, cash lost 21.37% per annum in the 1940s. These losses can be seen in Figure 3.2 which shows the decline in the value of stocks bonds and bills between 1914 and 1950. Belgian investors clearly paid the price of being stuck geographically between Germany and France. Since World War II, however, Belgium has been a poor prospect for growth. Equities increased in value by 6.08% per annum between 1969 and 2019, but so far only 3.04% in the twenty-first century. Equities have underperformed both bonds and cash during the past twenty years, though this was mainly due to underperformance in the 2000s.

Years By Decade	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
1829-1839	0.60	3.75				0.96
1839-1849	-2.44	0.76				-1.04
1849-1859	4.07	8.88	4.68		4.02	0.26
1859-1869	-5.23	-0.34	0.78	-0.48	-1.10	1.44
1869-1879	4.40	8.99	7.52	5.64	1.37	3.79
1879-1889	-0.27	3.80	4.92	3.19	-1.07	0.88
1889-1899	1.39	5.88	3.20	2.15	2.60	3.31
1899-1909	-2.41	1.86	0.51	0.66	3.38	2.96
1909-1919	-9.85	-7.36	-14.17	-9.42	8.00	13.71
1919-1929	16.98	21.38	13.66	9.32	0.70	8.70
1929-1939	-6.85	-3.36	7.92	4.94	-10.48	-0.67
1939-1949	-15.03	-13.24	-19.47	-21.37	6.68	12.73

1949-1959	4.55	9.13	2.15	2.48	9.25	2.10
1959-1969	-3.13	0.72	1.89	3.15	-0.98	2.76
1969-1979	-0.41	4.79	4.85	6.82	0.85	7.14
1979-1989	7.23	12.90	4.07	2.64	7.69	4.75
1989-1999	4.12	6.93	6.05	1.95	0.88	2.09
1999-2009	0.53	3.31	7.12	3.95	-4.00	2.05
2009-2019	2.51	2.78	0.72	-3.99	2.04	1.81
By Era						
1848-1914	-0.17	4.26	2.98	2.03	1.25	1.59
1914-1945	-2.09	0.77	-3.45	-5.37	4.38	11.71
1945-1981	-3.80	0.60	0.54	2.02	0.06	3.73
1981-2019	5.65	8.26	5.86	1.87	2.27	2.40
To Present						
1899-1999	-0.86	2.93	0.26	-0.29	2.67	5.53
1839-2019	-0.22	3.5	2.08		1.39	3.74
1899-2019	-0.47	2.95	0.85	-0.25	2.08	4.92
1919-2019	0.72	4.16	2.53	0.62	1.59	4.28
1969-2019	2.76	6.08	4.54	2.21	1.47	3.55
1999-2019	1.52	3.04	3.87	-0.1	-0.8	1.93

Table 3.1. Returns in USD to Stocks, Bonds, Bills, ERP and Inflation, 1839 to 2019

3. Equity Risk Premium

Between 1839 and 2019, the Equity-Risk Premium was 3.74%. As Figure 3.3 illustrates, the ERP was positive about 70% of the time since 1900. The poor performance of the stock market during the 1930s is clearly visible. Bonds also outperformed stocks between the mid-1960s and early 1980s. Since 1950, equities have outperformed bonds in most years, and in those years when bonds outperformed stocks, the difference was relatively small. Since 2000 bonds have outperformed stocks during about half of the years. With both bond yields and cash yields close to zero, returns to fixed-income investors during the coming ten years are likely to be small. If equities provide a positive return, they will outperform bonds.

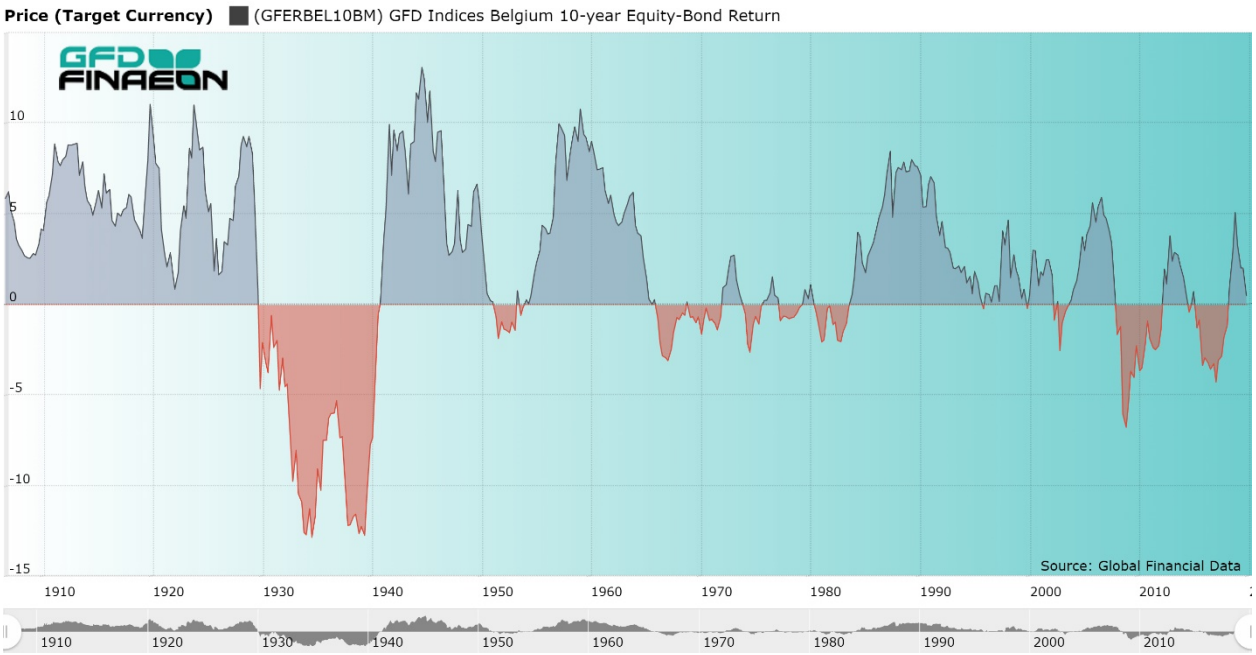

Figure 3.3. Belgium Equity Risk Premium, 1905 to 2019

4. Bull and Bear Markets

Table 3.2 provides a list of the bull and bear markets that have occurred in Belgium since 1831. By far, the worst bear market occurred between 1928 and 1935 when the stock market declined by over 80%. This decline was almost as severe as the decline in the S&P 500 between 1929 and 1932, but took place over a six-year period. The two bear markets in 1999-2003 and 2007-2009 both saw declines in the stock market of over 50%. The current bear market in Belgium began in 2015 and has lasted for over five years now. All of these are signs of the poor performance of Belgian equities.

For the most part, Belgian bear markets coincide with the bear markets that occurred in the rest of Europe, but the bear markets in Belgium usually last longer. The Belgian stock market remains below its peak in 2007. This fact only reinforces the fact that Belgium has been and remains a weak market for equities.

12/31/1831		12/31/1837	54.90
12/31/1848	-56.39	12/31/1873	152.91
12/31/1886	-41.76	3/31/1920	165.69
6/30/1921	-37.02	3/31/1924	167.54
8/31/1926	-49.53	6/30/1928	164.03
2/28/1935	-80.79	2/28/1937	114.75
11/30/1939	-51.91	8/31/1945	377.78
12/31/1948	-53.49	1/31/1964	246.96
1/31/1967	-31.41	6/30/1973	93.68
11/30/1976	-36.04	8/13/1987	303.88
12/18/1987	-35.49	1/12/1990	77.62
1/16/1991	-31.46	7/20/1998	274.69
10/5/1998	-29.42	1/6/1999	37.90

3/12/2003	-58.31	5/23/2007	245.23
3/3/2009	-64.45	5/2/2011	70.81
11/24/2011	-23.86	4/13/2015	104.31
3/18/2020	-48.04		

Table 3.2. Bull and Bear Markets in Belgium, 1831 to 2020

5. Stock and Bond Yields

Figure 3.4 illustrates the yield on Belgian Rentes in the 1800s and the 10-year bond in the 1900s. Although there was an increase in bond yields in 1848 to 7.8%, bond yields generally declined until the start of World War I in 1914. Inflation and economic hardship between 1914 and 1945 kept yields at moderate levels; however, yields increased between 1944 when yields were 3.65% and 1982 when yields peaked at 14.25%. Since 1982, yields have declined and by August 2019 had fallen to -0.38%. Although yields on Belgian bonds are currently positive, they remain close to zero. Yields are likely to remain under 1-2% for many years to come

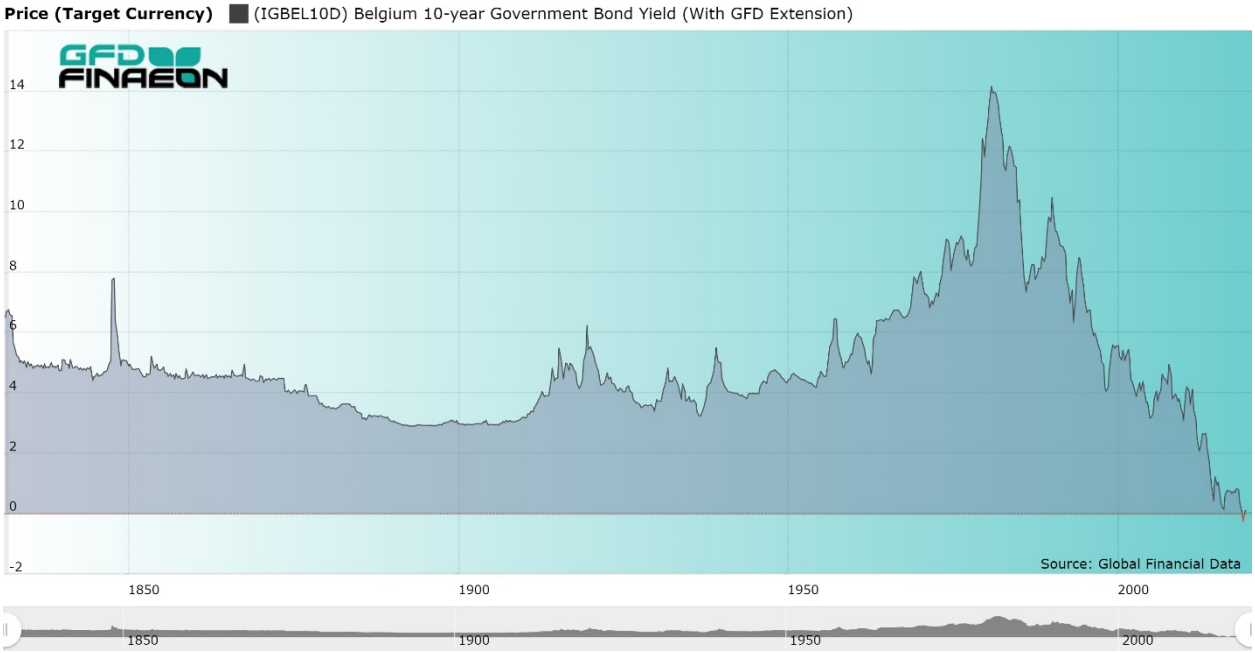

Figure 3.4. Belgium Yield on 10-Year Bond, 1832 to 2020

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There is no room for bond yields to decline in Belgium, but there is also little reason why bond yields should rise. The chance of inflation invading Belgium is small, and the economy remains too weak to generate growth that would push prices up. Bond yields should remain at the current level for some time to come.

Government bonds have provided a higher yield than stocks during most of Belgium's history. During the first two decades of Belgium's existence, in the 1830s and 1840s, Belgian government bond provided a higher yield than stocks. This pattern reversed itself until World War I, when the yield on government bonds exceeded the yield on stocks. With a couple of exceptions, this pattern continued

until the financial crisis of 2008. Only during the past decade has declining yields on government bonds enabled stocks to provide a higher yield than government bonds.

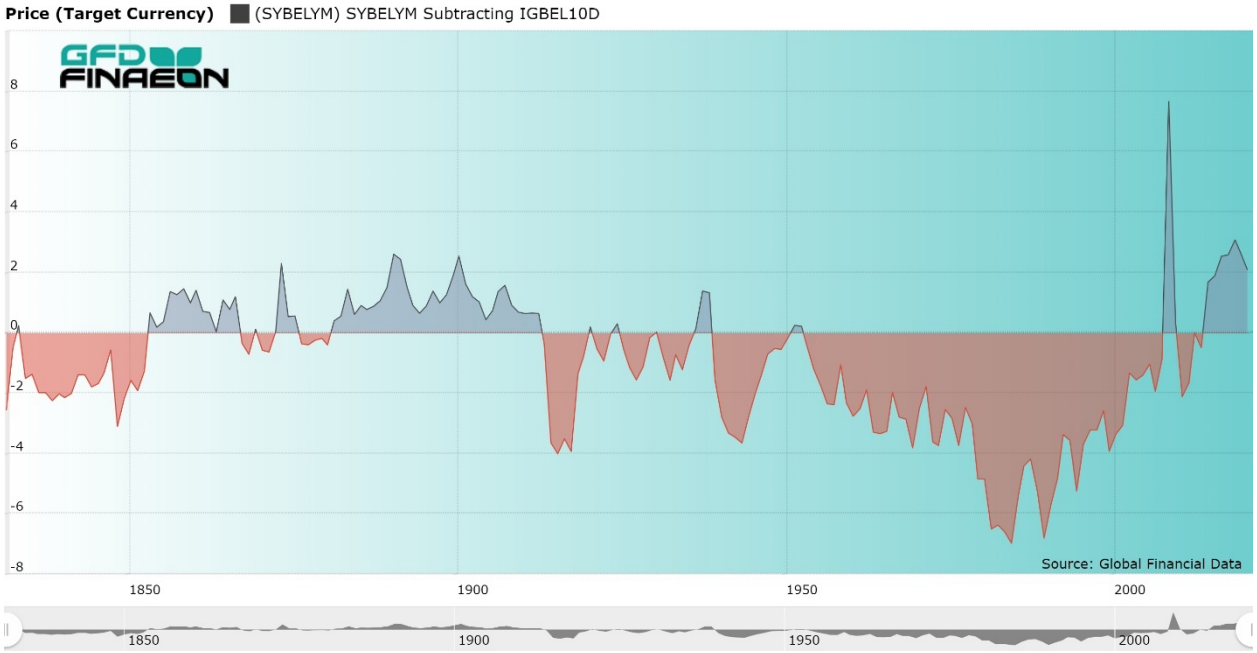


Figure 3.5. Belgium Stock Yield Minus Government Bond Yield, 1832 to 2020

6. Stock Market Capitalization and Government Debt Share of GDP

As Figure 3.6 illustrates, equities have always represented a small portion of GDP in Belgium. Unlike a country like Switzerland, most corporations primarily operate in Belgium and this has kept the MCAP/GDP ratio low. It steadily declined from over 100% in the 1920s to under 10% by 1980. Government debt, though modest, exceeds market cap by default. Although the ratio of government debt to GDP fell between 1944 and 1980, the market capitalization of equities fell even faster. Like most countries, Belgium saw an increase in the market capitalization in the 1980s, but it seems to have stabilized at around 50% of GDP. Many European countries have MCAP/GDP ratios that are closer to 100%. Government debt is around 80% of GDP. The size of government debt has been greater than market capitalization since the 1930s which is generally a sign of a weak equity market.

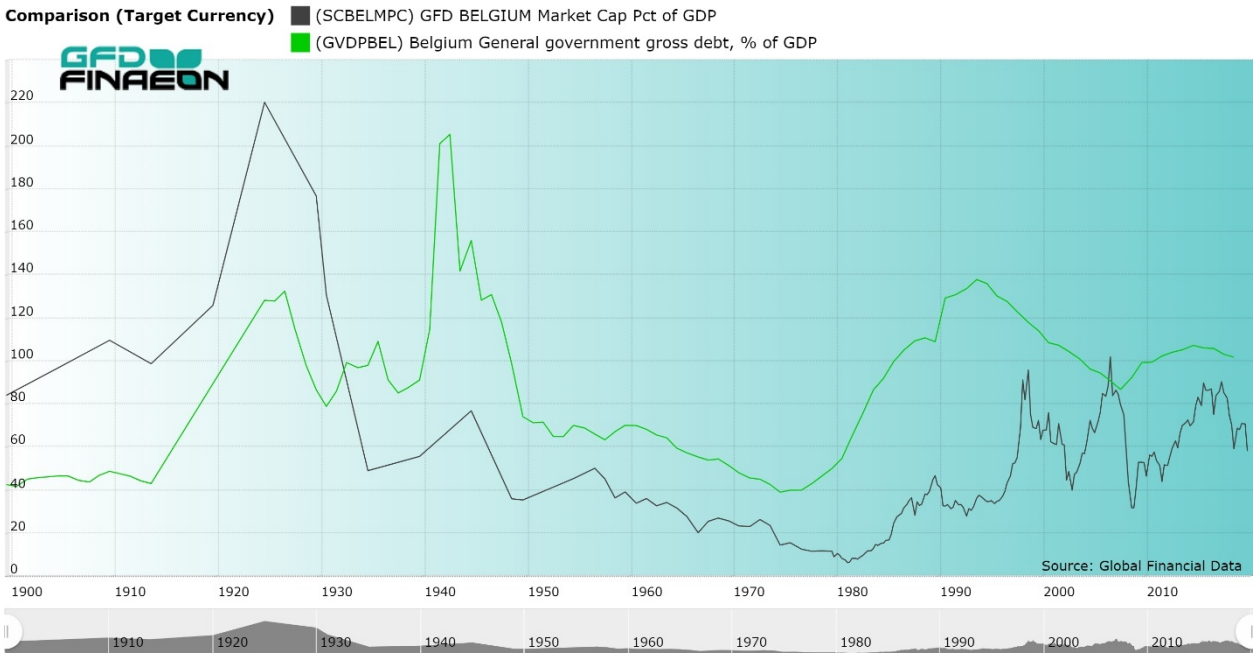


Figure 3.6. Belgium Market Cap and Government Debt as a Share of GDP, 1900 to 2019

7. Exchange Rate

The exchange rate between the Belgian Franc/Euro and the United States Dollar is provided in Figure 3.7. All of the depreciation in the Franc occurred between 1914 and 1948 when Belgium was overrun by Germany in its fight against France. The Belgian Franc was tied to the French Franc before World War I with about 5 Belgian Francs equal to 1 US Dollar. This rate rose to about 50 to 1 after World War II where it remained until currencies floated in 1972. The Belgian Franc joined the Euro in 1999 at about 40 to 1.

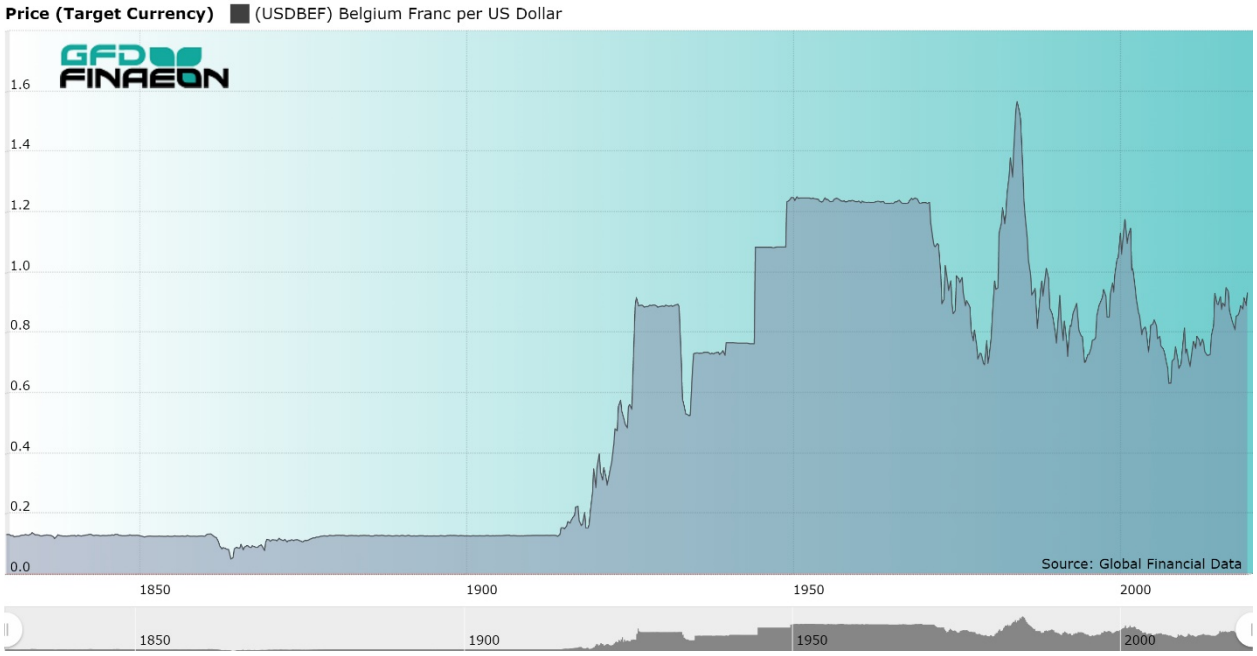


Figure 3.7. United States Dollar – Belgian Franc/Euro Exchange Rate, 1831 to 2019

8. Conclusion

Belgium has an interesting financial history. After Belgium gained its independence in 1831, the country's equity and bond markets were quite large. Finance and trams, though not railroads, needed equity capital and hundreds of firms listed on the Brussels stock exchange. The Belgian Franc was tied to the French Franc and France provided a ready market for Belgian stocks and bonds. However, Belgium suffered from invasion by Germany during both World War I and World War II. The stock market closed during both wars. Inflation rose and the economy stagnated. Although Belgium recovered from World War II, the country has never had the entrepreneurial environment it needed to grow. Companies can locate in Paris and be more successful than they could be in Brussels. Consequently, Belgium has suffered from low growth which is reflected in the relatively poor performance of its stock market. Politically, the country is torn between the Flemish and the French portions of the country and Belgium often lacks political direction. Belgium remains a regional market with few growth opportunities. There is little reason to expect that Belgium will provide superior returns in the 2020s.

Canada

1. Sources

Canada has one of the ten stock largest markets in the world. With a capitalization of over $2 trillion and over 3300 listed companies, Canadian companies have played an important role in the global economy over the past 150 years. Canadian companies have listed in London since 1692 when shares in the Hudson Bay Co. started trading, and in New York since the 1860s. Brokers began trading shares at the Exchange Coffee House in Montreal in 1832, and the Montreal Stock Exchange was founded in 1874. The Toronto Stock Exchange was begun by the Association of Brokers in 1852, was formally founded in 1861 and incorporated in 1878.

After World War I, larger Canadian companies listed on the New York Curb and shares were readily available to American investors. Canada's market capitalization was the third largest in the world in 1950 after the U.S. and the U.K. European exchanges had shrunk in size as a result of World War II and the nationalizations that followed the war. After the war, oil and mining companies explored Canada allowing the stock market to grow even larger.

Until the 1930s, the Montreal Stock Exchange was the larger and more important of the two Canadian exchanges, but with the political problems of the 1960s and 1970s, including the adaptation of French as the official language in Quebec, more and more of the trading moved to Toronto. In the 1980s, Montreal became a derivative exchange and in 2008, the Montreal Exchange was formally acquired by the TSX Group. Two Canadian companies, the Canadian Pacific Railroad and International Nickel were included in the Dow Jones Averages from the 1930s to the 1980s. Today, the Royal Bank of Canada is the largest company on the Toronto Stock Exchange.

GFD's index of Canadian stocks relies on stocks that listed in London, New York, Toronto and Montreal. The index relies upon GFD's index of Canadian companies that are in our database from 1824 until 1914. The Dominion Bureau of Statistics calculated indices for Canada beginning in 1914. This source was used from 1914 until 1955. Data from the Toronto Stock Exchange is used beginning in 1956 and in 1977, the TSX-300 index replaces the Toronto indices.

Canadian bonds traded in London beginning in 1853. Bonds were originally issued at 6%, but bond coupons declined over time until they hit 2.75% in the 1930s. Quotations for bonds quoted in Canada begin in 1919. 10-year bonds are used beginning in 1949. The bill index uses data on private bills traded in either the United States or Canada beginning in 1900 and uses Canadian T-bills beginning in 1934.

2. Returns to Stocks, Bonds and Bills

Table 4.1 provides data on returns to different asset classes in Canada over different periods of time. As the data shows, over the past 190 years, stocks have returned 7.38% per annum, with 3.04% in capital gains. Since 1853, stocks returned 7.55% and bonds 5.39% with an inflation rate of 1.87%.

During the twentieth century, returns to stocks, bonds and bills in real USD were 5.82%, 1.78% and 1.14% respectively. So far, during the twenty-first century, these returns have been 4.59, 3.58% and 0.45% respectively. Figure 4.1 shows the performance of stocks in Canada from the 1820s until 2019.

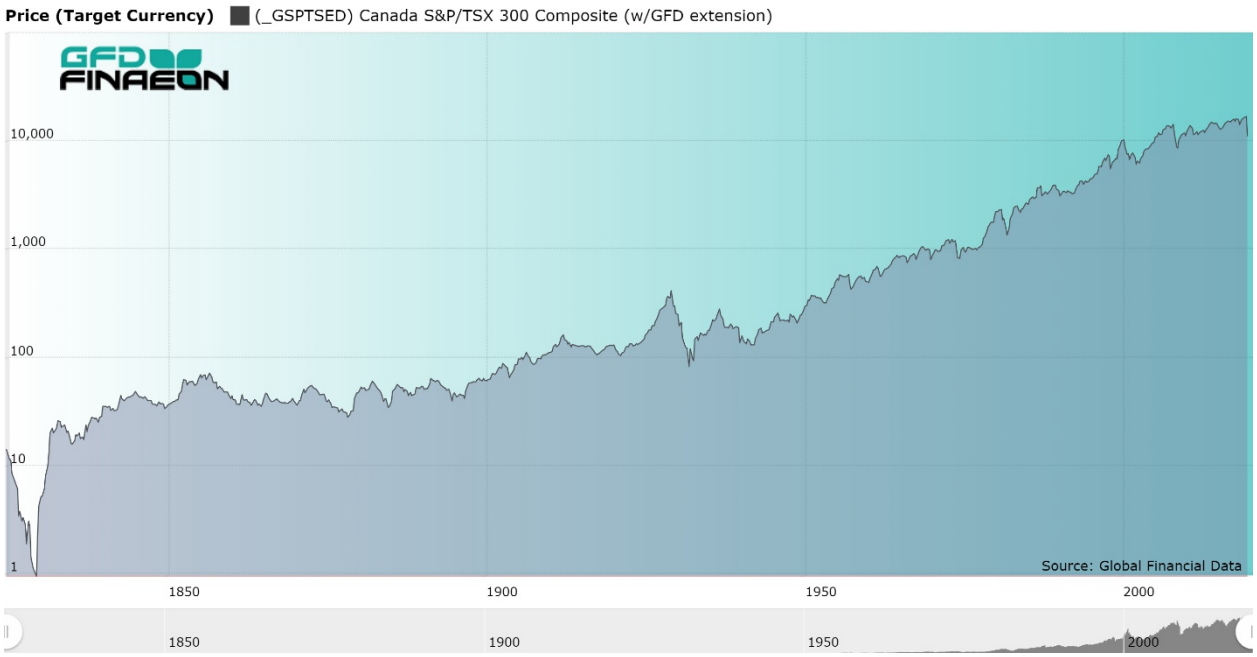


Figure 4.1. Canada Stock Price Index, 1824 to 2019

If you compare returns in Canada with the United States, you find returns in Canada are slightly lower than returns in the United States. This is primarily because of the greater reliance on resources in the Canadian economy compared with the American economy, and the lower returns they have provided relative to industrial and technology stocks.

Returns to stocks were consistently around 5% after inflation in each of the four eras; however, returns to bonds varied widely. While both bonds and bills returned less than inflation between 1945 and 1981, they both had positive returns between 1981 and 2019. In fact, bonds outperformed stocks between 1981 and 2019. The ERP was 6.49% between 1945 and 1981, but -0.05 between 1981 and 2019.

The best decades for stocks were the 1920s and 1950s during which stocks provided a double-digit return. The 1910s provided the worst returns and was the only decade during which equities provided a negative return.

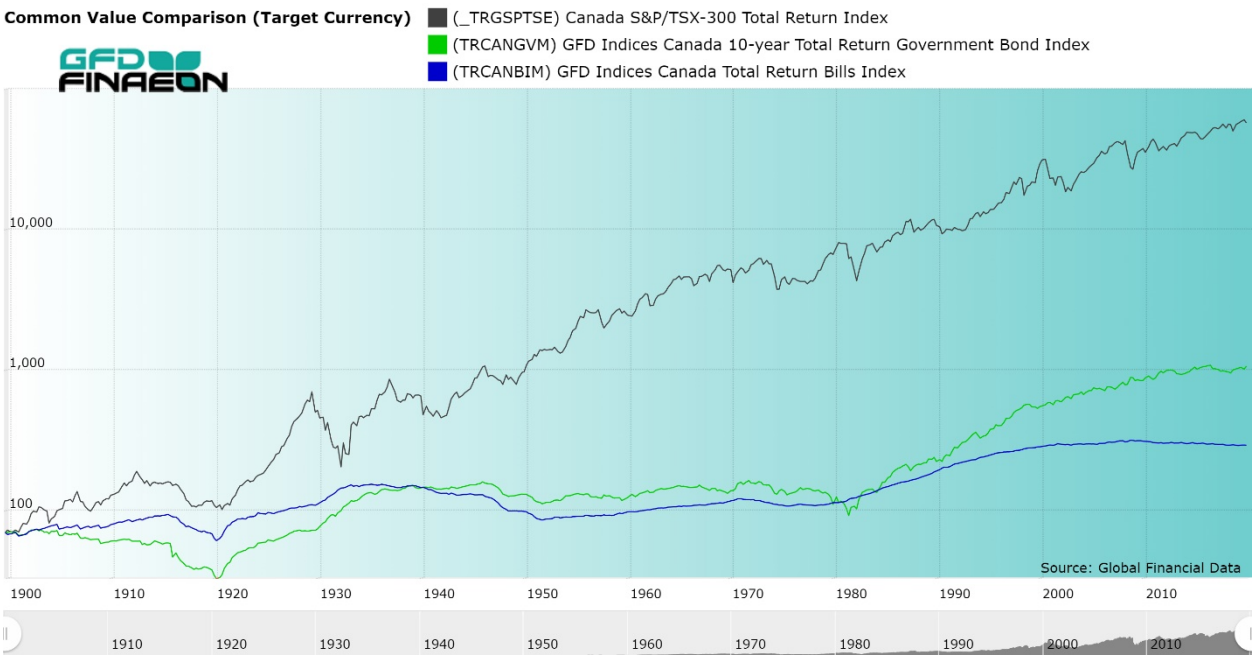


Figure 4.2. Canada Returns to Stocks, Bonds and Bills, 1900 to 2019

Figure 4.2 compares the returns to stocks, bonds and bills since 1900. Stocks are far and away the best performers. After adjusting for inflation, neither bonds nor bills provided any return between 1940 and 1980. Canada has not suffered from any destruction from wars or faced the problems of nationalization. While thousands of banks went bankrupt in the United States in the 1930s, no banks went bankrupt in Canada during the 1930s. Two Canadian companies, International Nickel and the Canadian Pacific Railway were included in the Dow Jones Averages in the past. During the 1950s, Canada was among the three largest stock markets in the world. Because Canada has had a stable economic and political environment, stocks have done well. Canada will continue to do well in the future.

Years By Decade	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
1839-1849	5.76	12.87				-3.64
1849-1859	1.03	3.12				4.18
1859-1869	-5.98	-2.94	0.73	0.81	-3.66	-4.38
1869-1879	2.95	8.45	8.72	6.5	-0.25	-1.71
1879-1889	2.29	6.03	6.54	3.04	-0.48	0.28
1889-1899	1.41	5.95	3.13	2.19	2.73	-1.26
1899-1909	3.18	7.39	0.06	2.71	7.32	4.06
1909-1919	-5.62	-1.95	-6.05	-2.87	4.36	6.35
1919-1929	10.43	16.47	7.47	5.53	8.36	-0.85
1929-1939	-3.23	2.06	6.29	2.25	-3.98	-1.84
1939-1949	-2.72	2.94	-1.72	-4.63	4.74	4.54

1949-1959	7.66	12.57	0.91	1.48	11.55	2.41
1959-1969	2.43	6	-0.07	0.76	6.08	2.65
1969-1979	-2.16	1.99	-1.32	-0.92	3.36	7.55
1979-1989	2.98	6.87	8.02	6.51	-1.07	6.23
1989-1999	2.44	5.05	5.15	1.08	-0.10	2.10
1999-2009	4.11	6.33	7.51	3.79	-1.10	2.05
2009-2019	-0.11	2.87	-0.21	-2.79	3.09	1.74
By Era						
1848-1914	0.84	4.77				0.14
1914-1945	-0.29	5.11	2.24	0.19	2.81	1.30
1945-1981	1.1	5.4	-1.02	-0.1	6.49	4.93
1981-2019	2.86	5.73	5.79	1.98	-0.05	2.58
To Present						
1899-1999	1.43	5.82	1.78	1.14	3.98	3.28
1829-2019	3.04	7.38		2		1.57
1899-2019	1.52	5.61	2.08	1.02	3.45	3.73
1919-2019	2.09	6.22	3.13	1.25	3.00	3.60
1969-2019	1.42	4.61	3.76	1.48	0.81	2.94
1999-2019	1.97	4.59	3.58	0.45	0.97	2.57

Table 4.1. Canada Returns to Stocks, Bonds, Bills, ERP and Inflation, 1829 to 2019

3. Equity Risk Premium

The Equity-Risk Premium for Canada is provided in Figure 4.3. There are many similarities between the United States and Canada, although the ERP is weaker in Canada than in the United States. The ERP was consistently negative during the 1980s, 1990s and 2000s. Although the stock market in Canada was much weaker in the 2010s than in the United States, the bond and bill markets were even weaker. Bonds outperformed bonds in the early 1920s, 1930s and late 1970s. Since 1990, there have been more years in which bonds outperformed stocks than vice versa.

Bonds outperforming stocks is unlikely to occur in the coming decade, primarily because the yields on both bonds and cash are so low that barring a bear market throughout the decade of the 2020s, equities will outperform bonds and bills.

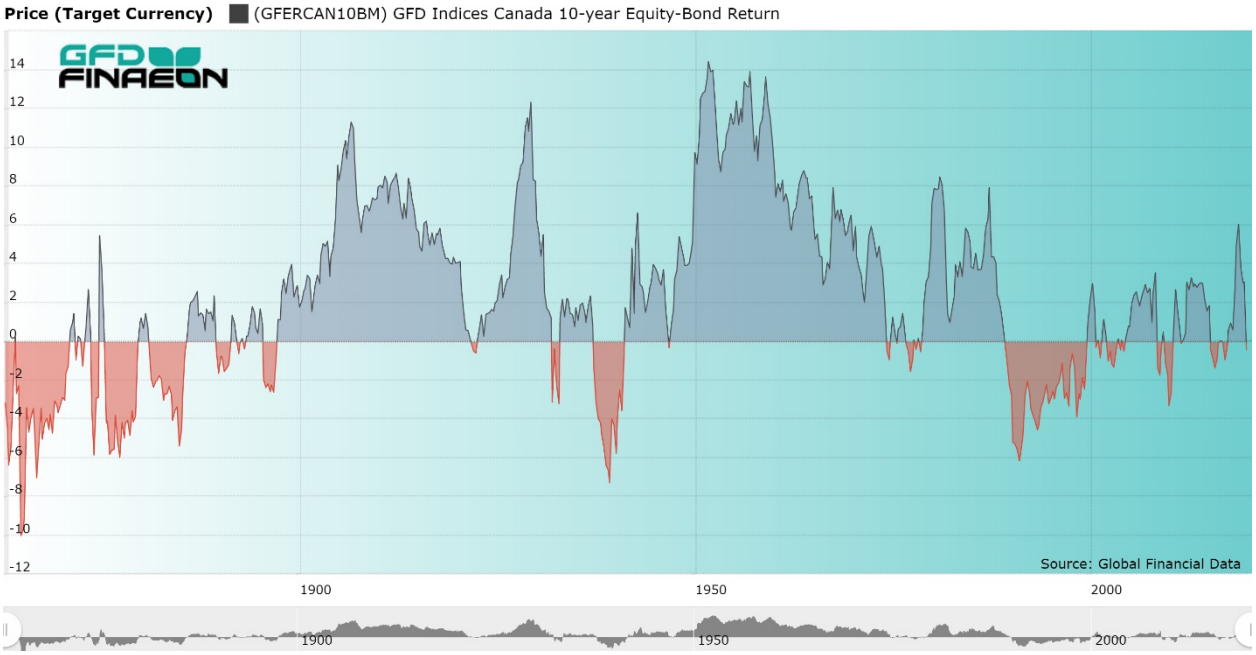


Figure 4.3. Canada 10-year Equity Risk Premium, 1860 to 2019

4. Bull and Bear Markets

By our count, Canada has gone through 24 bear markets during the past 194 years. Although the first bear market was the worst, with the market declining 95%, this primarily resulted from the limited number of stocks in the index. Canada Company stock declined from 35 in March 1825 to 1.5 in December 1829 and rose to 50 by June 1832. Canada suffered a decline similar to the United States after 1929 with the Canadian market declining 80% between September 1929 and June 1932. It should also be noted that the two declines in 2000 and 2008 were the worst bear markets in Canada since the 1930s. Canada had two bear markets in 2011 and 2014 which did not occur in the United States, primarily as a result of weak returns to resource stocks. A history of the bull and bear markets in Canada since 1825 is provided in Table 4.2.

Date	Bear Loss	Date	Bull Gain
11/30/1835	-41.90	06/30/1845	218.22
02/28/1850	-31.30	09/30/1855	107.96
02/28/1865	-49.85	04/30/1873	59.35
12/31/1878	-49.50	10/31/1882	123.99
04/30/1885	-45.89	12/31/1891	88.73
03/31/1895	-38.07	2/28/1903	136.61
3/31/1904	-30.61	2/28/1907	68.52
2/29/1908	-24.37	9/30/1912	95.52
8/31/1921	-36.18	9/30/1929	299.80
6/30/1932	-80.10	3/31/1937	240.72
4/30/1942	-54.48	4/30/1946	104.74
6/30/1949	-20.38	7/31/1956	193.18

12/31/1957	-30.04	5/16/1969	161.75
6/30/1970	-28.32	10/26/1973	62.71
12/6/1974	-37.76	11/28/1980	192.56
7/8/1982	-43.95	8/13/1987	205.48
10/28/1987	-31.00	10/6/1989	42.29
10/16/1990	-25.46	4/22/1998	159.88
10/5/1998	-31.78	9/1/2000	113.43
10/9/2002	-49.99	5/20/2008	164.20
3/9/2009	-49.71	4/5/2011	88.59
10/4/2011	-21.67	9/3/2014	40.08
1/20/2016	-24.36	2/20/2020	51.52
3/16/2020	-37.43		

Table 4.2. Bull and Bear Markets in Canada, 1835 to 2020

Although there are strong differences in the timing of bull and bear markets in the United States and Canada in the 1800s, as the 1900s progress, the correlation between the American and Canadian market increases. There is very little difference in the timing of bull and bear markets in the 2000s, only a difference of degree.

5. Stock and Bond Yields

A history of the yields on Canadian government bonds is provided in Figure 4.4. Yields on bonds that listed in London are used in the 1800s and domestic Canadian bonds in the 1900s. Yields generally declined to 1900, rose during World War I and peaked in 1919 at 5.72%. Rates then declined until 1947 when bond yields hit a low of 2.55%. Bond yields then steadily rose, hitting 17.66% in 1981 and remained in double digits during most of the 1980s. Since 1990, bond yields have steadily declined, hitting a low of 0.53% in March 2020. This path is very similar to what occurred in the United States during the same period of time. Bond yields are likely to remain below 2% and possibly below 1% for some years to come so fixed-income investors are unlikely to receive much of a return during the coming decade.

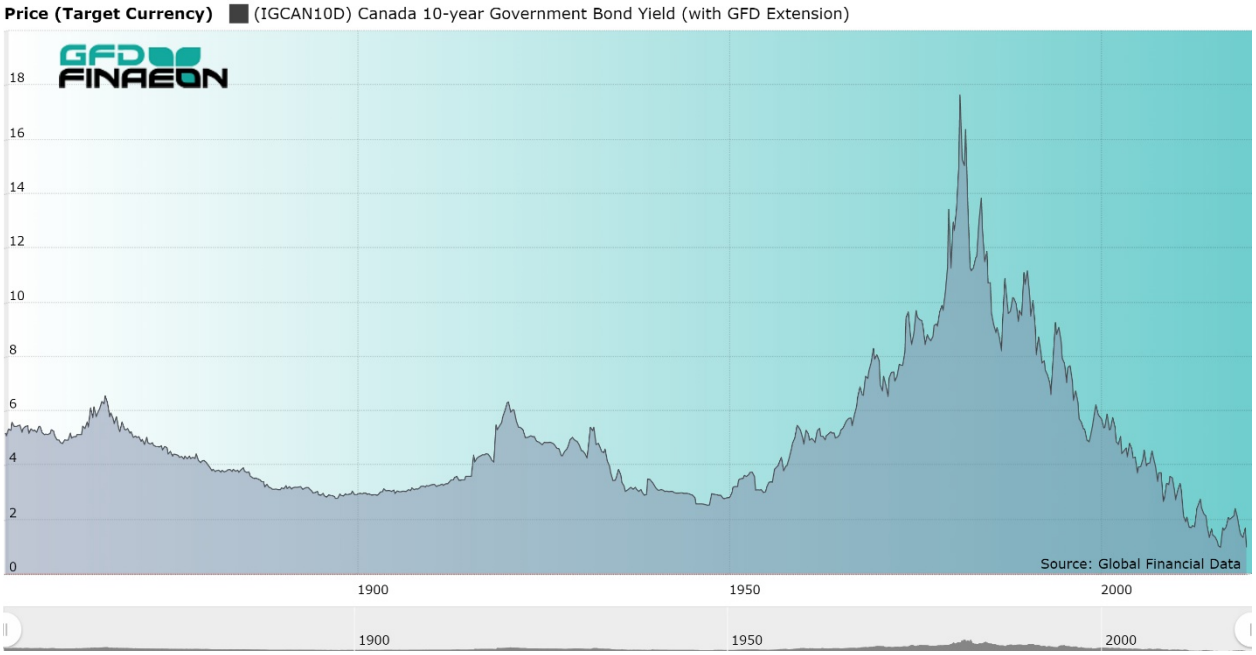
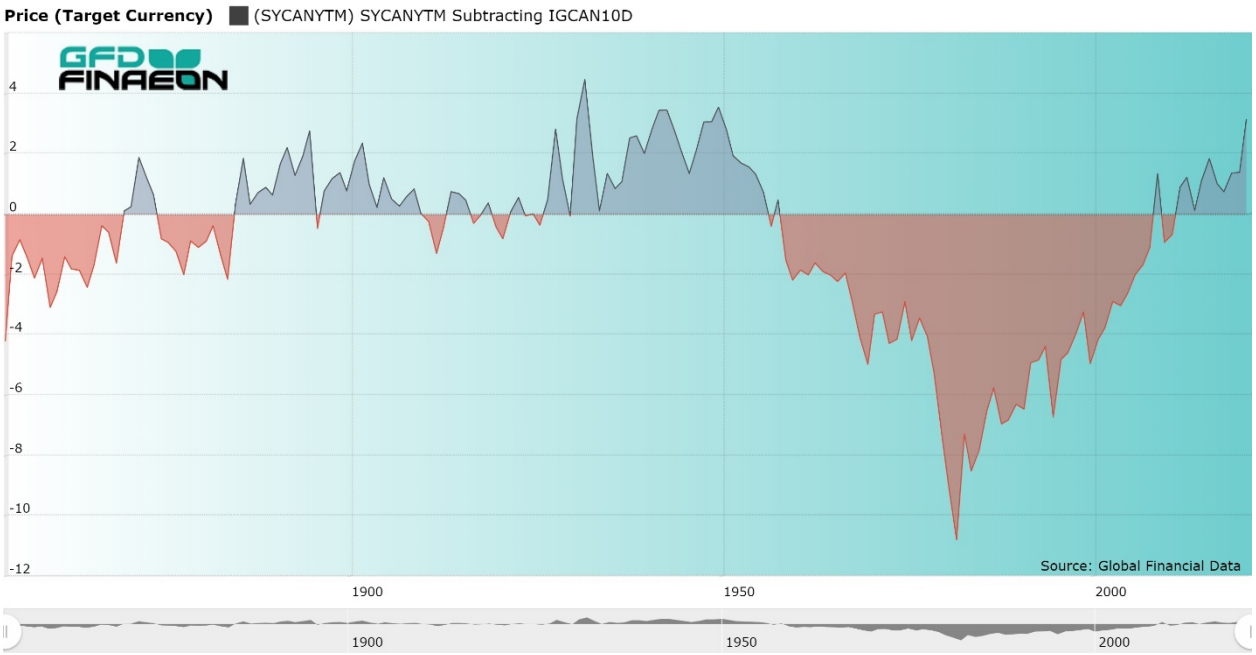


Figure 4.4. Canada 10-year Government Bond Yield

There have been two main periods when the yield on Canadian government bonds exceeded the yield on stocks. The first occurred at the beginning of Canada's history in the 1860s and 1870s. Yields were approximately the same between 1914 and 1925 with some brief periods when government bond yields slightly exceeded stock yields. The second occurred during the dramatic rise and fall in government bond yields between the late 1950s and the financial crisis in 2008 when government bond yields fell to historic lows. With government bond yields currently below 1%, stock yields are likely to exceed government bond yields for some years to come.



4.5 Canada Dividend Yield Minus Government Bond Yield, 1870-2020

6. Stock Market Capitalization and Government Debt Share of GDP

The market capitalization and government debt as a share of GDP in Canada is illustrated in Figure 4.5. Because of the proximity of the Canadian market to the United States and the opportunity to invest in resource stocks, Canada's market cap as a share of GDP has been relatively high during the past 100 years. The MCAP/GDP ratio exceeded 10% in both 1929 and 1937. After World War II, Canada had one of the largest stock markets in the world with the market cap exceeding GDP. The market capitalization declined into the 1970s, but has generally risen since 1980. Today, the market cap once again exceeds GDP. Finance and resource stocks have driven the high level of GDP in Canada.

Canada borrowed heavily during World War I and World War II and Canadian government debt as a share of GDP exceeded 150% by the end of World War II. Thence the Government Debt/GDP ratio declined to around 20% in 1980. It rose quite dramatically during the next 20 years leading to a funding crisis in the 1990s, but the government debt/GDP ratio has been stable during the twenty-first century. The MCAP/GDP ratio now exceeds the Debt/GDP ratio rather than vice versa as occurred in the 1990s.

The Canadian budget has been balanced during the past 20 years, and it seems unlikely that debt will explode in the same way it did in the 1980s and 1990s. It seems unlikely that government bonds will prevent capital from flowing into stocks in the coming decade.

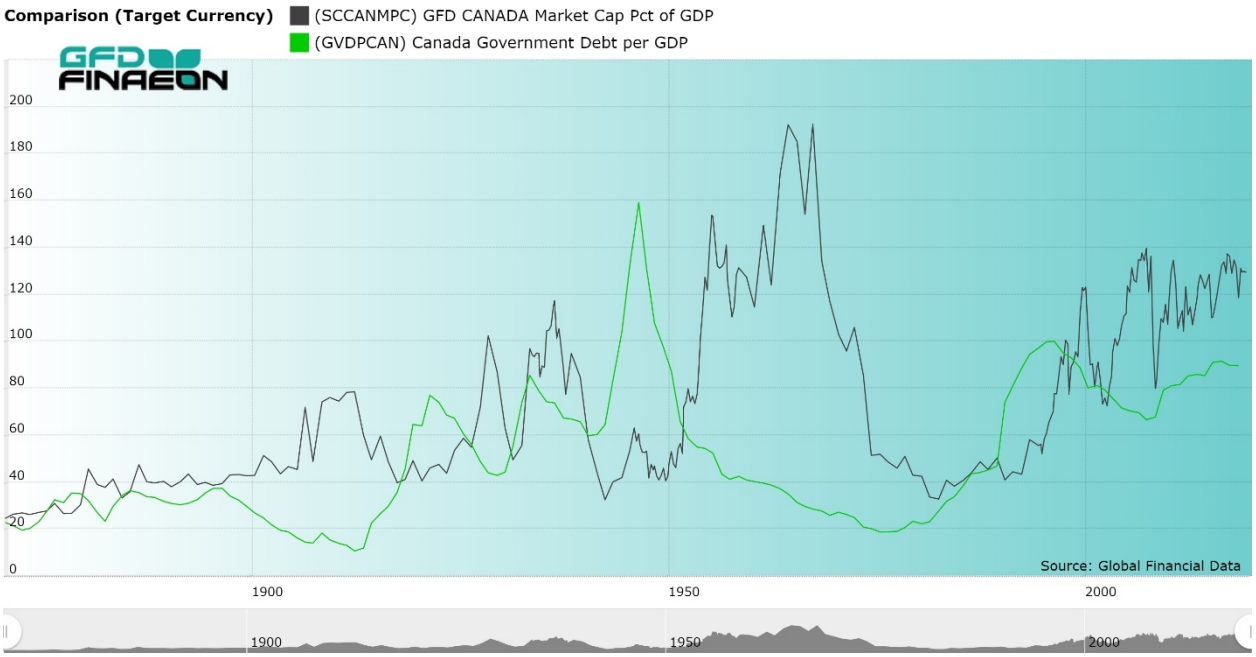


Figure 4.6. Canada Stock Market Cap and Government Debt as a share of GDP, 1870 to 2019

7. Exchange Rate

The Canadian Dollar was introduced in 1858 and traded at par with the United States Dollar until Canada went off the Gold Standard in 1933. The United States Dollar has generally traded at a premium to the Canadian Dollar, but similar inflation rates in the United States and Canada have kept the premium to a minimum as can be seen in Figure 4.6.

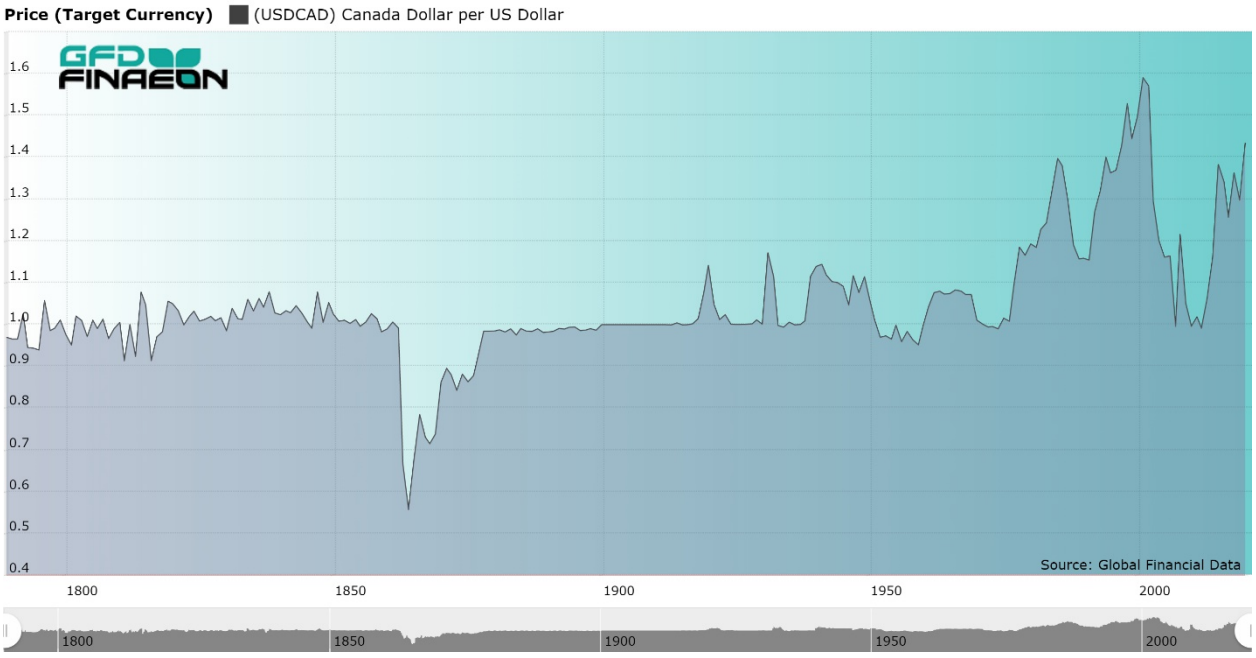


Figure 4.7. United States Dollar – Canada Dollar Exchange Rate, 1792 to 2020

8. Conclusion

The Canadian economy is tied directly to the American economy. Canada will always be dependent upon the U.S. economy for its growth. Twenty percent of Canada's GDP comes from exports to the United States. Canadian stocks have listed in the United States since the Civil War because the United States is a good source of capital for Canadian companies and has provided a liquid resource for Canadian stocks over the past 150 years. Canadian oil and mining stocks have provided investment opportunities to American speculators during the past 100 years.

Although Canada has produced stock indices since World War I, data on performance before World War I has been lacking. After GFD put together its indices for Canada, we found is that especially since the 1870s, there has been a strong correlation between stock and bond returns in Canada and the United States. This should come as no surprise given how integrated the two economies are.

Returns in Canada are more stable than returns in the United States. Canada hasn't had a decade with a negative return during the past 100 years. Although US Stocks provided a double-digit return in the 2010s, they provided negative returns in the 2000s. Consequently, Canadian stocks have provided a higher rate of return in the twenty-first century than the United States (4.59% vs. 3.02%). Canada depends little on information technology and biotech companies that can provide high rates of growth, but relies more upon resource stocks that provide a more steady source of growth to investors.

Denmark

1. Sources

Global Financial Data collected share price data on individual companies that was provided in Green's *Fog et Aktier* and Statistiske Department's *Statistisk Arbog*. This enabled us to create cap-weighted indices for Denmark from 1873 to 1920 based upon shares that traded on the Copenhagen Stock Exchange. Denmark introduced stock exchange indices in 1921. Denmark's indices were revised in 1960, 1983 and 2001. Daily indices are now calculated by the Copenhagen Stock Exchange. The Danish stock market in modest in size at around $400 billion representing over 100 companies.

Danish government bonds traded in Amsterdam in 1788 and GFD has collected data on Danish government bond yields since then, using bonds that traded in both London and in Copenhagen. The 3% Rente that traded in London is used until 1869 and the Danish 3.5% Rente which traded in Copenhagen is used beginning in 1886. The 10-year bond yield is used currently. The Central Bank's Discount Rate was used to calculate cash returns from 1864 to 1976 and the yield on 3-month Treasury Bills from 1977 to date.

2. Returns to Stocks, Bonds and Bills

The price index for Danish stocks since 1873 is provided in Figure 5.1. As can be seen, there was almost no change in the price of Danish stocks between 1873 and 1950. With the exception of the 1910s, when a bubble in shipping stocks drove the price of Danish stocks upward, the ERP was negative in every decade before 1950. It is only in the 1970s that Danish stocks began providing a positive capital appreciation Before 1950, all of the return to shareholders came through dividends, not through capital appreciation. Only after World War II did Danish stocks appreciate in price. Consequently, as can be seen in Figure 5.2, stocks have underperformed both bonds and cash throughout most of Denmark's history, but have improved since World War II ended. Although stocks underperformed bonds between 1914 and 1945, since 1945, the ERP has been about 2.50%, which is low when compared to the United States or other countries. Stocks have done well since 1981 and returned 9.83% in real US Dollars, one of the highest rates of any country in our survey. Bonds performed similarly well, returning 7.16%.

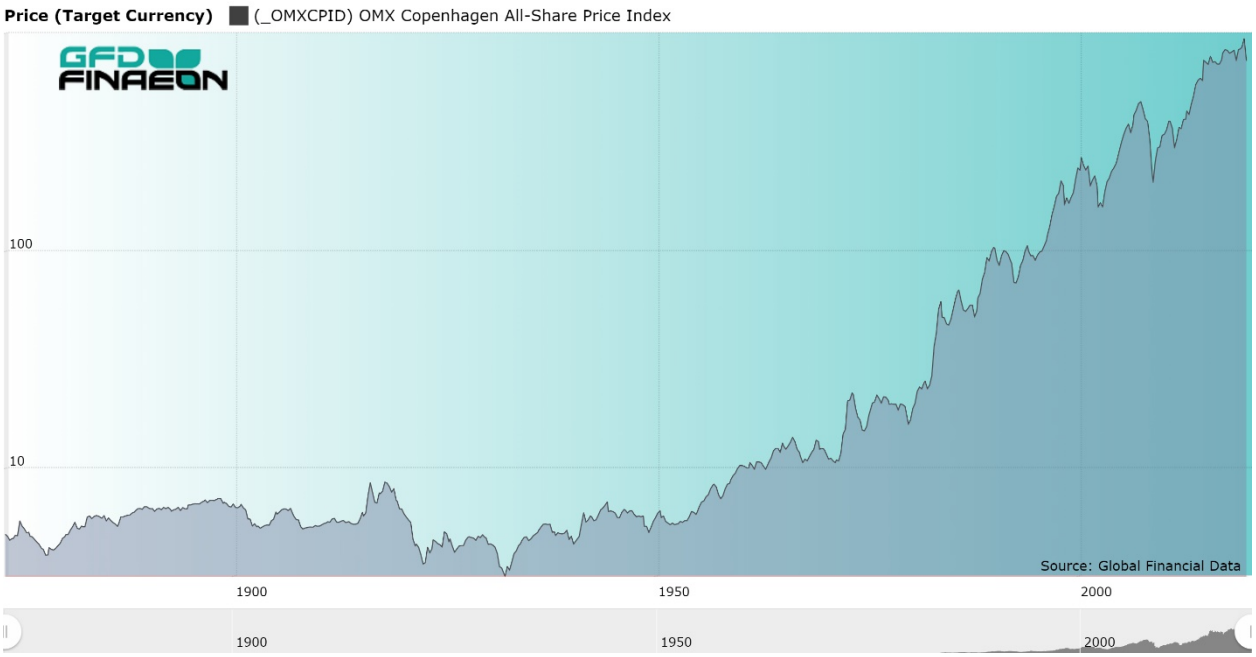


Figure 5.1. Denmark Stock Price Index, 1873 to 2019

Although Denmark is not part of the Euro, its currency is linked to the Euro at the rate of 7.47 Krone to the Euro. This means that Denmark's bond yield and interest rates are similar to those in Germany. Consequently, bond and bill yields in Denmark are negative or close to zero meaning that as in the Euro area, fixed income will receive little return in the 2020s. Stocks are likely to outperform bonds and bills as long as Denmark can avoid being in a bear market in the current decade.

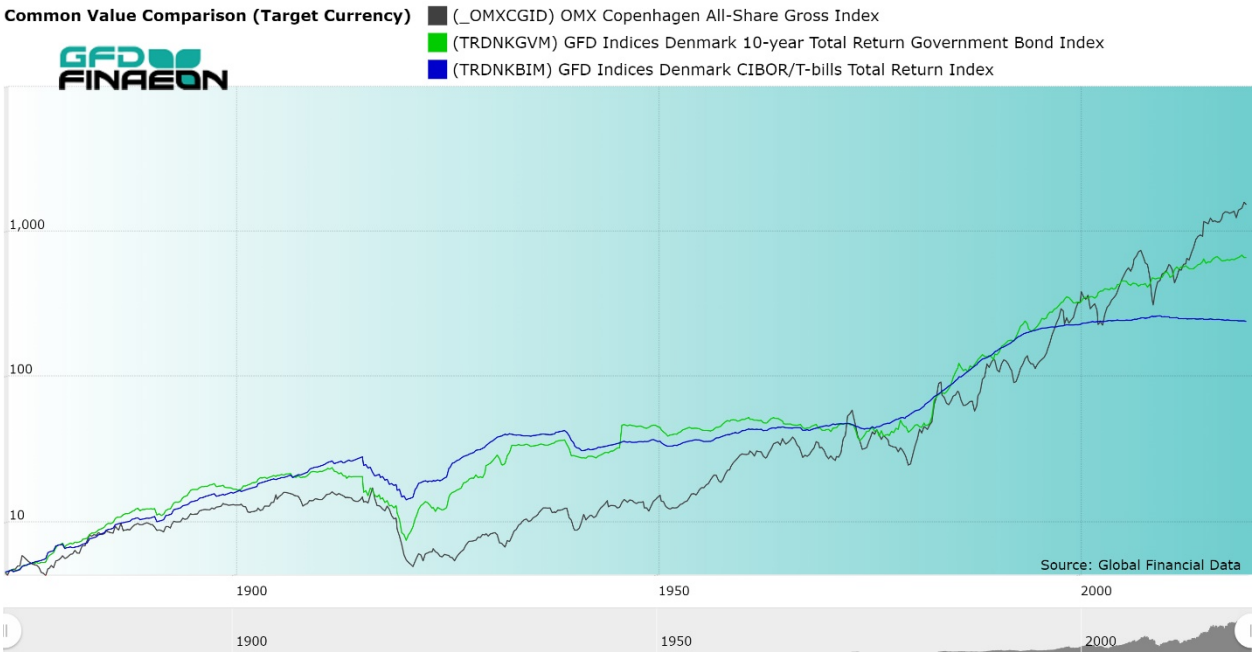


Figure 5.2. Denmark Returns to Stocks, Bonds and Bills from 1873 to 2019

Years	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
By Decade						
1879-1889	3.39	4.75	4.97	3.61	-0.21	-0.58
1889-1899	-0.2	2.59	3.08	3.87	-0.47	-0.12
1899-1909	-4.19	-0.31	1.32	2.79	-1.61	1.05
1909-1919	-8.49	-7.55	-9.06	-5.31	1.66	9.1
1919-1929	1.51	3.81	11.52	10.8	-6.90	-0.95
1929-1939	-1.45	3.45	4.67	2.5	-1.16	1.89
1939-1949	-2.49	2.45	3.6	-0.77	-1.11	4.39
1949-1959	-0.25	4.85	-1.48	-1.12	6.43	3.8
1959-1969	-1.16	3.89	0.71	3.21	3.16	5.56
1969-1979	0.12	3.9	6.09	7.21	-2.06	9.57
1979-1989	10.4	15.41	10.86	9.42	4.11	6.47
1989-1999	3.68	6.65	6.79	2.85	-0.13	2.06
1999-2009	4.6	7.82	7.22	4.57	0.56	2.00
2009-2019	7.49	9.86	0.21	-3.79	9.62	1.19
By Era						
1914-1945	-2.27	1.09	2.9	2.21	-1.75	3.95
1945-1981	-1.75	3.76	1.24	1.78	2.50	6.05
1981-2019	7.41	9.83	7.16	3.63	2.49	2.47
To Present						
1899-1999	-0.34	3.52	3.34	3.05	0.18	4.24
1899-2019	0.69	4.38	3.39	2.59	0.96	3.80
1919-2019	2.17	6.14	4.94	3.39	1.16	3.56
1969-2019	5.2	8.66	6.18	3.95	2.34	4.21
1999-2019	6.04	8.83	3.66	0.3	5	1.59

Table 5.1. Denmark Real Returns to Stocks, Bonds, Bills, ERP and Inflation, 1879 to 2019

3. Equity Risk Premium

Because of the poor performance of equities before 1950, bonds outperformed bills over 10-year periods in the majority of years before 1950. Since 1950, with the exception of the 1980s and 1990s, stocks have generally outperformed bonds. This is illustrated in Figure 5.3. Denmark has a small, open economy with few international companies that can generate growth. During World War I, Denmark was neutral and shipping stocks went through a bubble that collapsed after World War I concluded. Today, Novo-Nordisk represents about one-third of the stock market, but there are few other international companies that could provide growth in the same way that Switzerland does. Healthcare represents about half of the total market capitalization of the country.

With bond yields and cash paying negative returns, it is unlikely that fixed-income investors will receive a high return in the decade to come. Government debt is less than 40% of GDP so bond yields are likely to remain low. The ERP will probably remain positive in the decade to come.

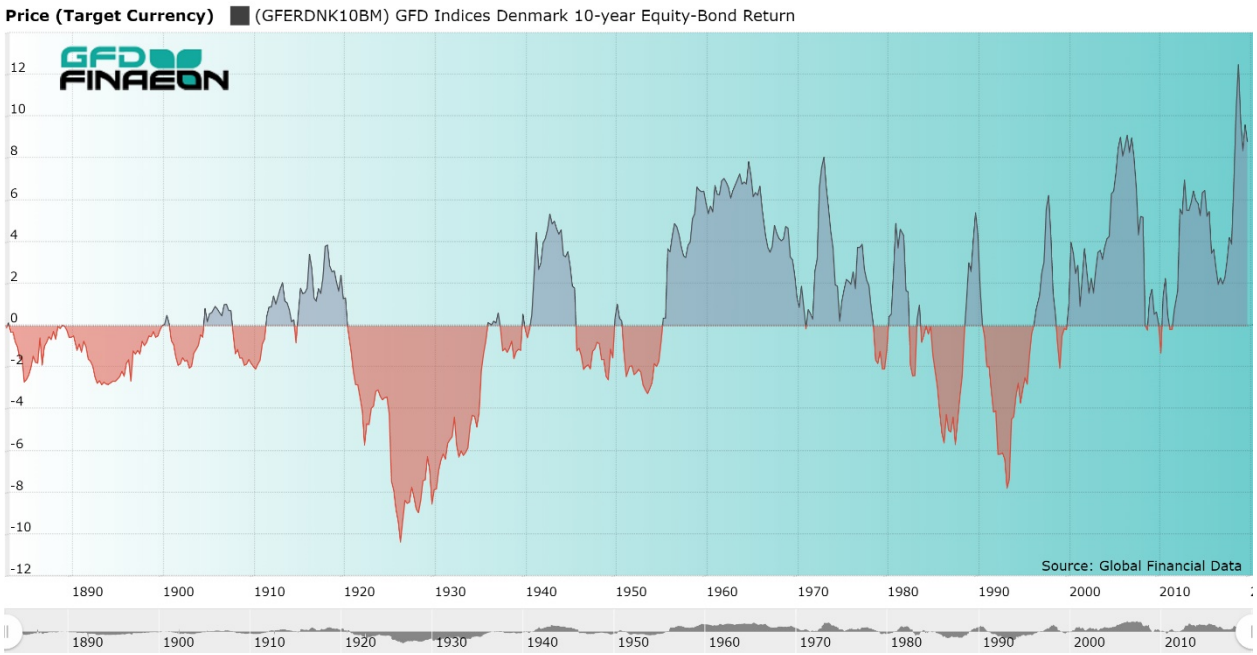


Figure 5.3. Denmark Equity Risk Premium, 1883 to 2019

4. Bull and Bear Markets

A table of Bull and Bear Markets in Denmark is provided in Table 5.2. The two worst bear markets were the bear markets in the 1920s and in 2007. Denmark did not participate in the bull market of the 1920s because shipping stocks went through a huge bull market until 1918. The market declined into the 1920s and never recovered. The market continued its decline until it bottomed in 1932 showing a total decrease of 63%. The decline between 2007 and 2009 was 62%, almost as bad as the decline in the 1920s and 1930s. Most of the other declines were relatively small, if only because the gains were relatively modest as well.

Month	Decrease	Month	Increase
		1/31/1875	21.69
1/31/1878	-29.88	9/30/1918	430.14
4/30/1932	-63.84	5/31/1944	123.24
6/30/1949	-28.08	7/31/1966	179.73
11/30/1971	-25.9	8/31/1973	115.25
11/30/1974	-38.22	7/31/1976	60.43
3/5/1980	-30.64	1/20/1984	294.22
1/8/1985	-29.65	4/18/1986	58.23
11/20/1987	-28.37	8/2/1990	114.35
10/28/1992	-34.94	4/6/1998	211.18
3/15/1999	-26.32	10/6/2000	80.32
3/12/2003	-48.46	10/11/2007	246.57
3/9/2009	-62.06	1/18/2011	113.3
9/23/2011	-31.07	2/19/2020	267.6

3/18/2020 -26.05

Table 5.2. Denmark bull and Bear Markets, 1875 to 2020

5. Stock and Bond Yields

Information on Danish government bond yields is provided in Figure 5.4. As can be seen the yield on bonds was fairly consistently around 4% from 1788 until 1950. The primary exception to this rule was the Napoleonic Wars when Denmark was in default on its bonds, not paying any interest. Bond Yields went over 10% in 1812. During World War I inflation drove bond yields up to 6.57% in 1920, then gradually declined until 1946.

Like every country in Europe, Denmark began its interest rate pyramid in 1946 when bond yields were only 3.51%. Yields continued up until 1982 when they hit 23.48%, among the highest rates in all of Europe. Yields remained in the double digits during the rest of the 1980s and then declined until 2019 by which time yields had fallen to -0.28%. It seems unlikely that bond yields are likely to remain under 1-2% for the rest of the decade.

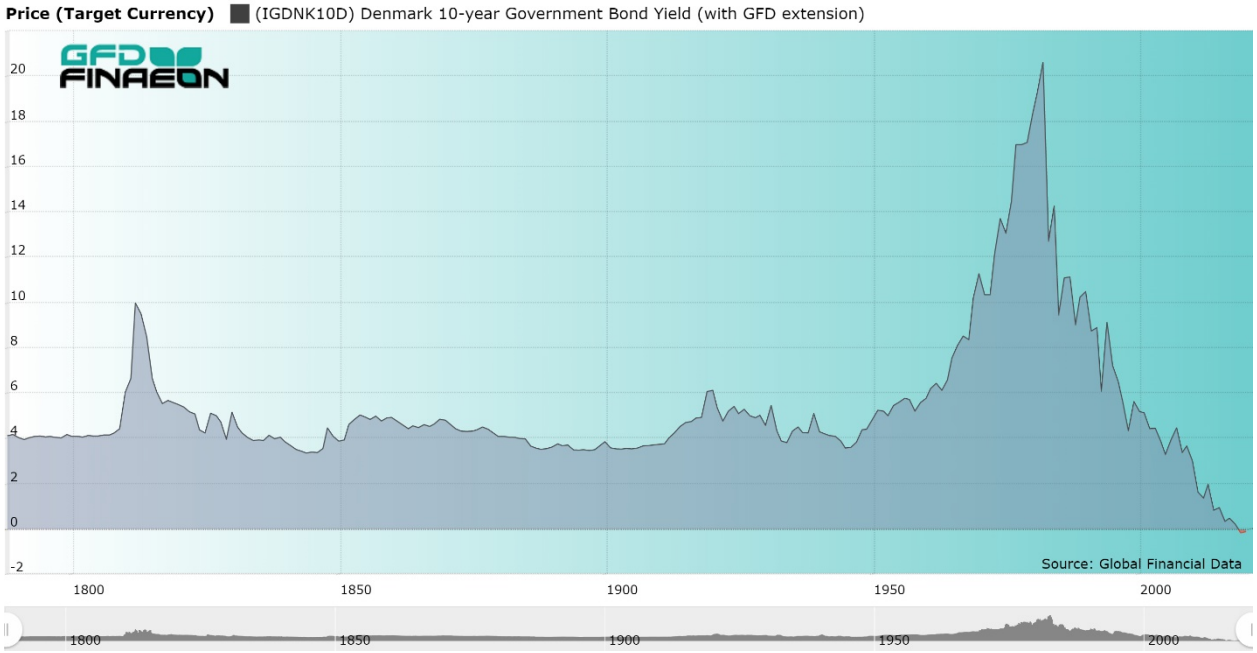


Figure 5.4. Denmark Yield on 10-Year Government Bonds, 1788 to 2019

Unfortunately, stock yield data is not available for Denmark in the 1940s, 1950s and 1960s. However, using what data we do have, it can be seen that the pattern for Denmark follows that of other countries with the yield on stocks exceeding the yield on government bonds until the 1950s, the yield on government bonds exceeding the yield on stocks during the period of high bond yields between the late 1950s and 2008, and then a return to the yield on stocks exceeding the yield on bonds after 2008. With government bond yields below 1% or negative in Denmark today, the yield on stocks is likely to exceed the yield on bonds for some years to come.

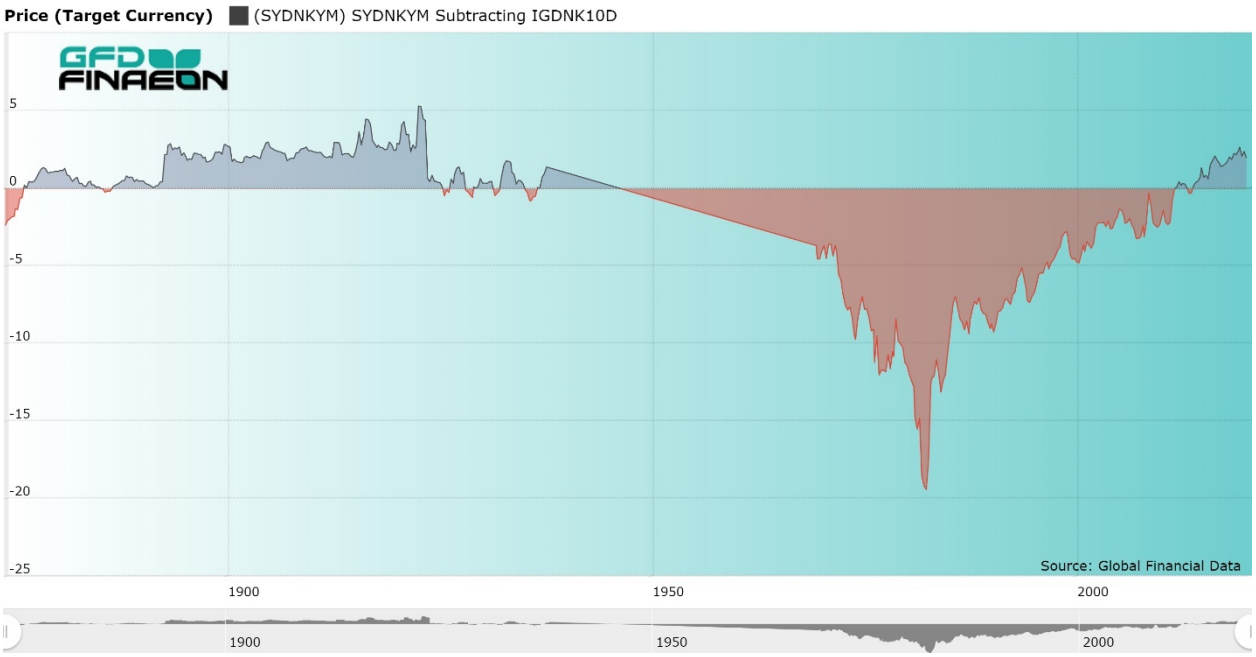


Figure 5.5. Denmark Stock Yield Minus Government Bond Yield, 1873 to 2020

6. Stock Market Capitalization and Government Debt Share of GDP

Both market capitalization and government debt have been low in Denmark through most of its history. Market cap was between 20% and 40% of GDP until the 1980s. During the inflation of the 1970s, the market cap sank to around 10%. Since then, the market cap rose steadily until it exceeded 100% of GDP in the 2010s. Novo-Nordisk represents over one-third of the capitalization of the Danish stock exchange.

Government debt was even less than market cap until the 1970s, falling to less than 10% of GDP. There was a rapid increase in government debt during the 1980s, it stabilized in the 1990s and has declined during the twenty-first century. The government debt/GDP ratio is now about 40%, quite low by comparison with many other countries.

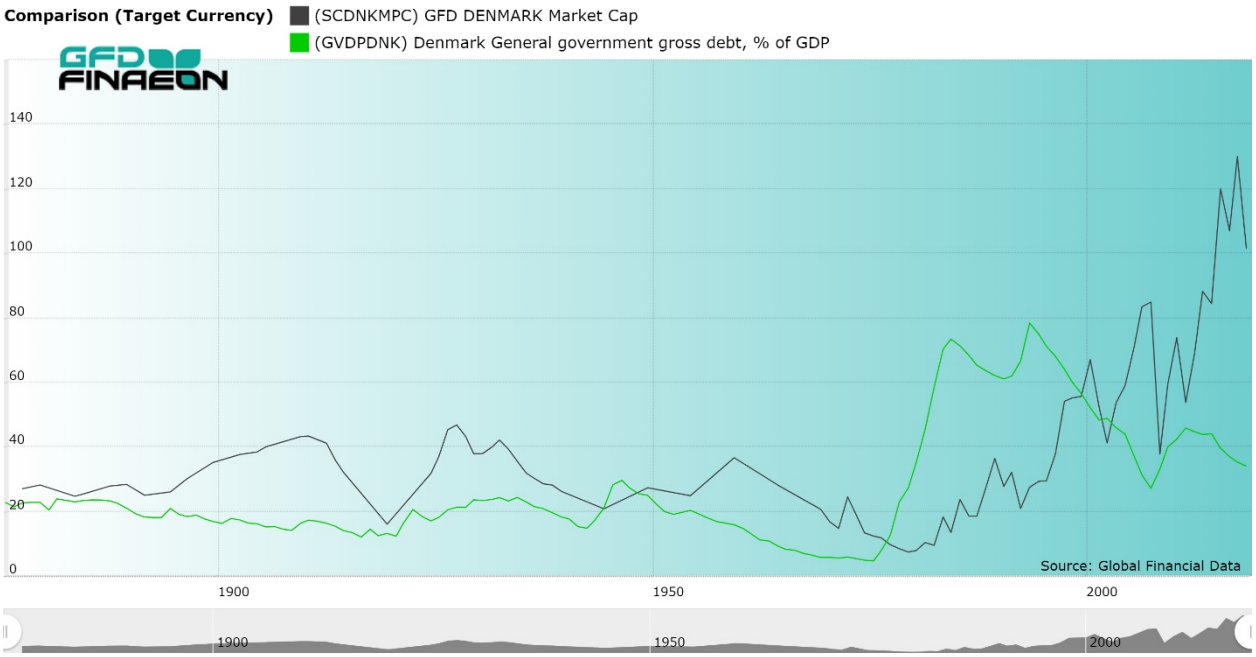


Figure 5.6. Denmark Market Cap and Government Debt as a Share of GDP, 1875 to 2019

7. Exchange Rate

Figure 5.7 provides a graph of the exchange rate between the United States Dollar and the Danish Krone between 1813 and 2019. During most of the 1800s, the exchange rate between the Krone and US Dollar was about 4 to 1 and rarely changed until World War I. After World War II, the exchange rate jumped to 7 to 1 and has stayed around that level since then. Although the Krone is independent of the Euro, the exchange rate between the two currencies is tied at about 7.47 Krone to the Euro. This exchange rate is likely to remain fixed for the rest of the decade.

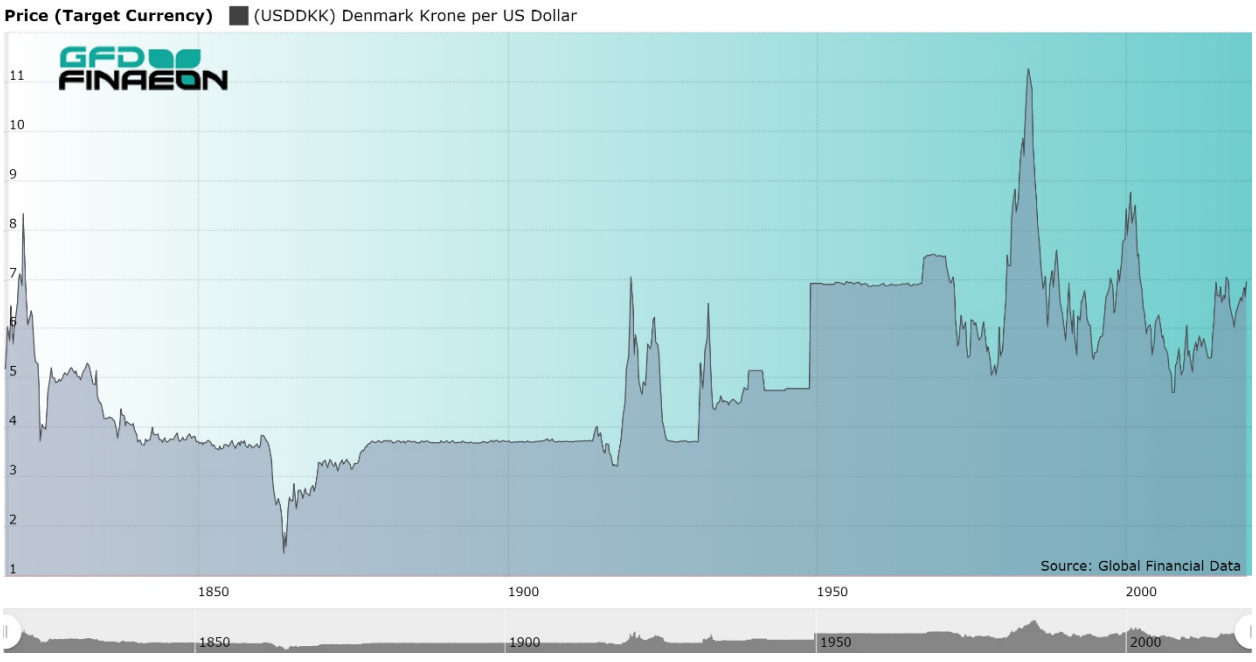


Figure 5.7. United States Dollar – Denmark Krone Exchange Rate, 1813 to 2019

8. Conclusion

Denmark is a small country, but has an investible market capitalization that is not much smaller than either Spain or Italy. The stock market had little growth until 1950 and it has really grown since 1980. Since 1981, stocks have returned 9.83% in real US Dollars. Novo-Nordisk represents over one-third of the country's stock market capitalization and the Danish stock market's future growth is dependent upon the performance of this company. Yields on bonds and bills are both under 1%, so there is little chance of a high return to fixed-income investors in the coming decade. How well the country's financial markets will do depends upon Novo Nordisk and other companies that drive the Danish economy.

France

1. Sources

Along with Germany and the United Kingdom, France has been one of the most important financial markets in Europe. During the past two centuries, Paris has challenged London for the financial supremacy of Europe, but has failed to supplant London as the financial center of Europe. In part, this is because of the antipathy of many of the French to capitalism and financial markets. The French stock market was closed during the French Revolution and French stocks performed poorly during the inflation of the mid-twentieth century. French stocks made a remarkable recover at the end of the twentieth century, but have performed poorly during the twenty-first century. Euronext Paris lists over 700 companies with a total stock market capitalization of over $2 trillion.

The Compagnie des Indes traded in Paris between 1718 and 1793 providing an investment vehicle for traders in Paris, Amsterdam and London. The Banque de France started trading in 1801 and in the 1830s, France began building railroads that stretched out from Paris to the rest of the country. France showed good growth between the 1840s and 1880s, but between the 1880s and 1980s, there was little return to equity shareholders. The index is based upon the Compagnie des Indes in the 1700s and the Banque de France from 1801 to 1841. Most French railroads traded in London between 1841 and 1900 and the index is based upon shares that traded in Paris and in London. The INSEE calculated stock indices through the 1950s and beginning in the 1960s, indices calculated by the Paris Stock Exchange are used.

France has a long history of government bonds stretching back to the 1300s. Bond yields steadily declined from the 1400s to the 1700s. France defaulted on its bonds during the Franco-Spanish War in the 1650s and the Napoleonic Wars in the 1790s. Fixed-income investors received one-third of a new bond for each old bond as a way of reducing the level of outstanding debt. Rentes yielding 3% or 5% were the benchmarks for France between 1800 and the 1970s. Bond yields hit peaks in 1848, during World War I, during World War II and during the inflation of the 1970s and 1980s. All of these inflations reduced returns to fixed-income investors who lost ground to inflation during the 1900s. Banque de France Discount Rates and the yield on private bills is used between 1800 and 1930 and the yields on Treasury bills since 1930.

2. Returns to Stocks, Bonds and Bills

Figure 6.1 provides a graph of returns to French equities from 1719 until 2019. Data for the 1700s is based upon data for one company, the French East India Co. (Compagnie des Indes) which performed relatively well during the 1700s until the French Revolution ,when the government forced all private companies to disband. Data from 1801 to 1841 use shares of the Banque de France exclusively. The Banque performed well until the 1830s when railroads were built in France. After the crash of 1848 during which stocks dropped in price by over 50%, the market made a remarkable recovery, rising over 700% between 1848 and 1856. The French stock market made a more steady recovery between 1856 and 1914 when World War I upended French financial markets.

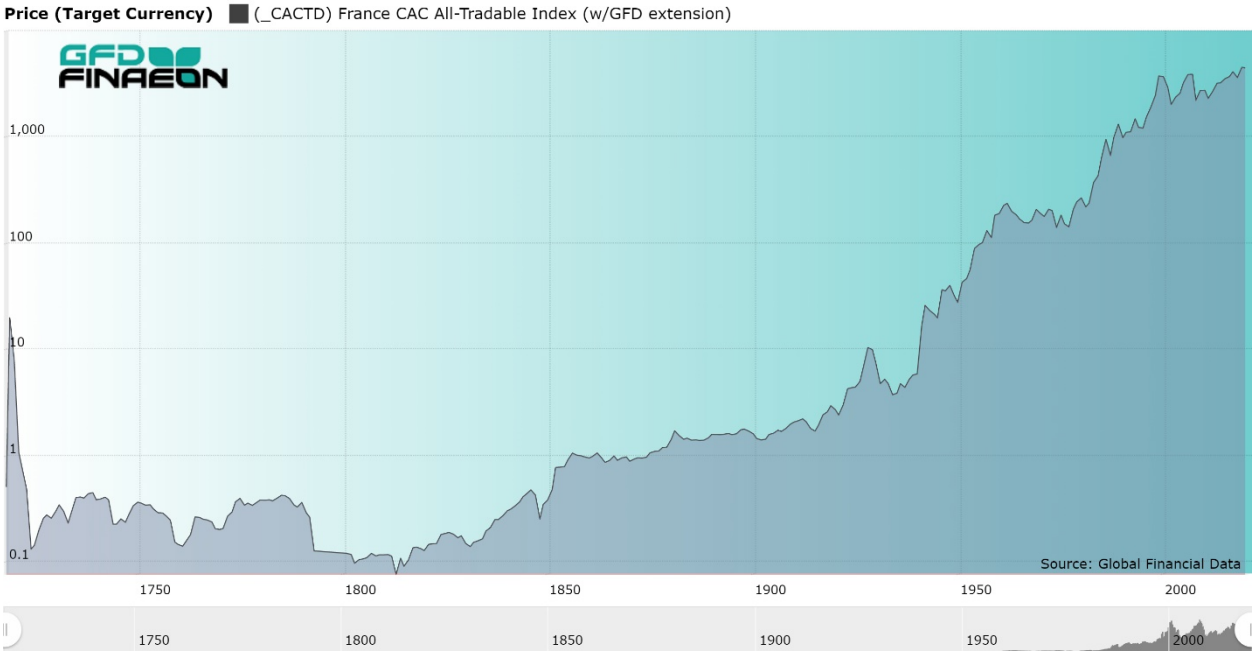


Figure 6.1 France CAC All-Tradeable Price Index, 1719 to 2019

Between 1848 and 1914, stocks rose on average by 6.89% per annum and bonds rose 3.59% per annum in real US Dollars. This is higher than the 5.33% that US equity investors received between 1848 and 1914. However, between 1914 and 1981, equity returns in France were inferior. Equities returned only 1.57% in real US Dollars between 1914 and 1945 and lost 0.53% between 1945 and 1981. Both bonds and cash lost money in real US Dollars during both 1914 and 1945 and between 1945 and 1981. Stocks lost over 36% per annum during the 1960s in real US Dollars. France's policies of inflating their way out of debt and nationalizing basic industry were harmful to investors.

Real Returns to Stocks, Bonds and Bills in USD

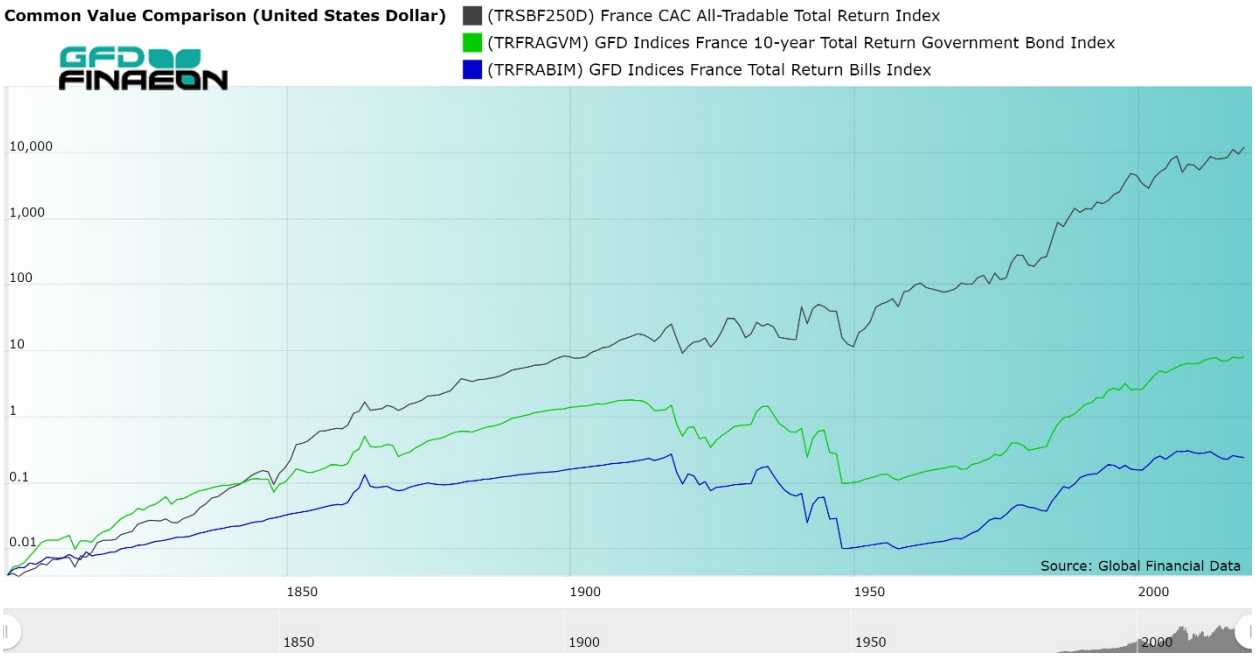


Figure 6.2. France Returns to Stocks, Bonds and Bills in US Dollars, 1800 to 2019

Under Mitterand, the economy was privatized and French stocks had a remarkable recovery between 1981 and 1999. Equities posted double digit returns between 1980 and 1999, but have only returned 2.51% in real US Dollars in the twenty-first century. Bonds provided high returns between 1980 and 2009 as bond yields dropped 17.32% in 1981 to 3.04% in 2005; however, bond yields were below 2% during most of the 2010s reducing the returns to fixed-income investors.

Returns to Stocks, Bonds and Bills Table

Years By Decade	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
1800-1809	1.23	4.69	15.05	6.58	-9.94	0
1809-1819	-1.15	7.28	3.35	1.59	3.80	0.00
1819-1829	5.14	9.81	14.45	6.44	-4.06	0.00
1829-1839	2.43	7.28	1.92	2.07	5.25	0.37
1839-1849	5.23	10.04	3.12	6.96	6.71	0.37
1849-1859	9.36	15.14	5.41	2.83	9.22	0.5
1859-1869	-2.28	3.41	2.66	1.21	0.73	0.71
1869-1879	2.53	8.17	6.43	4.02	1.63	0.44
1879-1889	2.04	6.36	4.53	2.79	1.75	-0.12
1889-1899	1.38	6.04	4.26	2.08	1.72	-0.21
1899-1909	-0.85	3.19	0.67	0.16	2.50	0.33
1909-1919	-10.08	-6.57	-14.47	-9.96	9.23	11.84
1919-1929	4.86	8.56	0.37	-3.2	8.17	7.98
1929-1939	-8.72	-4.98	0.13	-1.2	-5.11	2.95
1939-1949	-8.28	-6.71	-20.61	-21.37	17.51	32.37

1949-1959	12.65	17.28	-0.3	-1.98	17.62	5.64
1959-1969	-38.45	-36.47	0.46	-36.58	0.22	3.91
1969-1979	-2.2	2.75	2.07	4.87	0.67	9.17
1979-1989	8.6	11.89	5.28	2.38	6.28	6.91
1989-1999	6.56	9.69	5.72	2.36	3.76	1.82
1999-2009	-2.07	0.76	6.98	3.95	-5.82	1.71
2009-2019	0.84	4.29	0.41	-3.99	3.86	1.13
By Era						
1848-1914	1.93	6.89	3.59	2.08	3.19	0.32
1914-1945	-1.81	1.57	-4.71	-6.11	6.59	12.16
1945-1981	-4.26	-0.53	-6.27	-5.36	6.12	9.97
1981-2019	5.38	8.5	6.06	1.93	2.29	2.32
To Present						
1800-1899	2.54	7.78	6.03	3.63	1.66	0.21
1899-1999	-4.76	-1.36	-2.43	-7.41	5.86	7.97
1800-2019	-1.13	3.07	1.89	-1.87	3.30	3.80
1899-2019	-4.08	-0.73	-1.44	-6.23	4.67	6.85
1919-2019	-3.78	-0.51	-0.25	-6.46	4.44	7.04
1969-2019	2.25	5.79	4.06	1.86	1.66	4.10
1999-2019	-0.63	2.51	3.64	-0.1	-1.09	1.42

Table 6.1. France Real Returns to Stocks, Bonds, Bills, ERP and Inflation, 1879 to 2019

3. **Equity Risk Premium**

The 10-year equity-risk premium in France during the past 100 years is illustrated in Figure 6.3. France has had a larger than normal number of periods during which bonds outperformed stocks, primarily because of the poor performance of equities. Equities outperformed bonds in the 1940s because inflation reduced the return to bonds. The post-World War II recovery and the Mitterand bull market of the 1980s provided high returns to equity shareholders, but during the remaining years, there have been almost as many years in which the equity-risk premium was positive as negative. As in most of the Euro area, bond yields should remain below 2% for the rest of the decade, so if France enjoys a bull market, the equity-risk premium should be positive.

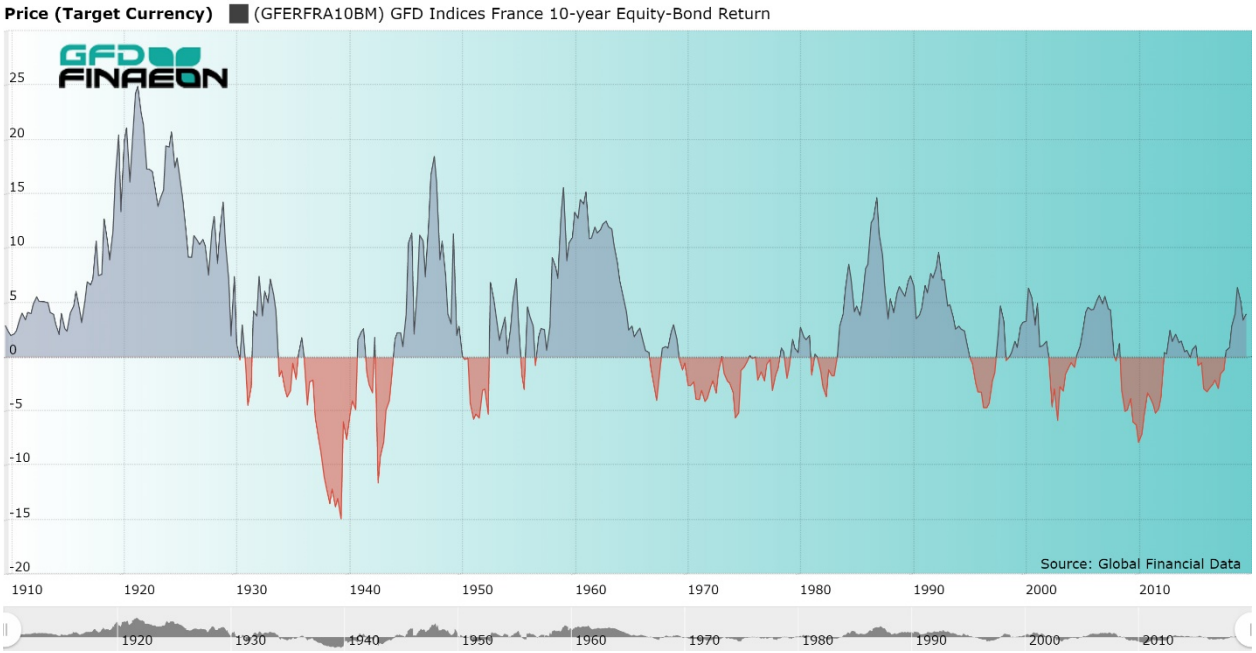


Figure 6.3. France 10-year Equity Risk Premium, 1910 to 2019

4. Bull and Bear Markets

Information on bull and bear markets in France during the past 300 years is provided in Table 6.2. France has had 27 bear markets since 1800. Data between 1720 and 1840 rely upon two stocks, the Compagnie des Indes in the 1700s and the Banque de France between 1800 and 1840. The stock market collapsed during the Revolution of 1848, but once a more conservative government was established in Paris, the French stock market staged a spectacular recovery as the price of railroads rose dramatically. It should be noted that France participated in the 1920s bull market as much as any other country, but then fell into a seven-year bear market that only ended in 1936 after stocks had fallen in price almost 75%.

After World War II, France's major industries were all nationalized, and the stock market represented less than 10% of GDP. France's stock market was weak and the timing of the country's bear markets after World War II differed from the bull and bear markets in New York and London. After Mitterand privatized industries in the 1980s, Paris once again became a prominent financial center, establishing Euronext as a major European exchange. Since 1981, France's bull and bear markets have been more in alignment with the rest of Europe than was true following World War II. The two bear markets in 2000 and 2007 saw the worst declines since the Great Depression.

Date	Decrease	Date	Increase
		01/31/1720	4101.64
12/31/1724	-99.36	12/31/1731	160.79
12/31/1733	-32.43	12/31/1739	93.08
01/31/1746	-56.04	09/30/1752	90.48
05/31/1762	-68.04	06/30/1765	129.03
09/30/1770	-46.04	06/30/1785	187.11

05/31/1793	-70.2		
		01/31/1803	
11/30/1803	-23.79	09/30/1807	39.51
2/28/1814	-57.69	3/31/1815	97.93
5/31/1815	-35.07	07/31/1825	182.64
4/30/1831	-37.2	7/31/1840	171.01
03/31/1848	-58.02	05/31/1856	726.75
03/31/1871	-33.63	12/31/1881	116.92
05/31/1887	-20.03	9/30/1912	68.47
12/31/1915	-26.18	4/30/1920	128.83
7/31/1921	-42.54	2/28/1929	426.8
8/31/1936	-74.98	8/31/1944	878.33
7/20/1945	-45.59	10/29/1948	173.45
7/31/1950	-34.37	8/31/1957	427.63
4/30/1958	-25.72	4/30/1962	136.73
7/31/1967	-45.9	1/29/1970	55.45
11/8/1971	-25.97	5/7/1973	57.23
9/27/1974	-50.05	3/11/1976	52.75
5/10/1977	-38.58	11/13/1980	138.82
6/5/1981	-35.25	3/26/1987	489.48
2/1/1988	-45.17	5/30/1990	124.23
1/14/1991	-30.46	2/2/1994	66.79
3/13/1995	-27.19	7/17/1998	142.52
10/4/1998	-31.61	9/4/2000	129.3
3/12/2003	-62.87	6/1/2007	169.64
3/9/2009	-59.5	2/18/2011	70.42
11/23/2011	-30.74	4/27/2015	92.87
2/11/2016	-25.28	2/12/2020	56.27
3/18/2020	-38.95		

Table 6.2 Bull and Bear Markets in France, 1719 to 2020

5. Stock and Bond Yields

Data on bond yields for France begins in the 1300s. Bond yields fell from around 15% in the 1300s to under 5% in the 1700s. This is illustrated in Figure 6.4. The two peaks in yields were during the Franco-Spanish war (1635-1659) and the Napoleonic Wars (1792-1815) when France defaulted on its bonds. There was a steady downward trend in bond yields between 1400 and the 1700s when a regular market for bonds was established in France. Since 1700, markets have determined the yield on government bonds.

After the French government defaulted on its bonds during the French Revolution, new bonds replaced the old bonds with shareholders receiving one-third new bond for each old bond. After Napoleon was defeated, bond prices rose and yields declined. The 3% and 5% bonds reigned supreme

in France until World War II. Bond yields hit peaks during the two Revolutions of 1848 and 1871, in 1925 and in 1981. The interest rate pyramid began in 1944 when bond yields were 2.88%, rose to 17.32% in 1981, the highest yields had been since the French Revolution, and declined to negative yields in 2019. It seems unlikely that bond yields will rise above 2% in the decade to come.

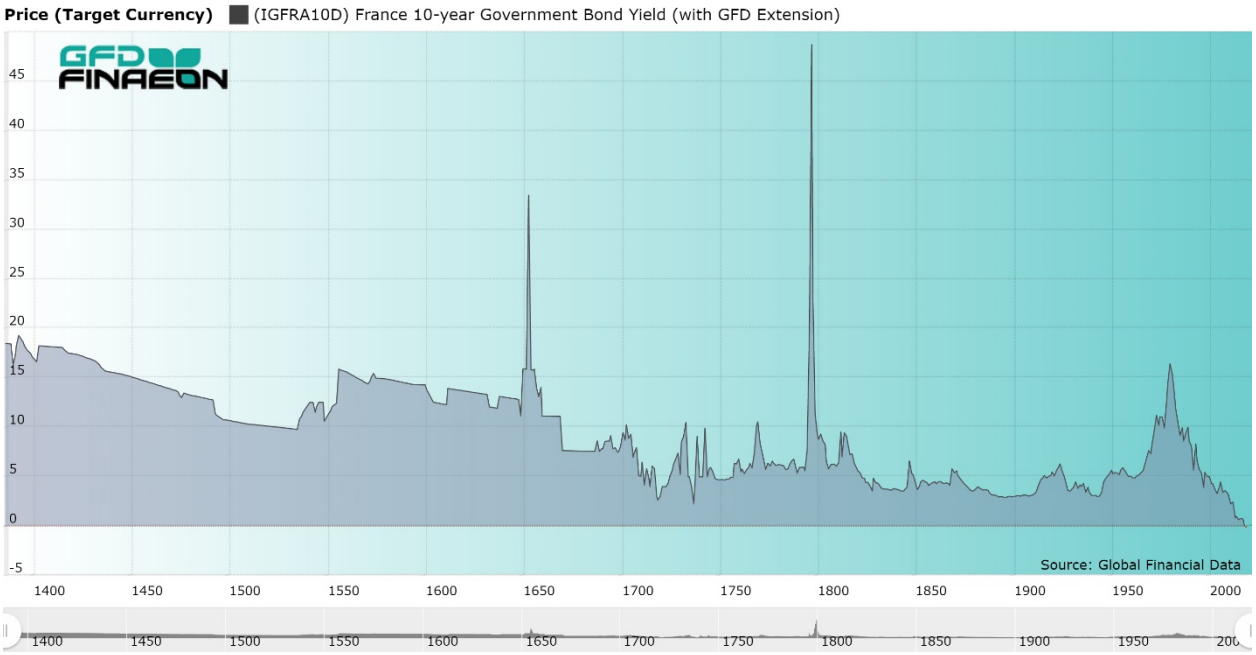


Figure 6.4. France 10-year Government Bond Yield, 1387 to 2019

The yield on government bonds has exceeded the yield on stocks during about half of France's history. Although this was true in the first two decades of the 1800s, it should be remembered that France defaulted on its government bonds during the French Revolution and the stock yield until the 1830s only represents one stock, the Banque de France. The yield on stocks exceeded the yield on government bonds between the 1830s and World War I. Although the yield on stocks exceeded the yield on bonds in most countries between 1914 and the late 1950s, this was not true in France. France suffered inflation after 1914 and this pushed up the yields on government bonds. Consequently, the yield on bonds exceeded the yield on stocks in most years between 1914 and 2008. It is only during the past ten years that the yield on French government bonds sank to such low levels that the yield on stocks exceeded the yield on government bonds. Nevertheless, the French stock price index remains below where it was at when the twenty-first century began. As long as government bond yields remain low, which is likely, the yield on stocks will exceed the yield on bonds for some years to come.

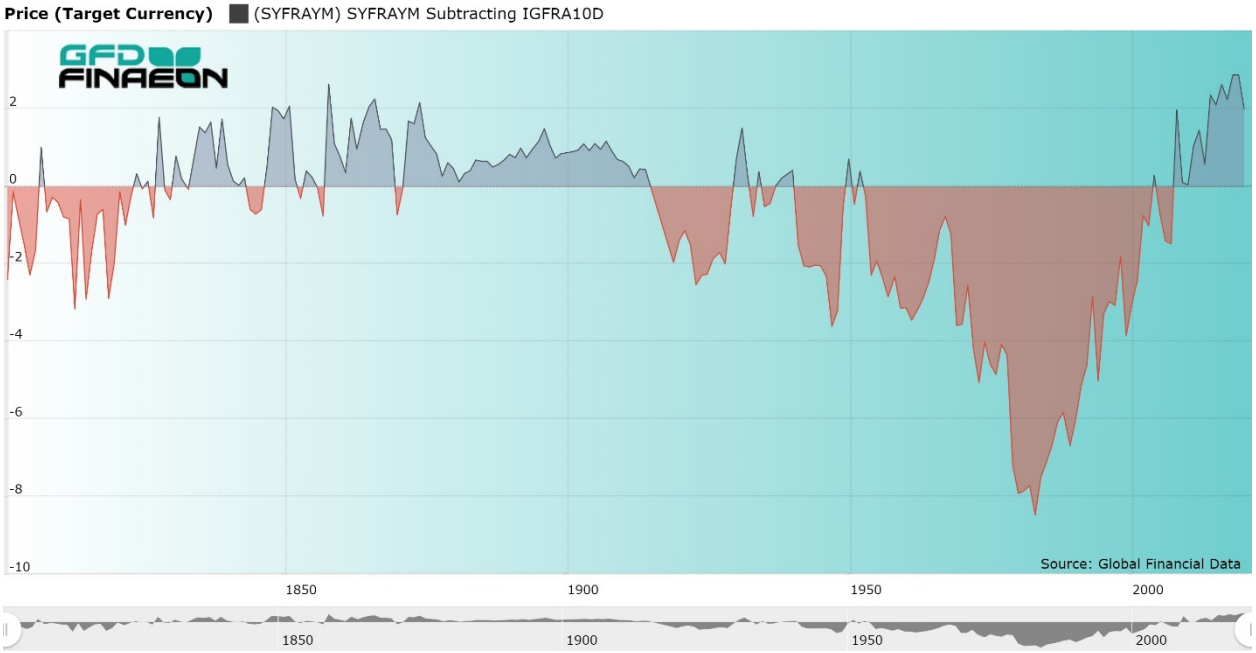


Figure 6.5. France Stock Yield Minus Bond Yield, 1802 to 2020

6. Stock Market Capitalization and Government Debt Share of GDP

Figure 6.6 illustrates France's government debt and market capitalization as a share of GDP between 1850 and 2019. During most of its history, French government debt has exceeded stock market capitalization. While government debt steadily declined in the United States and the United Kingdom in the 1800s, government debt steadily rose in France, exceeding 100% of GDP by the 1880s. Debt declined until World War I began, but during both World War I and World War II, government debt rose to above 200% of GDP. France struggled to pay off its debt after World War I, but after World War II, France inflated its way out of its debt, reducing its government debt/GDP ratio from 250% in 1944 to around 10% by the 1970s. Although this imposed a huge cost on French fixed-income investors, this enabled the economy to recover after World War II. Since the 1970s, the government debt/GDP ratio has steadily risen and now is close to GDP.

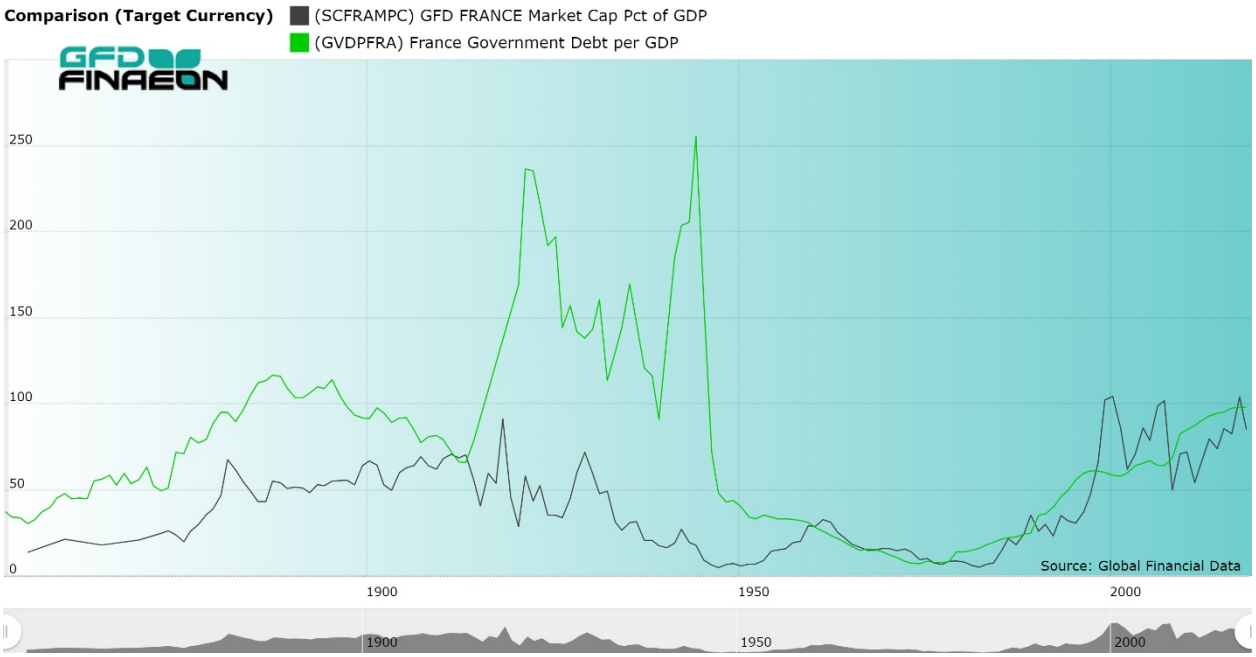


Figure 6.6. France Government Debt and Stock Market Cap as Percent of GDP, 1850 to 2019

The MCAP/GDP ratio was over 50% between 1880 and 1914. The ratio rose to almost 100% during the 1920s bull market, but after this, the ratio steadily declined. Nationalization of major industries and finance in the 1930s and 1940s reduced market cap relative to GDP dramatically. By the 1970s market cap was less than 10% of GDP. However, the privatization of French industry under Mitterrand changed this and by the end of the 1990s, the MCAP/GDP ratio had risen to 100%. However, the ratio has made no progress since then. It returned to 100% in 2007 and in 2018, but this has acted as resistance and the MCAP/GDP ratio has failed to significantly exceed 100% during the twenty-first century.

The graph of government debt/GDP and market capitalization/GDP captures the problems that France has faced in financial markets during the past two centuries. The stock market remained weak as privatizations eliminated the main industries of the economy from private hands. At the same time, France had large government debts during most of the period before World War II which weakened the country economically. France inflated its way out of its debts after World War II, imposing a huge cost on fixed-income investors. Both bonds and cash lost over 5% per annum in real US Dollars between 1914 and 1981. Since Mitterrand revived financial markets in the 1980s, both equities and bonds have risen in value until they are both about equal to the GDP of France today.

7. Exchange Rate

The exchange rate between the United States Dollar and the French Franc/Euro is illustrated in Figure 6.7. France suffered high inflation between 1914 and 1950 leading to a collapse in the value of the Franc. In 1960, a new Franc equal to 100 old Francs was introduced. Since then, the value of the Franc has remained stable relative to the U.S. Dollar. The exchange rate between the US Dollar and the French Franc was about five to one during most of the 1800s. France suffered more inflation than the

United States, both during and after the World Wars, but after World War II was completed, the French Franc stabilized relative to the US Dollar. The replacement of the Franc with the Euro insures that the value of the Euro will remain strong in France for at least the rest of the decade.

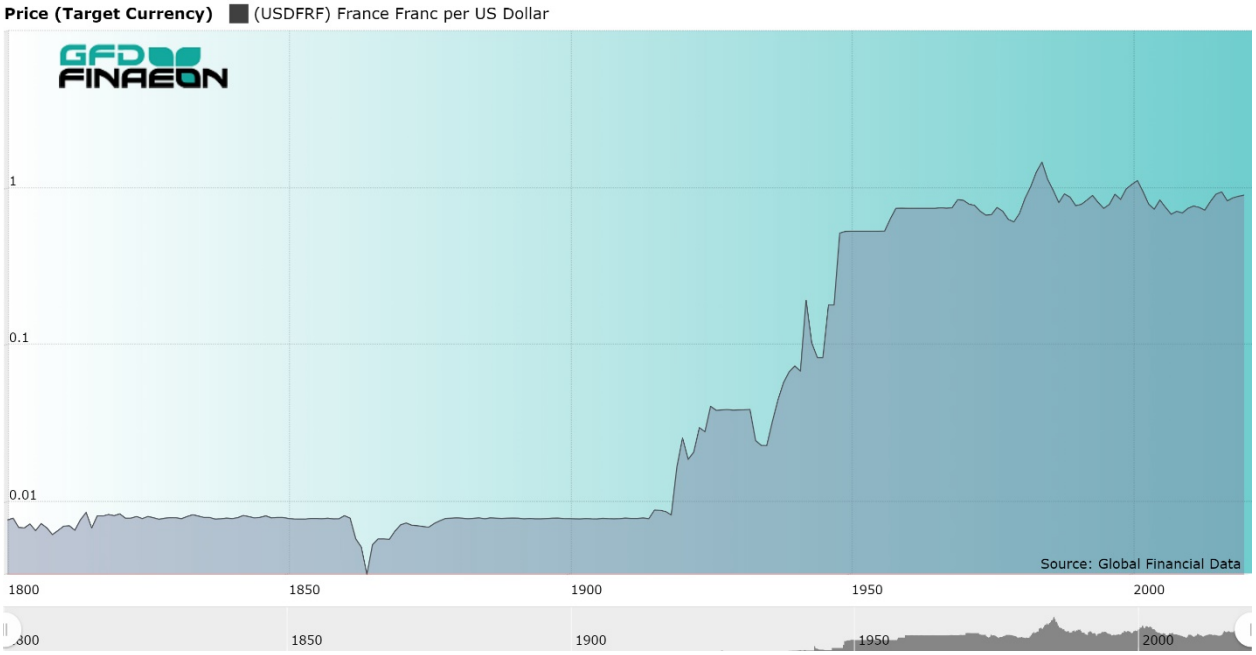


Figure 6.7. France Franc/Euro to US Dollar Exchange Rate, 1800 to 2019

8. Conclusion

France has generally provided lousy returns to both shareholders and fixed-income investors. There is antipathy toward capitalism among many intellectuals in France and this antipathy is periodically put into practice by French politicians. With the exception of the 1980s and 1990s, France has provided almost no return to shareholders since 1900. In 2020, the Paris stock market remains below where it was in 2000. If it weren't for dividends, French shareholders would have gotten no return on their investments during the twenty-first century.

Similarly, Fixed-income investors paid the price of France's spectacular overborrowing in the 1940s as double-digit inflation horribly reduced the real value of bonds in France. After inflation, bond investors lost over 5% per annum between 1914 and 1981. Today, bond yields in France are under 1%, so there is little prospect of strong returns in the decade to come.

Brexit has provided Paris with an opportunity to supplant London as the financial center of Europe, but until French intellectuals can remove their antipathy to capitalism, France is unlikely to replace London and provide strong returns to investors.

Germany

1. Sources

Germany has had a long history on stocks, bonds and bills. In addition to the Berlin stock exchange, there were numerous regional exchanges that existed in Germany until the German Boerse was founded in 1992. Germany didn't even exist as a country until Prussia brought together numerous Germany principalities and territories in the 1870s. Even today, Germany remains a federation of local states instead of a centralized country such as France or England. The German stock market includes over 450 companies with a total capitalization of around $2 trillion.

Data for the German stock market uses data on individual railroads between 1835 and 1870 to track the behavior of German stocks before the Berlin stock market was established as the principal stock market in Germany in 1870. Germany's railroads were nationalized in the 1870s and heavy industry and finance became the mainstay of the German economy. After World War II, Frankfurt became the financial center of West Germany. Both the European Central Bank and the Bundesbank are located in Frankfurt-am-Main and the city will remain the financial center of Germany for decades to come. The Reichsbank calculated indices of stock prices after World War I and the Deutscher Aktienindices (DAX) were introduced in 1987 and used the Frankfurter Allgemeine Indices to extend the data for the DAX back to 1959.

Paul Schmelzing has collected data on German bond yields back to 1326. Since Germany didn't exist as a single entity until the 1870s, the yields on bonds issued by different states is used until the 1870s. The Saxon 3% bonds of 1764 are used until 1806. Prussian bond are used from 1807 until 1891 and German bonds are used beginning in 1891. The yield on Hamburg commercial bills is used from 1854 to 1875 and on Berlin Bills from 1876 to 1945. Treasury bills are used beginning in 1954.

2. Returns to Stocks, Bonds and Bills

Germany's financial history is dominated by the hyperinflation of the 1920s and the devaluation of 1948. Both of these events caused losses exceeding 90% to both shareholders and to fixed-income investors. Since money invested in equities was invested in real assets, share prices bounced back once the hyperinflation was finished. Equities lost 92% of their value between 1918 and 1920, more than doubled in price between 1920 and 1922, then lost 86% of their value during the hyperinflation of 1922 measured in real US Dollars. But stock prices bounced back once the inflation came to an end, rising over 1340% between 1922 and 1923. Fixed-income investors were not so lucky. Although the government revalued bonds when the Rentenmark replaced the Mark at the rate of 1 trillion to 1 in 1923 at the rate of 1000 to 1, cash completely lost its value during the inflation. This can be seen in Figure 7.2. While stocks rose to new highs in 1923, bonds and bills never recovered. The revaluation of bonds is visible in 1923, but no recovery for bills was possible.

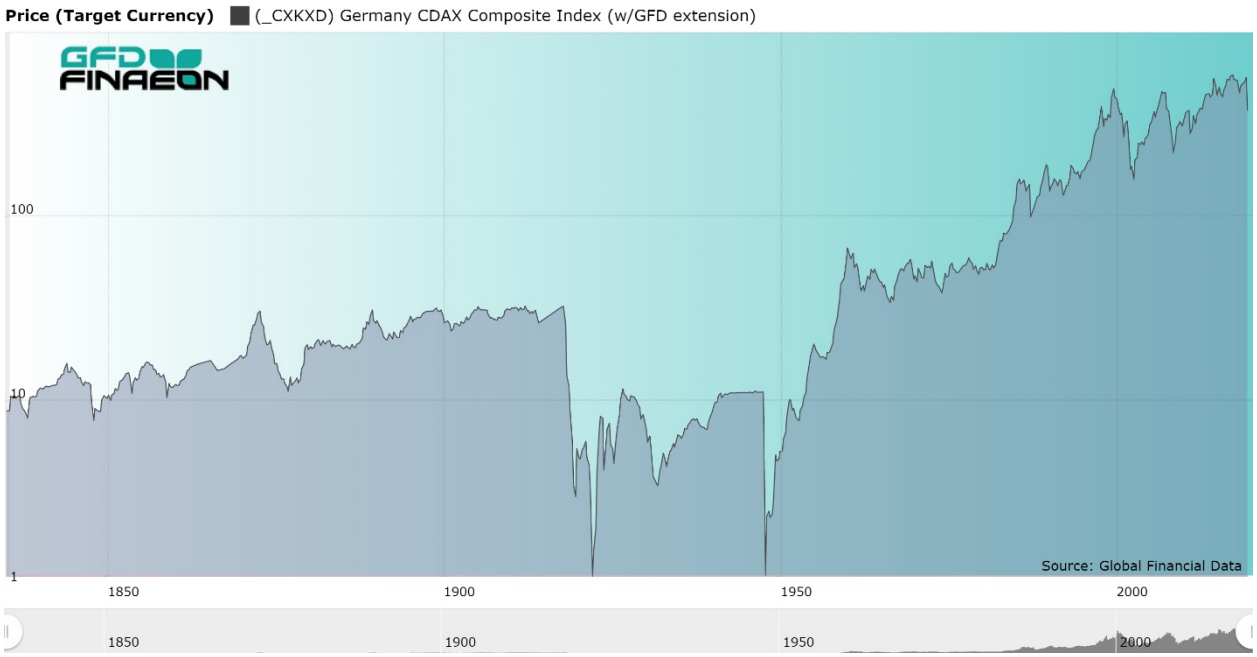


Figure 7.1. German Stock Returns, 1835 to 2019

When Germany converted from the Reichsmark to the Deutschemark in 1948, all financial instruments automatically lost 90% of their value. Something worth 10 Reichsmark was worth 1 Deutschemark. Once again, equities rapidly recovered after this depreciation, but bills and bonds were unable to recover, as is illustrated in Figure 7.2.

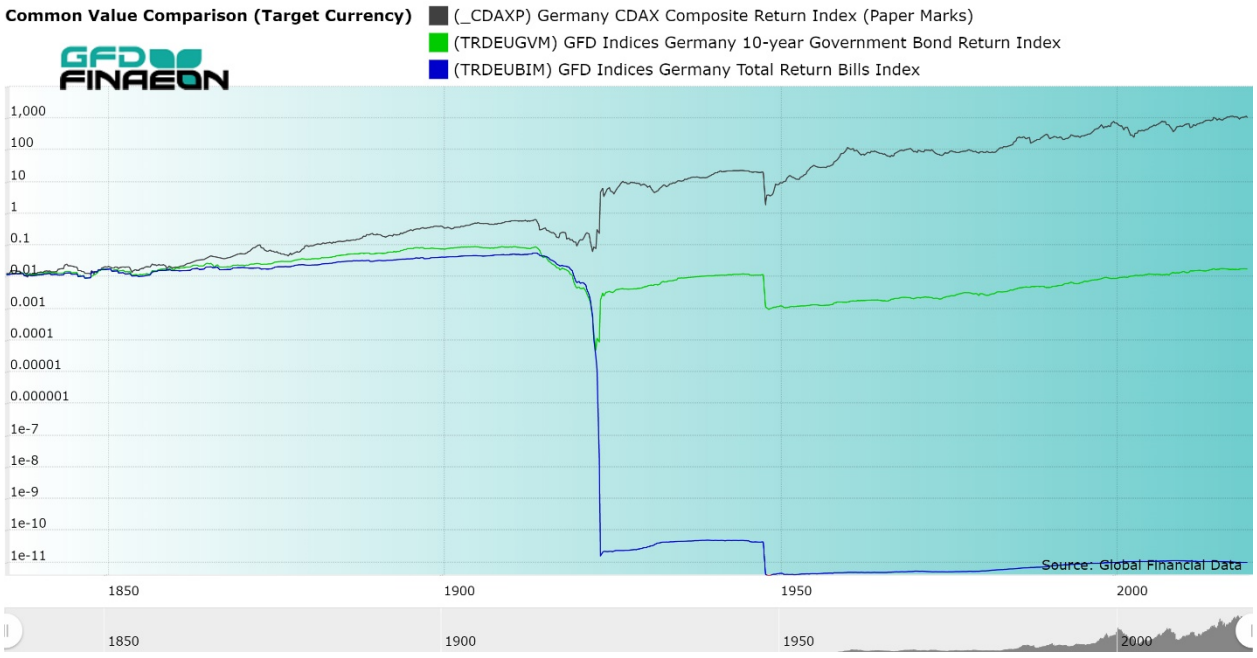


Figure 7.2. German Returns to Stocks, Bonds and Bills, 1835 to 2019

Between 1848 and 1914, equities returned 5.14% and bonds 2.87%, but between 1914 and 1945, equities lost 4.49% per annum in real US Dollars, bonds lost 21.25% and cash lost 57% per annum. Fixed-income investors were wiped out. Since 1949, however, both stocks and bonds have made positive returns each decade. Germany has become one of the most inflation-vigilant countries in the world. After investors were wiped out twice by inflation, the Bundesbank has made sure that this would never happen again, and with Germany overseeing the Euro, the rest of Europe will benefit from Germany's vigilance against inflation.

Since 1949, stocks, bonds and bills have returned 7.28%, 4.02% and 1.21% per annum respectively. Although this is less than the 7.55% returned to US investors during the same period of time, it is certainly much better than the annual loss of 0.18% that French investors suffered. Germany remains the manufacturing powerhouse of Europe and despite a 41.80% bear market during the Coronavirus Collapse, Germany looks like it will continue to provide positive returns to investors in the years to come.

Years	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
By Decade						
1819-1829			11.71	6.01		-0.93
1829-1839			2.36	1.04		1.40
1839-1849	2.72	6.39	5.54	5.72	0.81	-1.14
1849-1859	-0.61	2.31	2.53	1.77	-0.22	3.71
1859-1869	-0.52	6.95	-0.11	-0.69	7.08	1.57
1869-1879	-0.42	5.73	3.85	1.56	1.81	1.47
1879-1889	4.85	10	4.16	2.97	5.61	0.39
1889-1899	-0.32	4.95	3.69	2.85	1.22	-0.08
1899-1909	-1.96	3.15	0.79	1.4	2.34	1.85
1909-1919	-25.33	-24.21	-31.14	-23.76	8.65	20.73
1919-1929	9.71	19.22	-14.47	-87.69	58.51	1007.09
1929-1939	6.94	12.32	15.35	12.12	-2.62	-1.86
1939-1949	-11.43	-9.22	-23.74	-25.22	19.02	3.9
1949-1959	19.11	22.3	1.25	-1.18	20.78	2.19
1959-1969	1.36	4.65	4.5	2.01	0.14	2.36
1969-1979	-0.88	2.73	8.66	5.68	-5.47	4.99
1979-1989	7.76	10.51	3.15	1.22	7.14	2.78
1989-1999	5.26	7.36	3.93	1.05	3.31	2.27
1999-2009	-2.26	0.13	6.88	3.98	-6.31	1.60
2009-2019	1.69	4.68	-0.01	-3.99	4.69	1.31
By Era						
1848-1914	0.49	5.14	2.87	2.12	2.21	1.56
1914-1945	-9.83	-4.49	-21.25	-57.37	21.28	128.51
1945-1981	3.95	7.07	-0.95	-2.78	8.10	3.63
1981-2019	4.46	6.98	4.74	1.3	2.14	1.77

To Present						
1899-1999	0.32	4.01	-4.31	-21.67	9.47	31.97
1839-2019	0.45	4.5	-1	-12.02	5.97	17.23
1899-2019	0.22	3.74	-3.07	-18.43	7.65	26.31
1919-2019	3.44	7.11	-0.09	-19.65	7.92	29.64
1969-2019	2.25	5.02	4.48	1.53	0.52	2.58
1999-2019	-0.3	2.38	3.38	-0.09	-0.97	1.45

Table 7.1. German Returns to Stocks, Bonds, Bills, ERP and Inflation, 1839 to 2019

3. Equity Risk Premium

With the exception of the 1930s and the 1970s, the equity-risk premium has generally been positive in Germany since the 1840s. There were some periods in the 1850s and 1880s when the ERP was negative, but for the most part, the ERP remained positive until the 1930s. During the hyperinflation of the 1920s, the 10-year equity-risk premium hit 80% and remained over 40% for several years to come. The ERP also went over 40% in the early 1950s, again because of the decline in the return to bonds. Since around 1980, however, the ERP has been positive with the exception of a few years around the 2008 financial crisis. Bond yields in Germany have been negative for several years now, and it seems unlikely that bond yields will exceed 1% in the near future. The stock market is strong enough that the ERP seems likely to remain positive in the coming decade.

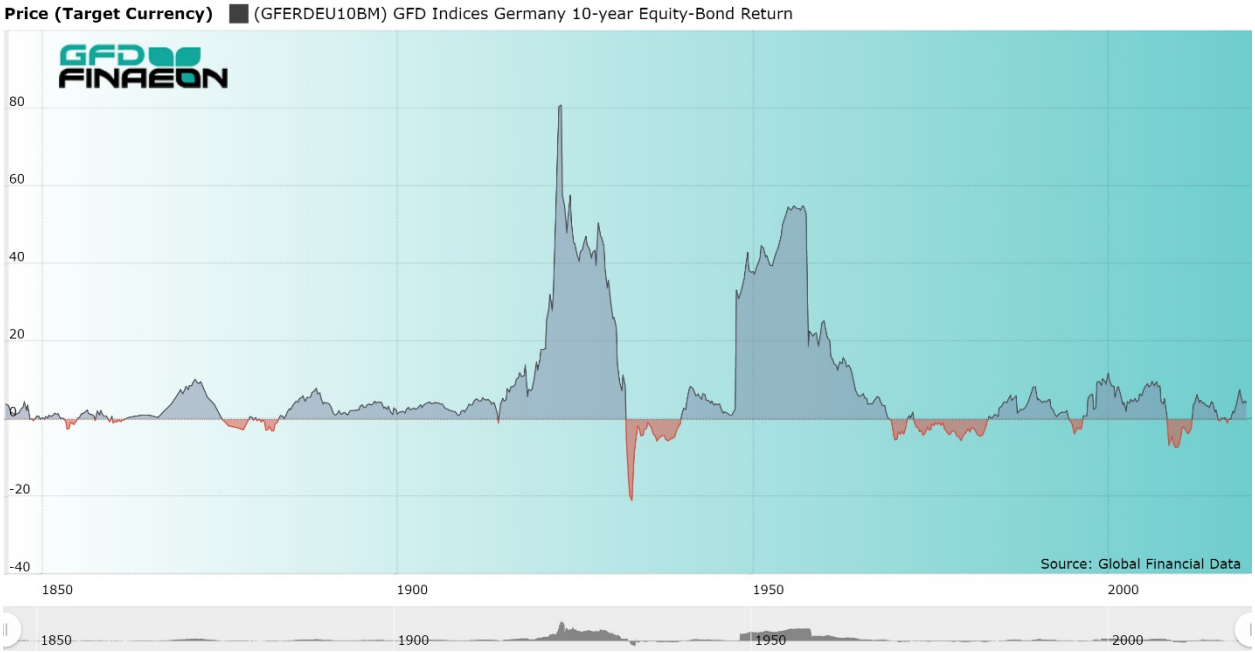


Figure 7.3. Germany 10-year Equity Risk Premium, 1850 to 2019

4. Bull and Bear Markets

Germany has endured 28 bear markets during the past 185 years. The worst was the 1918-1920 bear market during which the market declined by 92%. During the hyperinflation of 1922-1923, the stock market rose spectacularly, but if you adjust for inflation, the market declined by 86% between 1920 and 1922. Additional severe bear markets occurred in 1923-1924 (69%) after the hyperinflation

stopped, 1927-1932 (73%), 1946-1948 (79%) and 2000-2003 (70%). Germany relies upon heavy industry and finance for a large portion of its stock market and these industries are highly cyclical and could explain why the bear markets in Germany are so steep. This also means that Germany has had some spectacular bull markets. The 1922-1923 bull market rose 1347%. The 1948-1952 bull market rose 383% and the 1953-1960 bull market rose 772%. There were also bull markets in the 1980s, 1990s and 2000s in which the stock market rose by more than 200%. Until World War II, Germany's bull and bear markets moved separately from the rest of the world, but since 1948, Germany has generally followed the bull and bear markets of the rest of the world. The German stock market has declined 41.80% since it topped out in January 2018, so a strong bull market for the 2020s should begin soon.

Date	Bear Loss	Date	Bull Gain
05/31/1833		05/31/1837	35.22
08/31/1838	-26.26	06/30/1844	97.53
06/30/1848	-51.12	05/31/1853	81.89
04/30/1854	-25.35	05/31/1856	53.12
06/30/1859	-27.06	11/30/1872	201.72
6/30/1877	-64.06	12/31/1889	177.72
11/30/1891	-31.51	05/31/1899	50.14
10/31/1901	-26.36	5/31/1918	45.49
2/28/1920	-92.48	7/31/1920	135.13
10/31/1922	-86.34	11/30/1923	1347.04
6/14/1924	-69.26	1/31/1925	127.2
12/26/1925	-45.74	5/7/1927	182.79
4/16/1932	-73.64	2/28/1946	233.8
8/31/1948	-79.65	1/31/1952	383.49
6/30/1953	-30.09	9/30/1960	772.19
10/31/1962	-46.47	9/30/1964	43.4
1/31/1967	-34.72	10/31/1969	78.67
11/8/1971	-30.82	3/23/1973	38.37
10/7/1974	-34.9	10/16/1978	61.05
3/31/1980	-19.97	4/17/1986	261.55
1/29/1988	-46.68	7/16/1990	108.83
8/26/1992	-32.49	7/20/1998	215.85
10/8/1998	-34.49	3/7/2000	95.27
3/6/2003	-70.01	7/16/2007	205.16
3/6/2009	-58.73	5/2/2011	95.31
9/12/2011	-32.54	4/10/2015	120.19
2/11/2016	-29	1/23/2018	50.07
3/18/2020	-41.8		

Table 7.2. Bull and Bear Markets in Germany, 1833 to 2019

5. Stock and Bond Yields

Data on German bonds extends back to 1326. In the 1300s, bonds yielded 8%-10%, but through the centuries that followed, bond yields gradually declined, hitting a lower low each century. Of course, there were wars that drove up interest rates temporarily, but the long-term trend was down. While most countries hit new interest rate lows in the 1940s before the interest rate pyramid began, bonds actually hit their lows in 1896 at 3.05%. Yields effectively fell to zero during the hyperinflation of 1923, but rose to 13.78% in 1924. Yields hit double digits again in 1974 and 1981 before beginning the decline to negative numbers which Germany reached in 2016. There seems little reason to believe that bond yields are going to rise above 1% in the near future, so returns to bondholders are likely to remain low in the coming decade.

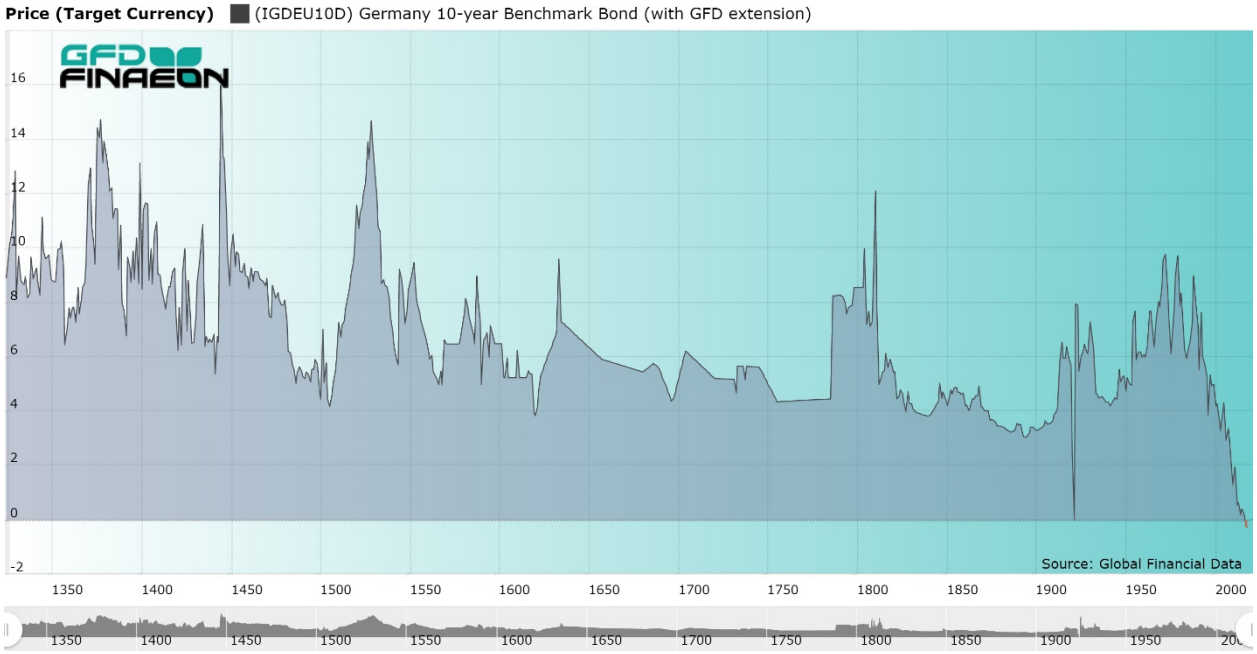


Figure 7.4. Germany 10-year Government Bond Yield, 1326 to 2019

The yield on government bonds has exceeded the yield on stocks during the majority of Germany's history. This is because German government bonds had a high risk of default between World War I and the reorganization of Germany's fiscal finances in the 1940s. Germany was either in default on its government bonds or inflated its way out of its obligations to bond investors. Between the 1950s and 1980s, high interest rates further ensured that German government bonds provided a higher return than stocks. It has only been during the time period since the financial crisis of 2008 that government bond yields have dropped to sufficiently low levels that stocks once again provided a higher return than government bonds. The yield on German government bonds has been negative for several years and looks like it is likely to continue remaining below zero for some years to come. This will make sure that stocks provide a higher yield than bonds for some years to come.

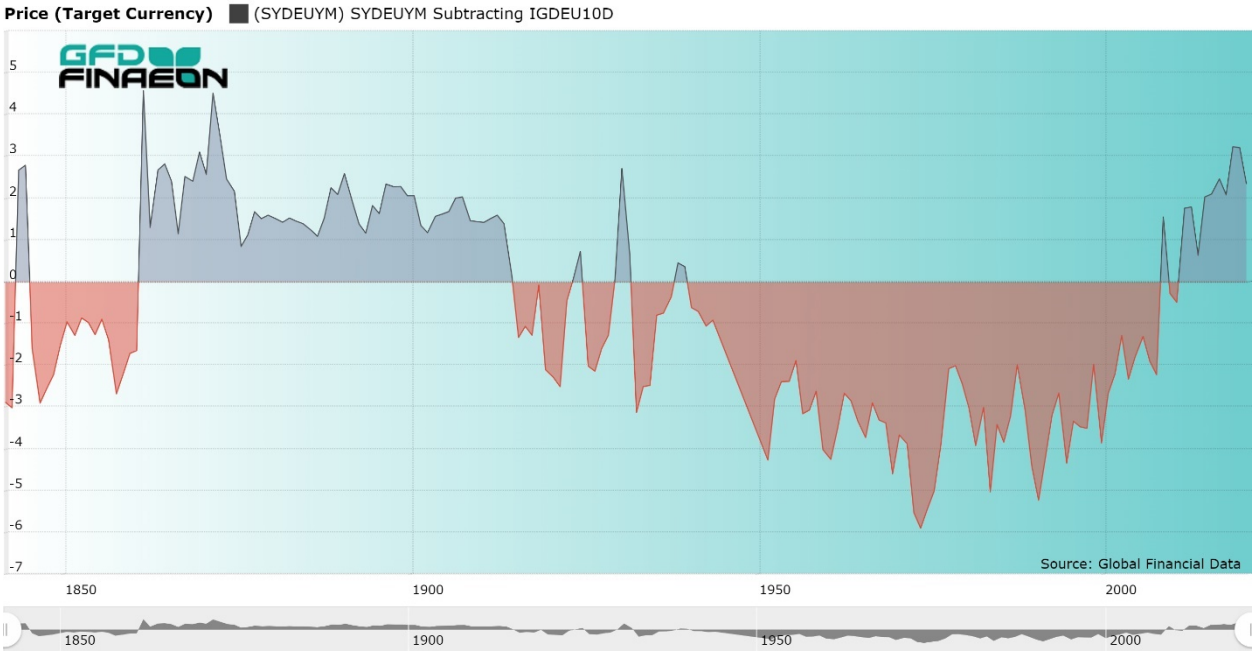


Figure 7.5. Germany Stock Yields Minus Government Bond Yields, 1840 to 2020

6. Stock Market Capitalization and Government Debt Share of GDP

German corporations have relied upon banks rather than stock markets as a source for funding. Consequently, the MCAP/GDP ratio has tended to be lower than in the United Kingdom or France. Until the 1990s, the MCAP/GDP ratio was generally below 40% of GDP. In 1950 and the late 1970s, the ratio fell below 10%. Although the ratio has risen dramatically during the past 20 years, it remains below 50% of GDP.

Despite the low MCAP/GDP ratio, the ratio of government debt to GDP has generally been even less than the MCAP/GDP ratio. In fact until the 1970s, the government debt/GDP ratio was under 10%. Germany was in default on its debt during most of the 1930s and 1940s and was only able to issue new debt in the 1950s when its debt was reorganized. Its debt grew steadily from 1975 until 2010 when it topped out at 80% of GDP. A good portion of this debt was issued to pay for absorbing East Germany into West Germany. Since this process has been completed, government debt as a share of GDP has shrunk during the past 10 years.

Financial markets have never been a prominent part of Germany. While the United States may leverage its debts to maximize the return on outstanding stocks and bonds, Germany generally avoids both long-term government debt and equities. These traits are unlikely to change in the near future.

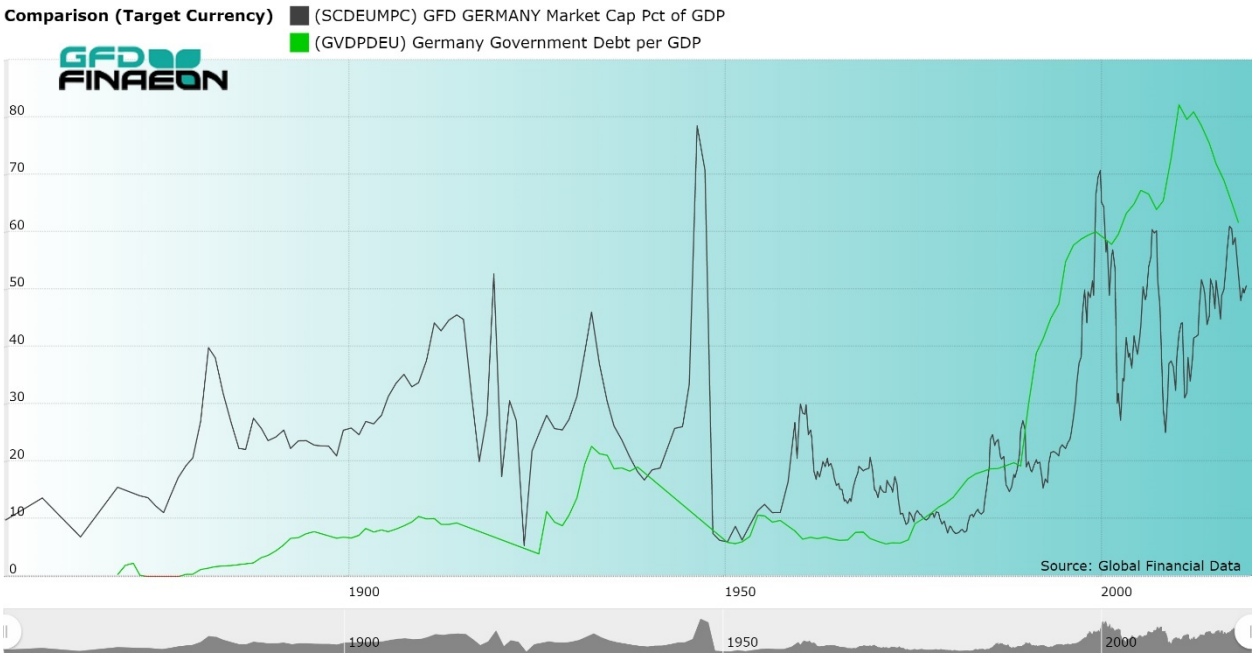


Figure 7.6. Germany Government Debt and Stock Market Cap, 1850 to 2019

7. Exchange Rate

Germany endured one of the worst inflations in history during the 1920s. Although inflations in Hungary, Yugoslavia and Zimbabwe were worse, Germany achieved hyperinflation with impressive speed after World War I. Many people blame the hyperinflation on the costs that were imposed by the Allies on Germany after World War I. Because Germany was unable to pay these costs, the country ran large deficits and inflated their way out. By the end of the hyperinflation in 1923, it took 1 trillion old Marks to get 1 Rentenmark that replaced the old Mark. By comparison, the inflation that occurred after World War II was mild, but these two inflations have instilled a distrust of inflation in Germany that persists today. Since 1950, Germany has been one of the most inflation-adverse countries in the world and its currency has steadily appreciated against the US Dollar. Germany wanted to be in charge of the European Central Bank to ensure that other Euro countries, such as Italy, didn't give into the inflationary temptations of other countries. This is unlikely to change in the near future, and all of the Eurozone has to follow the inflationary-avoiding policies of Germany.

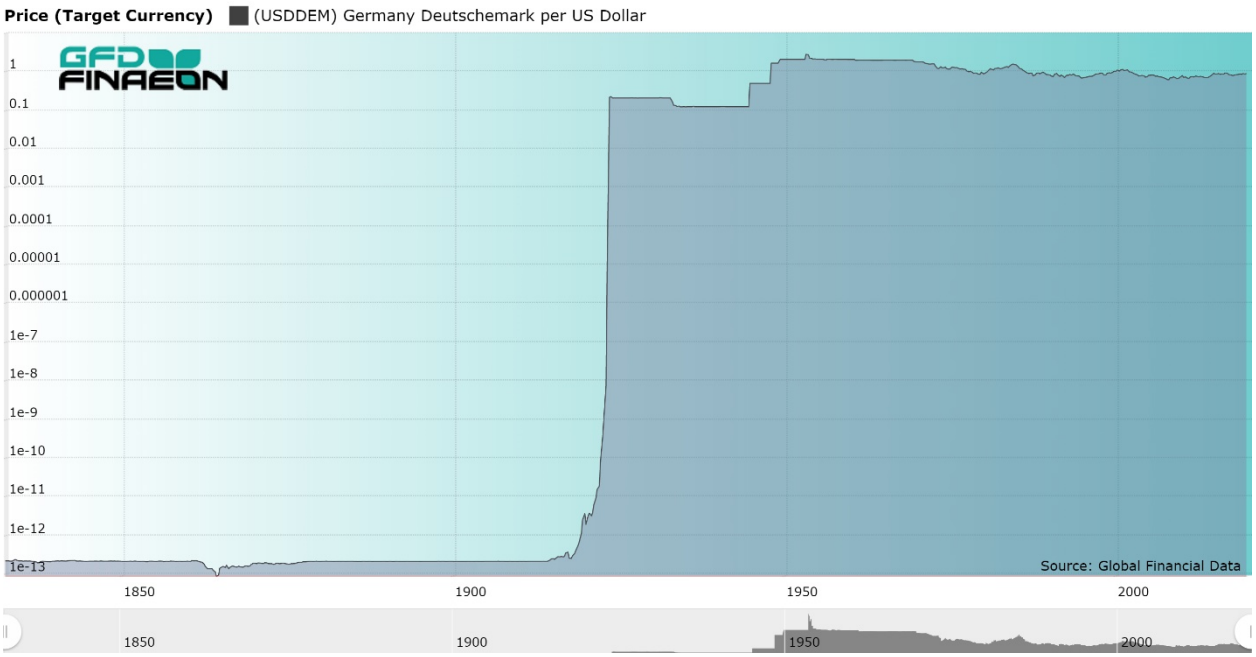


Figure 7.7. United States Dollar-German Mark/Euro Exchange Rate, 1820 to 2019

8. Conclusion

German investors suffered from the impact of two world wars on the country. The hyperinflation of the 1920s imposed massive losses on shareholders and fixed-income investors. Similar, though smaller, losses occurred after World War II. After World War II, Germany got the anti-inflation religion and the country has done spectacularly well since then. Germany has certainly outperformed France since World War II. The nature of Germany's economy, heavily dependent upon heavy industry and finance, has made the country's stock markets more volatile than other countries. The bull and bear markets are more dramatic than other countries. This has helped Germany to obtain a higher return than surrounding countries.

Bond yields are the lowest in the Eurozone and have been negative for several years now. There seems little reason to believe that bond yields will go above 1% in the near future. Since Germany enjoys spectacular bull markets, one can only hope that Germany's bull market of the 2020s will be as successful as the ones of the 1980s, 1990s and 2000s.

India

1. Sources

The Global Financial Database has more equity history for India than for any other country. The British East India Co. was founded on December 31, 1600, preceding the founding of the Dutch East India Co. by one year. Originally, shares were issued for specific ventures to India, but in 1657, joint stock shares were issued and these shares continued to trade in London until the company was dissolved in 1874 and the British government took over ownership of the company. The East India Co. paid a consistent 10.5% dividend from 1793 until the company's dissolution in 1874. From the late seventeenth century until the early eighteenth century, 95% of Asian imports into Britain come from Mughal India and consisted mainly of cottons and spices produced in India. The decline of Mughal India in the first half of the eighteenth century led to the rise of the British East India Co. which took over India from the Mughal Empire after its victory in the Battle of Plessey in 1757. During the 1800s, the manufacture of textiles moved from India to Britain as the Industrial Revolution enabled Britain to produce the textiles it had formerly imported from India.

During the 1850s, British investment in India boomed, establishing railroads, canals, shipping companies and utilities that were essential not only for the development of the Indian economy, but to enforce Britain's control over the colony. Merchants in Manchester and London supported building railroads that linked India's main ports to the interior to bring cotton and other goods to the rest of the world. However, these railroads did not prove profitable, and the British government had to guarantee the 5% dividends the India railroads paid.

In the 1860s, investment in India spread to other sectors. Banks, tea companies, telegraph companies and gold mines were the most popular investments in India. The civil war in the United States led to an increase in demand for cotton causing a bubble in equity markets which burst when the American civil war ended. Although cotton and clothing represented a large portion of India's production, most of these companies used local capital rather than British funds.

GFD's index for India uses data on the East India Co. exclusively from 1692 until 1845. A second East India Co. existed between 1698 and 1708, but it merged with the old East India Co. in 1708 because the competition between the two was eliminating their profitability. Data for the East India Railway begins in 1846 and the number of Indian companies that listed in London grew to 20 in the 1860s and peaked at around 50 in 1900. Data for India companies listed in London is used from 1690 to 1922. The number of companies remained around 50 until 1922 when a stock index based upon shares that traded in India was introduced. The domestic India index used data from 100 companies from the Calcutta, Bombay and Madras stock exchanges. By linking together data from The East India Co. from 1690 to 1845, the London Stock Exchange from 1846 to 1922 and from Indian stock exchanges from 1922 to the present, we have been able to provide over three centuries of data on stock companies that operated in India.

The government bond series uses the yield on East India Co. stock from 1722 until 1864 when the Government of India issued its first bonds. The dividend was set at 10.5% in 1793 and remained at that level until the dissolution of the company in 1874. India issued a 4% bond in 1864 which was later

replaced by bonds yielding 3.5% then 3%. Unlike many other emerging markets, India has never defaulted on its bonds, a fact that is reflected in the yield remaining around 4% until India's independence. The data for cash is based upon the Central Bank Discount Rate from 1873 to 1925, the Call Rate from 1925 to 1930 and 1948 to 1992 and the yield on T-bills from 1930 to 1948 and since 1992.

2. Returns to Stocks, Bonds and Bills

The Indian stock market's capitalization is around $2 trillion and includes over 7000 companies. The performance of stocks in India over the past 350 years is illustrated in Figure 8.1. The most interesting observation here is the lack of movement in the index from the 1700s to 1980. All of the return to shareholders came in the form of dividends. This is the legacy of the guaranteed returns that first went to shareholders of East India Co. stock between 1792 and 1874, and to the railroads up until the 1890s. After the government gained control over the railways in the 1880s, investment went into tea, rubber, cotton, mining and other resources, not into industries that could develop the country. The ratio of the stock market's capitalization to GDP shrank between 1880 and 1980 and investors had to rely upon dividends to obtain a return.

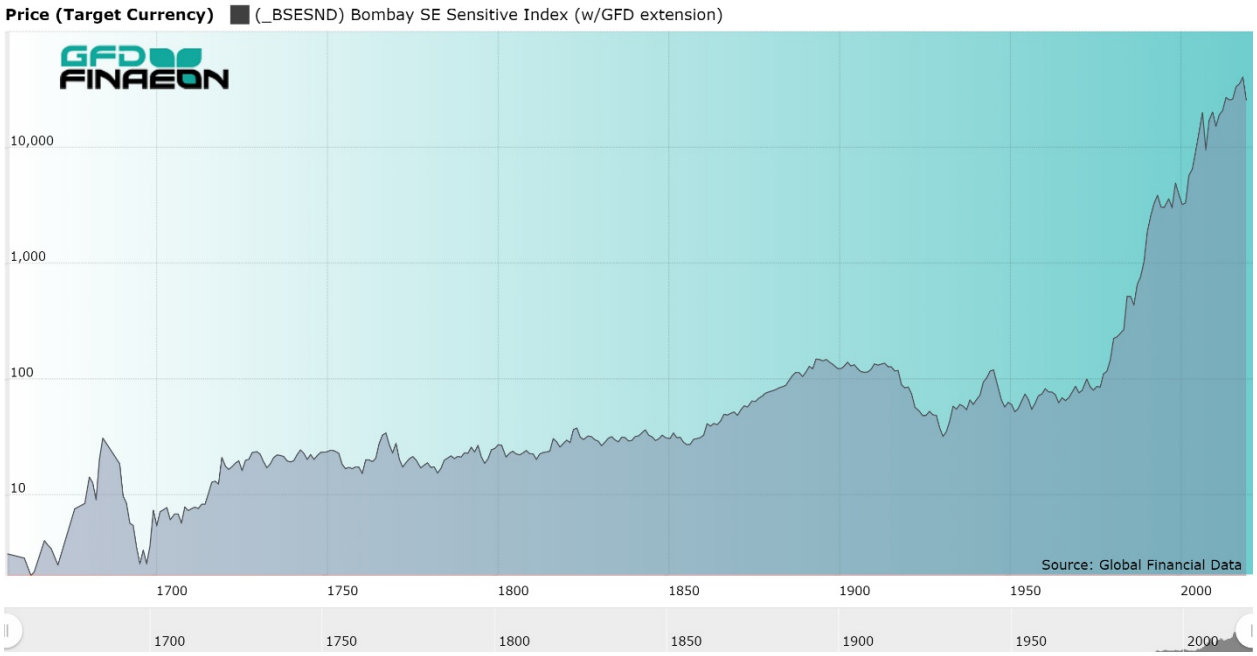


Figure 8.1. India Stock Market Returns, 1657 to 2019

Figure 8.1 shows the behavior of Indian stocks since the domestic index was first computed in 1920. As can be seen, there was virtually no change in the price of Indian stocks from 1920 until 1980. The Indian economy went through an economic boom between 1910 and 1930 and an economic bust between 1930 and 1950. After India became an independent country, the economy went through a period of economic boom driven by Five-Year plans and socialist policies leading to average growth in the economy of 3.1 percent per year. However, growth slowed between 1970 and 1990 leading to a period of economic liberalization which has prevailed in India since P.V. Narasimha Rao and Manmohan

Singh introduced these reforms in 1991. This has given investors the opportunity to finally benefit from growth in the Indian economy. Today, there is investment in information technology as India tries to provide growth to over 1.3 billion people.

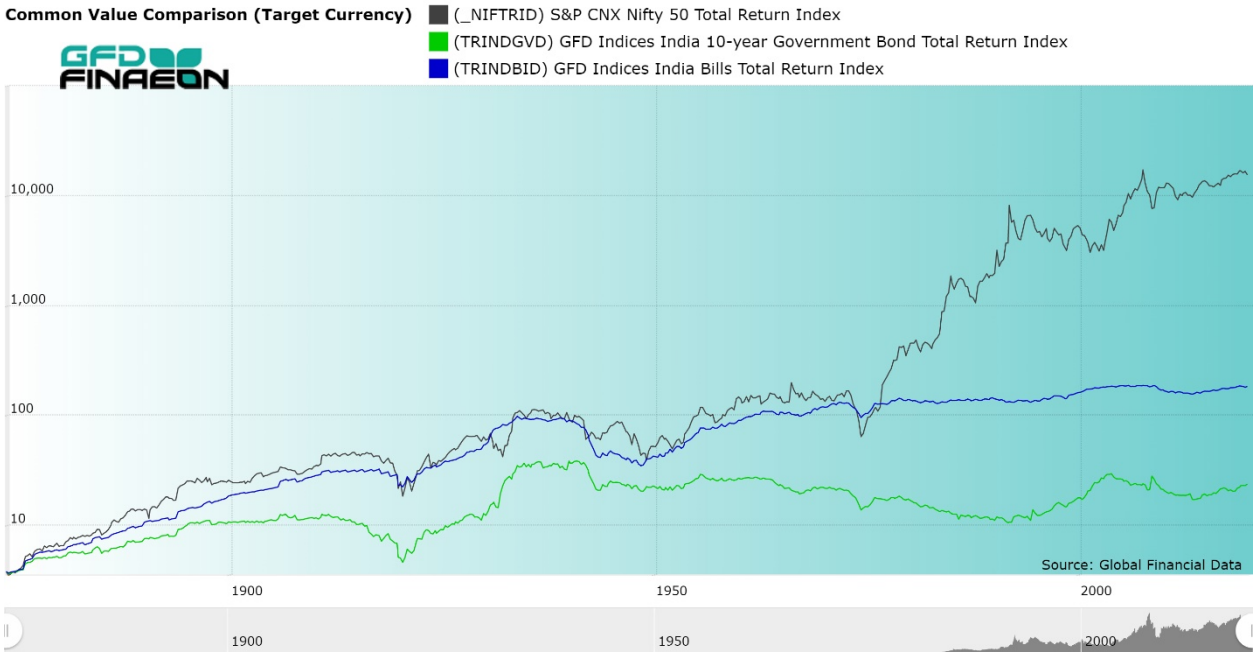


Figure 8.2. India Real Returns to Stocks, Bonds and Bills, 1870 to 2019

Figure 8.2 provides data on the relative performance of stocks, bonds and bills between 1870 and 2019. Equities have easily outperformed bonds and cash during the past 150 years. Converted into real US Dollars, neither bonds nor cash has any return since the 1930s. Indian equities returned over 5% between 1792 and 1914. Returns dropped down to under 3% between 1914 and 1981, but has jumped up to over 9% since 1981. Bond returns have been negative in real US Dollars since 1899, primarily because of the rise in interest rates over time. Returns have dropped between the 2000s and 2010s, and there seems little prospect for higher returns in the coming decade. Cash returns have been negative during the past 20 years, 50 years and 100 years.

Years By Decade	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
1709-1719	4.65	10.1		4.79		
1719-1729	6.47	11.89		4.34		
1729-1739	-1.62	2.75	2.78	4.07	-0.03	
1739-1749	1.7	6.46	6.46	4.12	0.00	
1749-1759	-2.85	1.42	1.41	4.07	0.01	
1759-1769	4.5	10.58	10.61	4.07	-0.03	
1769-1779	-3.99	0	0.58	4.77	0.02	
1779-1789	1.79	8.12	6.6	5.15	0.83	

1789-1799	-1.36	4.36	5.17	2.32	-1.06	
1799-1809	-0.15	5.55	5.71	5.12	-0.15	
1809-1819	0.34	5.96	6.11	4.66	-0.14	
1819-1829	2.87	7.35	6.74	5.34	0.45	
1829-1839	-1.05	3.35	4.68	2.84	-1.26	
1839-1849	3.12	7.4	6.64	5.63	0.71	
1849-1859	-1.89	2.58	3.36	2.66	-0.76	
1859-1869	2.4	7.26	-0.11	-0.31	5.43	
1869-1879	2.46	7.14	4.65	3.24	4.26	
1879-1889	2.7	6.69	2.73	4.72	3.86	
1889-1899	0.98	5	2.74	4.98	2.23	0.6
1899-1909	-3.72	1.39	-0.08	3.06	1.44	1.91
1909-1919	-6.31	-0.14	-3.99	1.85	4.23	0.33
1919-1929	-6.87	6.82	4.2	4.72	2.26	0.17
1929-1939	3.21	3.11	7.91	2.78	-4.43	0.79
1939-1949	-9.73	-6.23	0.63	-3.27	-3.37	0.53
1949-1959	0.03	9.5	-2.82	3.09	8.74	3.93
1959-1969	-6.19	-1.48	-2.99	1.75	1.51	4.05
1969-1979	-3.6	9.33	-2.83	1.18	12.49	2.85
1979-1989	6.75	12.93	-7.85	-3.56	23.24	5.86
1989-1999	6.49	7.08	0.84	-2.26	6.16	5.37
1999-2009	9.78	11.66	5.19	3.62	6.17	6.84
2009-2019	2.66	3.73	0.95	-8.57	2.77	6.66
By Era						
1792-1848	0.53	5.56	5.62	0.3	-0.09	
1848-1914	0.57	5.23	2.04	-0.55	3.15	0.32
1914-1945	-2.55	2.82	3.32	1.69	-0.57	2.81
1945-1981	-5.44	2.33	-3.48	0.89	6.04	5.37
1981-2019	5.8	9.12	0.34	-2.53	8.76	7.52
To Present						
1799-1899	1.16	5.82	4.31		1.44	
1899-1999	-2.15	4.08	-0.79	0.9	4.96	4.59
1799-2019	0.08	5.18	1.85	1.9	3.30	
1899-2019	-0.81	4.66	-0.16	0.29	4.87	1.80
1919-2019	0.06	5.49	0.23	-0.13	5.29	5.24
1969-2019	4.31	8.89	-0.83	-2.01	9.94	7.70
1999-2019	6.16	7.62	3.05	-2.67	4.46	6.32

Table 8.1. India Returns to Stocks, Bonds, Bills, ERP and Inflation, 1709 to 2019

India has a lot of opportunities for growth and will soon be the most populous country in the world. There is no reason why India shouldn't continue to show high rates of growth in the years to come. Bond yields and interest rates remain high in India and provide the opportunity to decline in the decade to come. India should continue to provide growth opportunities for investors in the near future.

3. Equity Risk Premium

As Figure 8.3 shows, India has generally had a positive equity-risk premium. During the early 1800s, there was not much of a difference between the yield on stocks and bonds. The ERP remained consistently positive between the 1860s and 1920s. Although the ERP was negative in the 1930s and 1940s, remained strongly positive since 1950 with a negative ERP primarily in the early 2000s. The ERP remained over 15% during the 1980s and 1990s hitting 35% in the 1990s. Bond yields are currently around 7% and will likely decline over the coming decade. This means that the stock market will have to provide high positive returns to maintain a positive ERP.

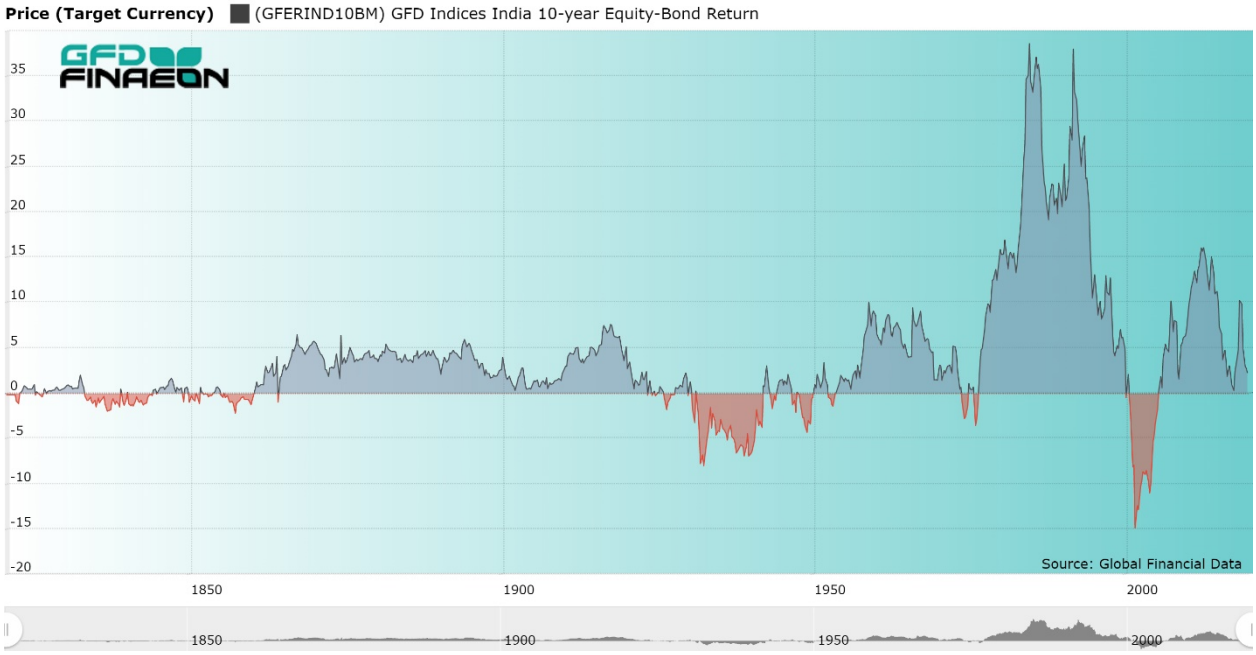


Figure 8.3. India 10-year Equity Risk Premium, 1830 to 2019

4. Bull and Bear Markets

Although there is information on bull and bear markets for India since 1698, most of this history is for the British East India Co. until the mid-1800s. Between the 1860s and 1920s, the index relied upon Indian companies that listed in London, with railroads representing a large portion of the market capitalization. Because the railroads were guaranteed by the British government, which reduced the volatility in the market. This also means that bull and bear markets had a longer duration than they would have had in a market that lacked these guarantees.

The largest bull market occurred between 1698 and 1720 when the South Sea Bubble occurred. Although the market was up almost 400% between 1857 and 1889, this took place over a 32-year period. There were two huge bull markets between 1975 and 1986 (751%) and 1988-1992 (1025%), but since then, the bull markets have been relatively mild. It should be remembered that the inflation rate in India during the past 50 years has been 7.70% which reduced the real return during these bull markets.

Although the worst bear market occurred between 1685 and 1698 (92%), this represented the decline in just one stock, the British East India Co. India never participated in the 1920s bull market, so the decline between 1896 and 1932 saw stocks fall in price by 84%. Because India is an emerging market, its bull and bear markets move on a different schedule from developed markets. India has gone through 11 bear markets since 1986, one every three years. On the other hand, bear markets occur about once every ten years in the United States.

India is likely to remain volatile in the years going forward. There are a lot of opportunities for growth, but also a lot of uncertainty, which is one of the drivers of bear markets. Shorter bear markets also mean that they are not as severe as they otherwise would be. Bear markets in India are likely to remain short and shallow in the future.

Date	Bear Loss	Date	Bull Gain
06/30/1698	-92.95	08/31/1720	1857.45
09/30/1722	-63.62	04/30/1731	58.57
03/31/1734	-31.72	07/31/1743	45.35
01/31/1762	-43.29	06/30/1768	147.99
11/30/1783	-56.80	03/31/1796	80.42
05/31/1797	-33.26	04/30/1802	56.40
07/31/1803	-30.53	04/30/1824	106.01
09/30/1857	-39.78	05/31/1889	398.87
09/30/1890	-25.37	06/30/1896	77.89
6/30/1932	-84.84	3/31/1937	135.80
4/30/1939	-28.76	11/30/1941	55.33
3/31/1942	-21.11	7/31/1946	164.37
6/30/1949	-61.31	5/31/1962	71.24
12/31/1965	-28.52	6/30/1974	79.56
6/30/1975	-31.97	6/4/1986	751.38
3/28/1988	-40.81	4/2/1992	1025.09
4/26/1993	-53.58	9/12/1994	127.34
12/4/1996	-40.72	8/5/1997	65.68
10/11/1998	-39.22	2/11/2000	114.66
9/17/2001	-54.82	1/14/2004	131.04
5/17/2004	-27.27	5/10/2006	179.95
6/14/2006	-29.20	1/8/2008	133.76
3/9/2009	-60.91	11/5/2010	157.40
12/20/2011	-27.75	1/29/2015	95.60
2/11/2016	-22.67	1/14/2020	82.79
3/23/2020	-38.07		

Table 8.2. India Bull and Bear Markets, 1698 to 2020

5. Stock and Bond Yields

Since India was a British colony, there was little risk of default on its outstanding bonds. Figure 8.4 provides a graph of the yield on Indian government bonds from 1722 until 2019. The series uses the

yield on East India Co. stock from 1722 until 1864 when the Government of India issued its first bonds. The dividend for East India Co. stock was set at 10.5% in 1793 and remained at that level until the dissolution of the company in 1874. India issued a 4% bond in 1864 which was later replaced by bonds yielding 3.5% then 3%. Unlike many other emerging markets, India has never defaulted on its bonds, a fact that is reflected in the yield remaining around 4% until India's independence. The yield rose to 14% in 1995 because of inflation, but has declined since then. Bond yields have settled between 6-8% and are likely to remain in that range for some time.

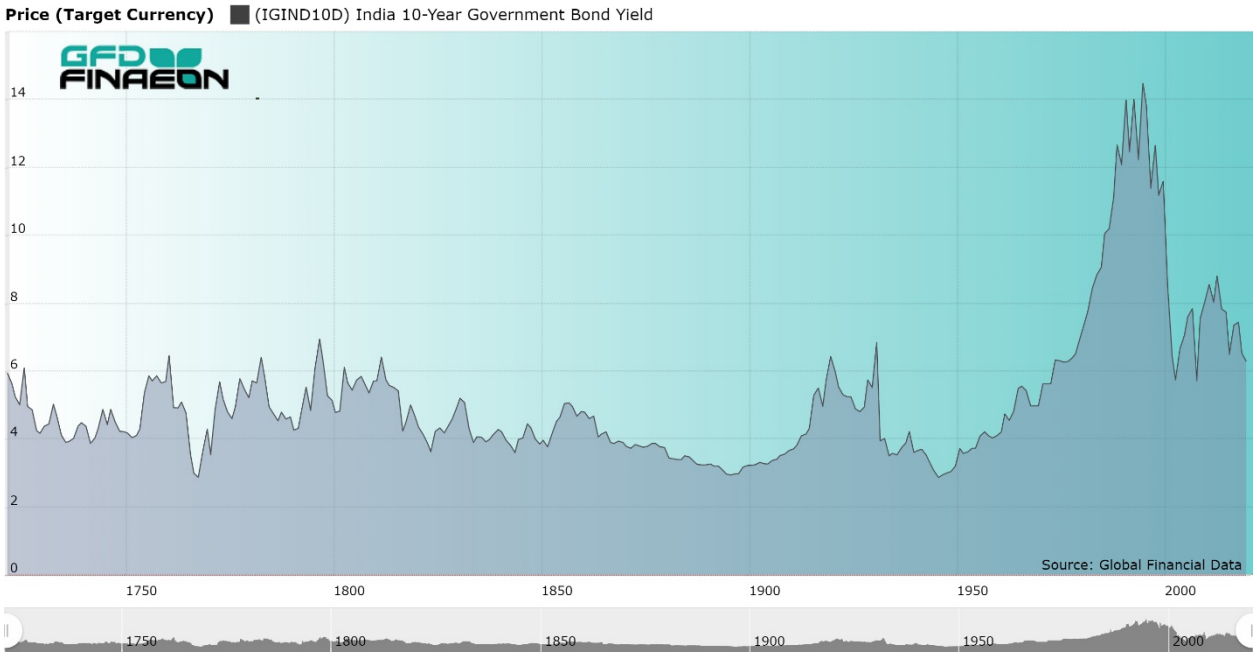


Figure 8.4. India 10-Year Government Bond Yield, 1730 to 2019

The yield on stocks exceeded the yield on government bonds during most of India's history up until the late 1960s. While most countries have seen government bond yields fall, enabling the yield on stocks to exceed the yield on government bonds, this has not happened in India. Although the spread has declined since the 1990s, it remains around 6%. This underlines the fact that it is mainly fluctuations in the yield on government bonds that determines whether the yield on stocks exceeds the yield on government bonds, not vice versa.

With the exception of two dips when the yield on government bonds exceeded the stock yield in the 1920s and 1930s, stock yields consistently were greater than the yield on government bonds between the time that the first Indian bonds were issued in London in the 1850s and rising bond yields in the 1970s enabled the government bond yield to exceed the stock yield. Government bond yields remain relatively high in India because of the fear of inflation and until this fear of inflation subsides, government bond yields are likely to exceed stock yields.

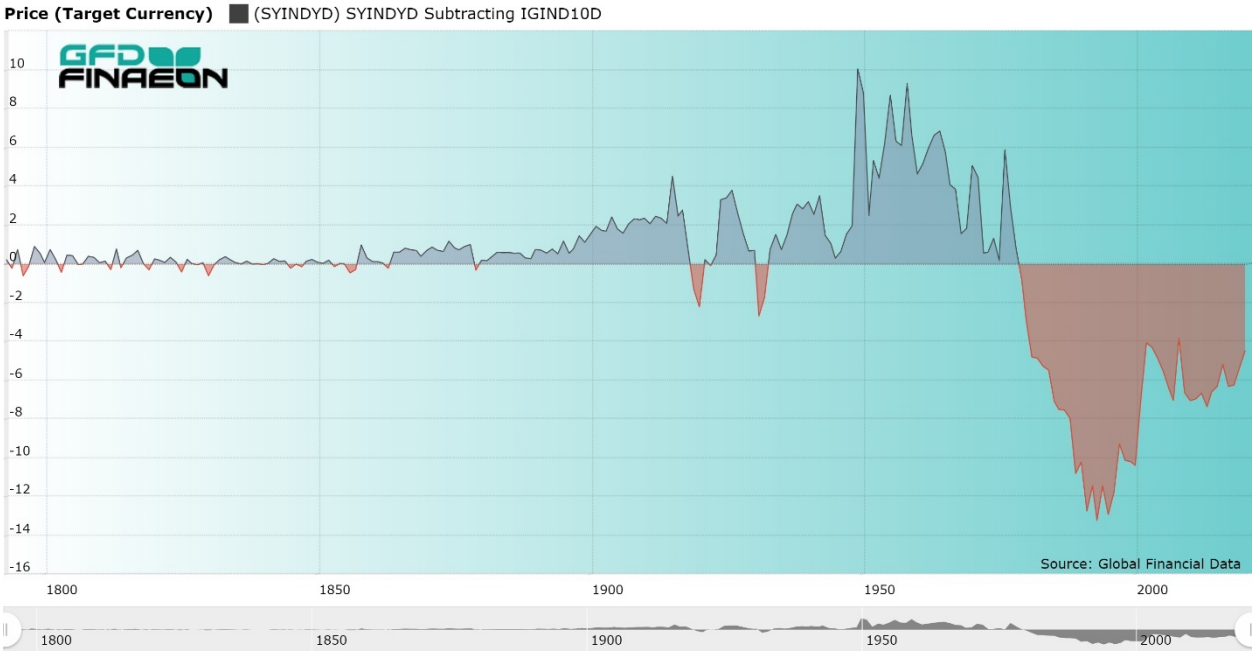


Figure 8.5. India Stock Yield Minus Government Bond Yield, 1792 to 2020

6. Stock Market Capitalization and Government Debt Share of GDP

The ratio of the stock market's capitalization to GDP has been low in India throughout most of its history. India is an emerging market and this means that manufacturing and other industries have not developed their share of GDP as in developed markets. India is also a large market with many internal barriers to trade which has made it difficult to create corporations that operate throughout the country. The MCAP/GDP ratio was around 10% until the 1980s. The ratio has been rising since then, exceeding 100% in 2007, but now around 60%. The trend in the MCAP/GDP is rising and should continue up for the rest of the decade.

The government debt/GDP ratio has generally been low, but greater than the MCAP/GDP ratio. The ratio stayed around 20% between the 1800s and the 1950s. It has risen since then, reaching around 60% of GDP today, about the same as market capitalization. Stock market capitalization has overtaken government debt and it is likely to remain greater than government debt for the rest of the decade.

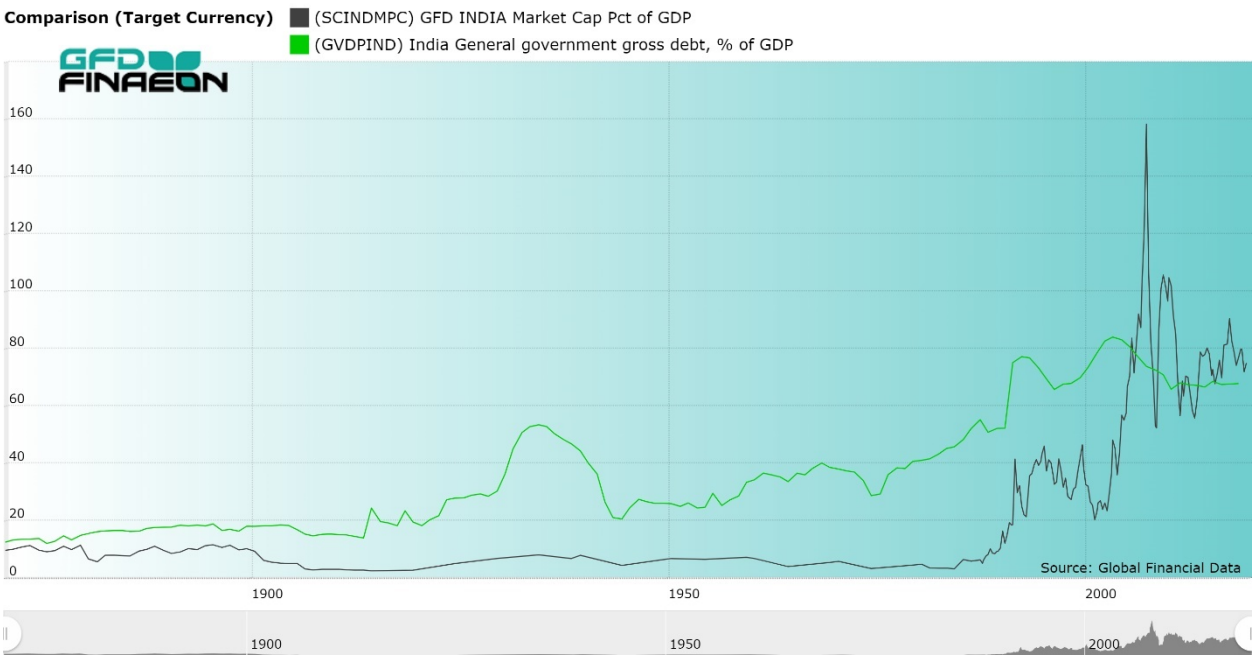


Figure 8.6. India Market Cap and Government Debt as a Share of GDP, 1861 to 2019

7. Exchange Rate

The Indian Rupee was tied to silver rather than gold in the 1800s. Since silver depreciated relative to gold in the 1800s and 1900s, currencies such as the Rupee fell in value compared with developed countries that were on the Gold Standard. Nevertheless, most of the depreciation in the value of the Rupee has occurred since the Reserve Bank of India has taken control of the money supply. India has had a high inflation rate relative to the rest of the world, averaging 7.70% during the past 50 years, as opposed to 3.91% in the United States. Consequently, the exchange rate between the US Dollar and the India Rupee has gone from around 2:1 in the 1800s to 75:1 today. The inflation rate in India continues to be greater than the inflation rate in the United States and the Indian Rupee is likely to continue its depreciation over time.

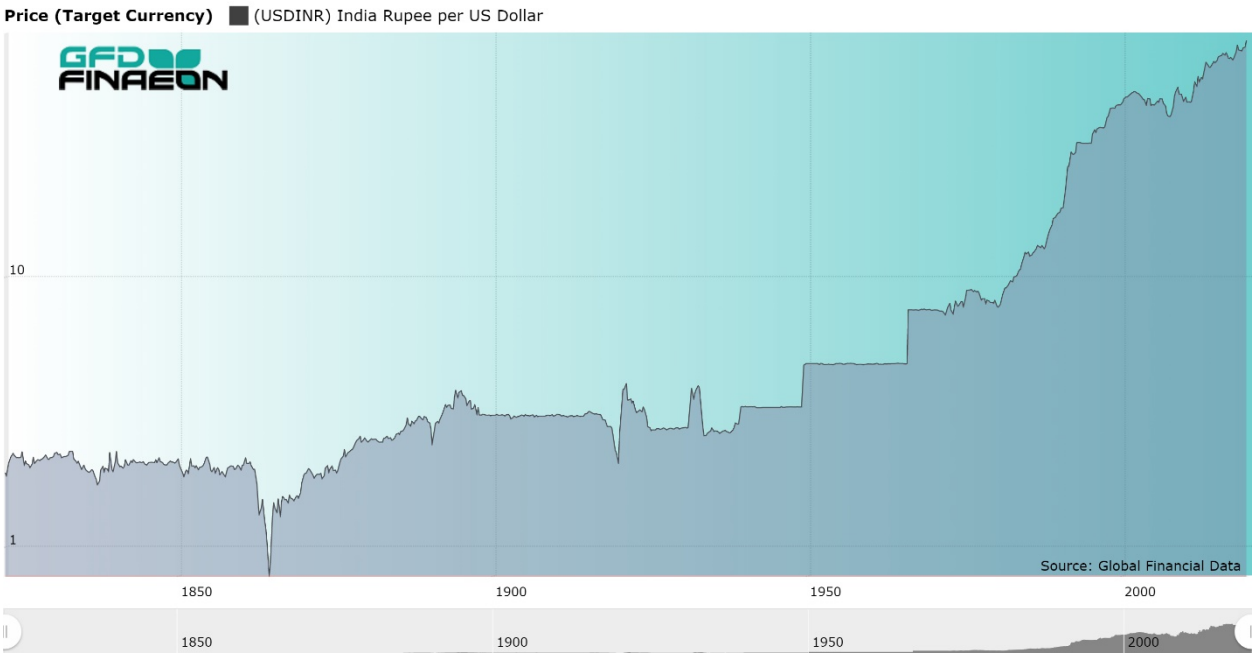


Figure 8.7. United States Dollar – India Rupee Exchange Rate, 1822 to 2019

8. Conclusion

Mughal India was one of the most advanced areas of the global economy in the 1700s, exporting textiles and spices to Europe and the rest of the world. Under the British East India Co. and the British Raj, Britain developed India's infrastructure, but it did not develop the economy. While the United States, Canada and Australia enjoyed dramatic increases in their GDP and investors received high rates of return in the 1800s and 1900s, India stagnated. It has only been during the period of Globalization since 1981 that the Indian economy has opened itself to the rest of the world and growth has returned to the country. India will soon have the largest population of any country in the world, but it may be several decades before India has the largest economy in the world.

India is a developing economy that is still restrained by its attempt to grow its economy. The computer industry has done well in India, but there are many other opportunities for growth in the Indian economy. Bond yields are between 6-8%, so unlike in Europe, stocks have to perform well in order to beat the bond market. This is likely to occur during the coming decade, but by how much remains to be seen.

Ireland

1. Sources

Stock data is available for Ireland since 1784 when shares in the Grand Canal began trading in Dublin. Shares in the Royal Canal began trading in 1789. In the 1830s, shares in Irish banks began trading and in the 1840s, shares in Irish Railroads were issued. Although Ireland was part of the United Kingdom, Irish bonds and shares traded in Dublin rather than in London. This fact enables us to create indices of Irish stocks from the 1780s until the present. Ireland became a separate country in 1922 and joined the European Union in 1973. We have been able to collect data from Dublin newspapers until the 1980s to create an index that links up with the indices calculated by the Dublin Stock Exchange today.

Data on bonds issued on the behalf of Ireland and guaranteed by London were issued in 1891. Since the Irish bonds were guaranteed by London, British consols can be used as a proxy for Irish bonds before 1891. In 1923, Ireland issued its own bonds and Irish bonds have been used since then. Cash data uses UK T-bills before 1923, Irish Central Bank Deposits from 1923 to 1969 and Irish T-bills since 1969.

2. Returns to Stocks, Bonds and Bills

The Irish stock market has always been small by comparison with the British stock market. The two canal stocks, the Royal Canal and Grand Canal, did poorly in the early 1800s, eventually going bankrupt. Irish stocks really made no price progress until the late 1950s when stocks began steady growth for the rest of the century. Stocks rose in price until 1973, paused until 1982, then rose in price until 2008 when the financial crisis pummeled the Irish economy. The market declined by 80% between 2007 and 2009 as the banks which had lent freely before 2007 collapsed in value. The Dublin Stock Exchange joined Euronext in 2019, but the value of the 40 stocks that are listed on Euronext Dublin are worth a little over $100 million.

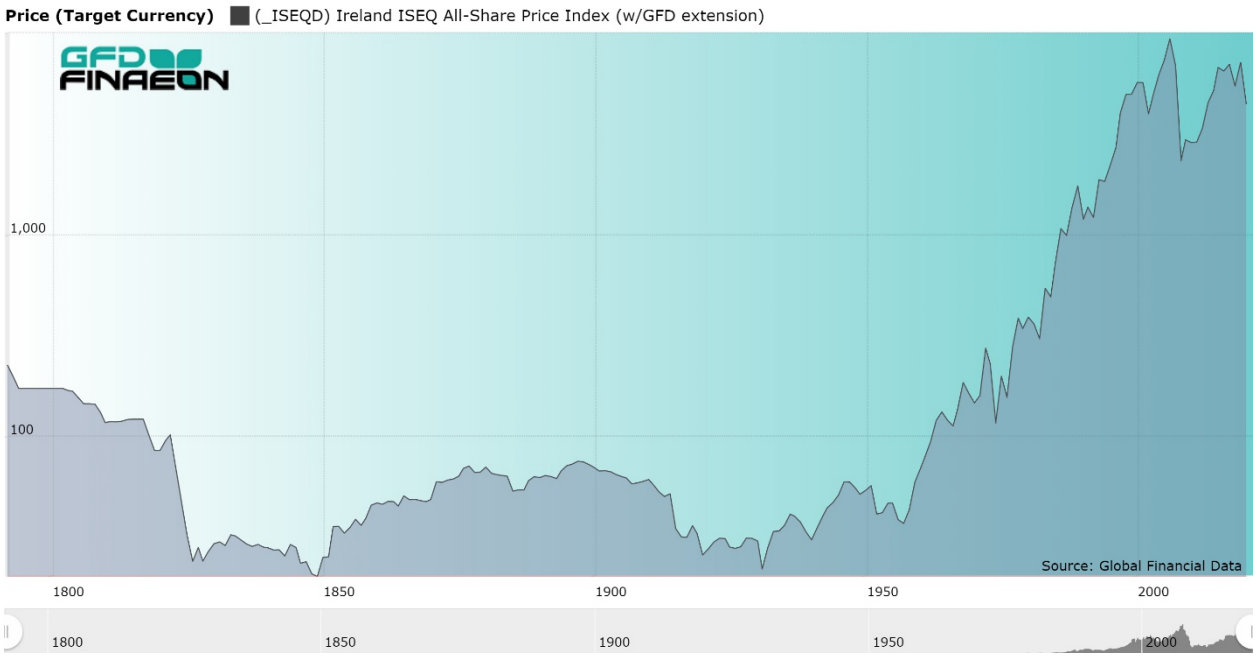


Figure 9.1. Ireland Stock Index, 1789 to 2019

Irish stocks provided a 4.89% return between 1848 and 1914, but only 3.45% between 1914 and 1981. Irish stocks did well after 1981, returning 8.04% between 1981 and 2019, but stocks have returned only 2.55% during the 2010s. Bonds lost 2.33% per annum between 1945 and 1981 as bond yields rose from 1.92% in 1933 to 19.16% in 1982. Bonds returned 6.97% between 1981 and 2019, but only 3.03% in the 2010s. When the financial crisis hit in 2007, the government acquired the loans of its bank which had collapsed causing a dramatic increase in the level of government debt. Fear of default by the Irish government sent bond yields up from 3.06% in 2005 to 14.08% in 2011. Since then, bond yields have collapsed down to negative yields in 2020 as the risk of default has receded.

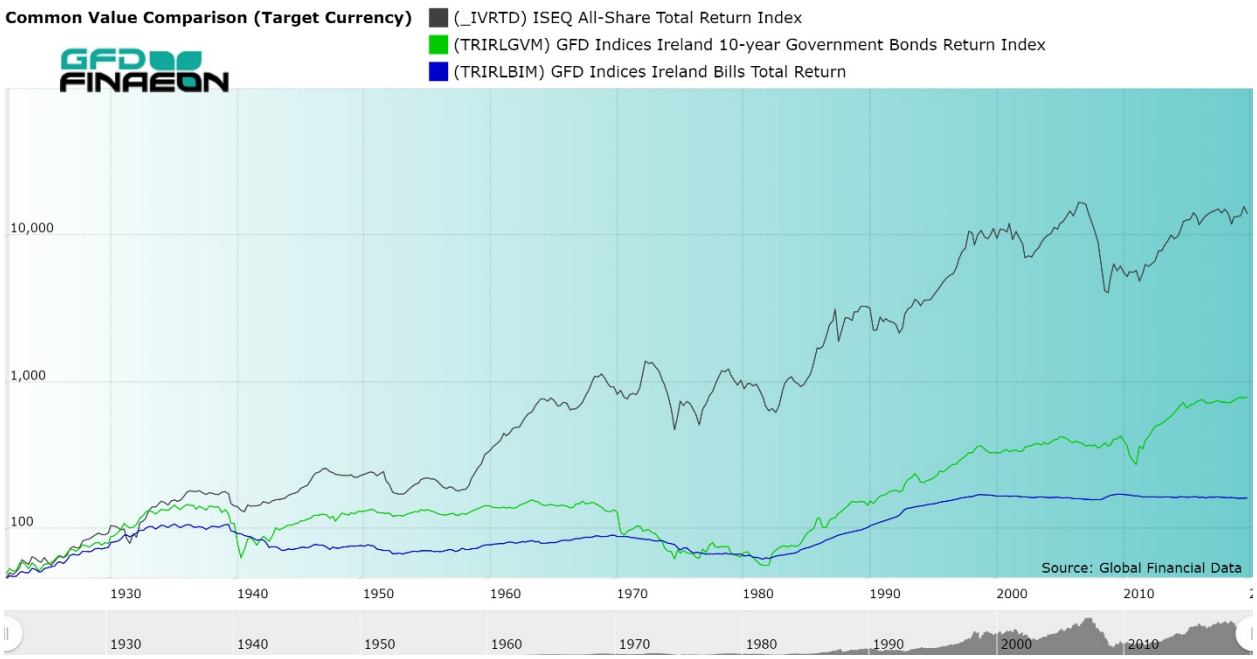


Figure 9.2. Ireland Real Return in USD to Stocks, Bonds and Bills, 1922 to 2019

Although Ireland was an engine of growth between 1982 and 2007, the country is struggling to reestablish itself as a viable exporter once again. The stock market has made no progress during the twenty-first century while fixed-income investors have received very small returns as well. Until Ireland can find new opportunities for growth, it seems unlikely that the growth between 1957 until 1999 will return.

Years By Decade	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
1809-1819	-4.35	-2.65		4.86		-0.81
1819-1829	-8.47	-5.92		6.84		-2.24
1829-1839	-1.55	2.37		1.59		0.61
1839-1849	-0.66	4.51		6.44		-1.97
1849-1859	6.9	12.13		2.4		0.04
1859-1869	-3.64	0.72		0.05		0.54
1869-1879	5.75	10.74	6.17	5.32	4.31	-0.43
1879-1889	-0.51	4.08	2.73	2.63	1.31	-0.33
1889-1899	1.32	5.43	2.79	2.28	2.56	0
1899-1909	-4.19	-0.15	-1.02	0.63	0.88	0.77
1909-1919	-14.33	-9.51	-9.57	-5.69	0.07	7.69
1919-1929	2.88	10.35	10.29	9.25	0.05	-3
1929-1939	0.63	5.67	3.71	3.39	1.89	0.7
1939-1949	-5.73	-0.95	-3.23	-7.24	2.36	5.21
1949-1959	0.7	6.67	3.92	3.09	2.64	3.69
1959-1969	6.27	11.41	-0.74	1.73	12.24	4.30

1969-1979	-0.76	4.54	-2.78	1.17	7.53	13.07
1979-1989	8.4	13.4	9.06	4.33	3.99	8.74
1989-1999	5.81	8.78	5.32	2.77	3.28	2.37
1999-2009	-4.11	-1.6	6.15	3.97	-7.30	2.74
2009-2019	4.74	6.87	3.03	-3.99	3.73	0.74
By Era						
1792-1848	-3.96	-1.76	6.87	4.62	-8.07	-0.48
1848-1914	0.3	4.89	1.47	2.11	3.37	-0.07
1914-1945	-2.52	3.35	2.33	1.6	0.99	3.58
1945-1981	-1.73	3.54	-2.33	-0.83	6.00	7.06
1981-2019	5.05	8.04	6.97	2.36	1.00	2.77
To Present						
1809-1899	3.72	-0.68	3.34		3.37	-0.34
1899-1999	4.46	-0.25	4.81	1.33	3.44	4.23
1809-2019	3.91	-0.39	3.96		6.37	2.01
1899-2019	4.05	-0.17	4.43	1.86	2.52	3.81
1919-2019	1.79	6.41	3.38	1.75	2.94	4.14
1969-2019	2.71	6.28	4.08	1.6	2.11	5.43
1999-2019	0.22	2.55	4.57	-0.09	-1.94	1.73

Table 9.1. Ireland Real Returns to Stocks, Bonds, Bills, ERP and Inflation, 1809 to 2019

3. Equity Risk Premium

The 10-year Equity-Risk Premium for Ireland between 1874 and 2019 is provided in Figure 9.3. Although there were periods during which the ERP was negative, the ERP has been positive during most of the time since the 1940s. There were periods in the 1920s, 1930s, 1950s, and post-2000s when the ERP was negative, but these periods were in the minority. During the twenty-first century, the ERP has been negative, but with bond yields close to zero at present it seems unlikely that the ERP will remain negative for the rest of the decade.

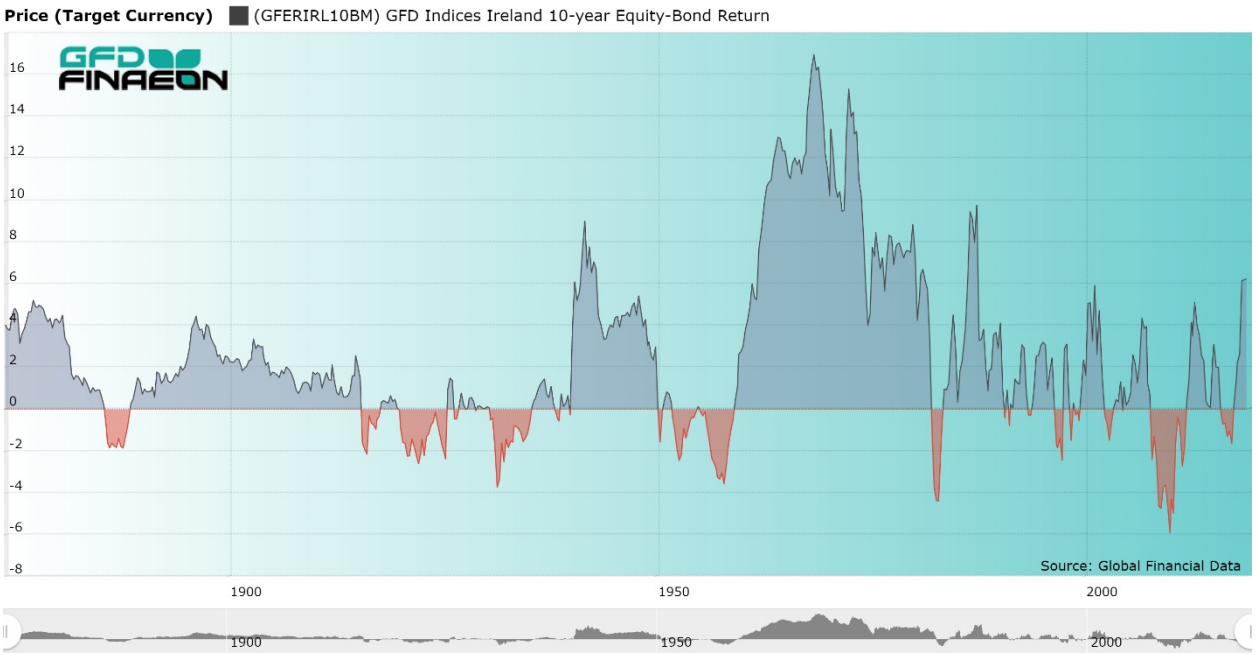


Figure 9.3. Ireland 10-year Equity Risk Premium, 1874 to 2019

4. Bull and Bear Markets

A history of bull and bear markets in Ireland is provided in Table 9.2. Ignoring the decline between 1793 and 1850 which is primarily based upon two canal companies, the largest bear market occurred between 2007 and 2009 when the stock market collapsed by over 80%. Two bear markets saw declines of over 60% between 1898 and 1921 (67%) and 1973-1975 (61%).

Ireland enjoyed three major bull markets in which the stock market climbed over 400% between 1958 and 1969 (445%), 1982 and 1987 (485%) and 1992 and 2001 (489%). The market doubled in value between 2011 and 2018. Although expecting another quadrupling of the market seems overly optimistic, a doubling of the market in the near future is possible.

Date	Bear Loss	Date	Bull Gain
		01/31/1793	
03/30/1850	-92.17	02/28/1898	304.47
3/31/1921	-67.36	7/31/1929	30.08
12/31/1931	-31.97	6/30/1937	86.96
8/31/1940	-26.33	7/31/1947	111.85
2/28/1958	-43.44	3/31/1969	445.47
2/28/1971	-29.34	3/31/1973	104.42
1/31/1975	-61.20	3/31/1976	81.98
12/31/1976	-22.91	5/31/1981	169.50
7/31/1982	-30.10	10/13/1987	485.71
12/7/1987	-46.71	8/10/1989	99.37
10/19/1992	-40.78	6/22/2001	489.81
10/9/2002	-43.94	2/20/2007	175.72

3/9/2009	-80.80	9/17/2009	81.04
9/12/2011	-31.34	1/23/2018	203.73
12/21/2018	-25.48	2/21/2020	34.29
3/18/2020	-39.69		

Table 9.2. Ireland Bull and Bear Markets, 1793 to 2020

5. Stock and Bond Yields

A graph of the yield on the 10-year Irish bond during the past 150 years is provided in Figure 9.4. The general trend in bond yields was downward until 1897, then rose for the next forty years, peaking at 10.42% in August 1940. Bond yields declined to 4.19% in 1954 before rising to 19.16% in February 1982. Like other countries, the bond yield declined until 2005 when the yield hit 3.06%, but the financial crisis pushed yields up to 14.08% in 2011. Bond yields have since declined to negative levels. Ireland's bond yield history clearly differs from that of the rest of the developed world, primarily because of the yield spikes in 1940 and 2011, but barring any additional risks of default in the near future, bond yields should remain low for the rest of the decade.

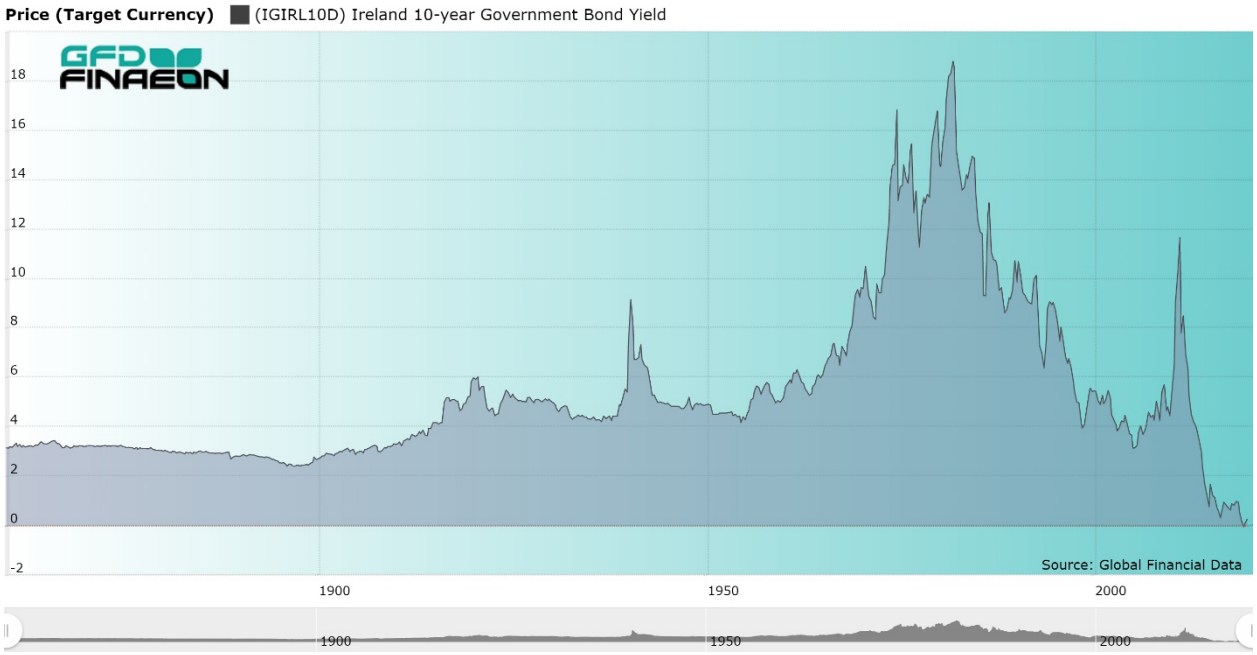


Figure 9.4. Irish 10-year Government Bond Yield, 1860 to 2019

The yield on stocks was greater than the yield on government bonds until the 1940s. During the war, higher yields on government bonds exceeded the yield on stocks. This reversed in the early 1950s, but returned to higher government bond yields in the late 1950s as bond yields began their inexorable rise. While most countries saw bond yields exceed stock yields after the financial crisis of 2008, this was not true in Ireland. The poor condition of Irish banks meant that they had to be taken over by the Irish state. These actions added to the amount of outstanding government debt and raised interest rates to extremely high levels. It wasn't until fears of Irish default on government bonds abated and interest rates began to fall that Ireland

joined the rest of Europe in enjoying low bond yields and a stock yield that exceeded the country's government bond yield. Now that Irish bond yields are less than 1%, stock yields are likely to exceed government bond yields for some years to come.

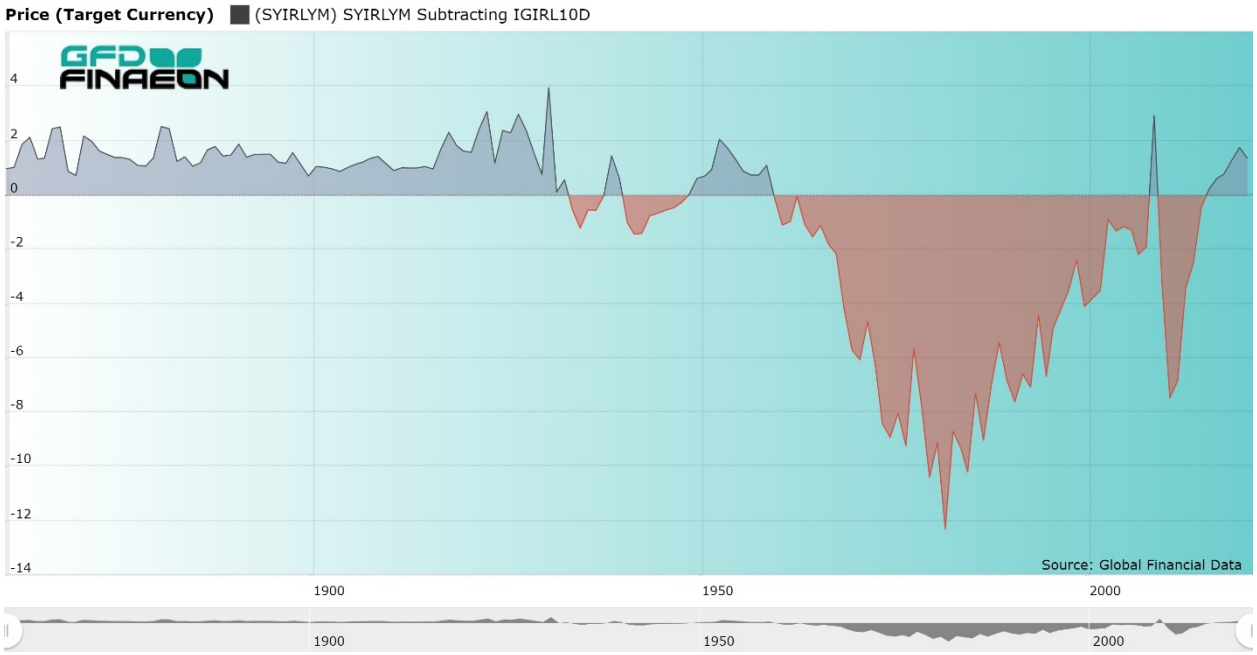


Figure 9.5. Ireland Stock Yield Minus Government Bond Yield, 1860 to 2020

6. Stock Market Capitalization and Government Debt Share of GDP

Stock market capitalization as a share of GDP has averaged around 50% during most of Ireland's history. Most of the companies in Ireland are finance and service-oriented rather than being in the area of manufacturing. Ireland has factories for many foreign companies, but few domestic industries have emerged. Although the stock market's capitalization probably exceeded GDP during the boom of the 1960s, it quickly declined to around 20% in the early 1980s. The collapse of the financial market in 2008 drove the market cap/GDP ratio below 20%, and even today, the Market Cap/GDP ratio remains below 40%. Ireland took on excessive debt in the 1980s when the government debt/GDP ratio exceeded 100%. This government debt gradually declined until the financial crisis of 2007 when the Irish government took on the debts of the banks that failed and government debt once again exceeded GDP. The government debt/GDP ratio has since fallen to around 60%. Neither market cap nor government debt have ever been excessive in Ireland, and that is unlikely to change in the near future.

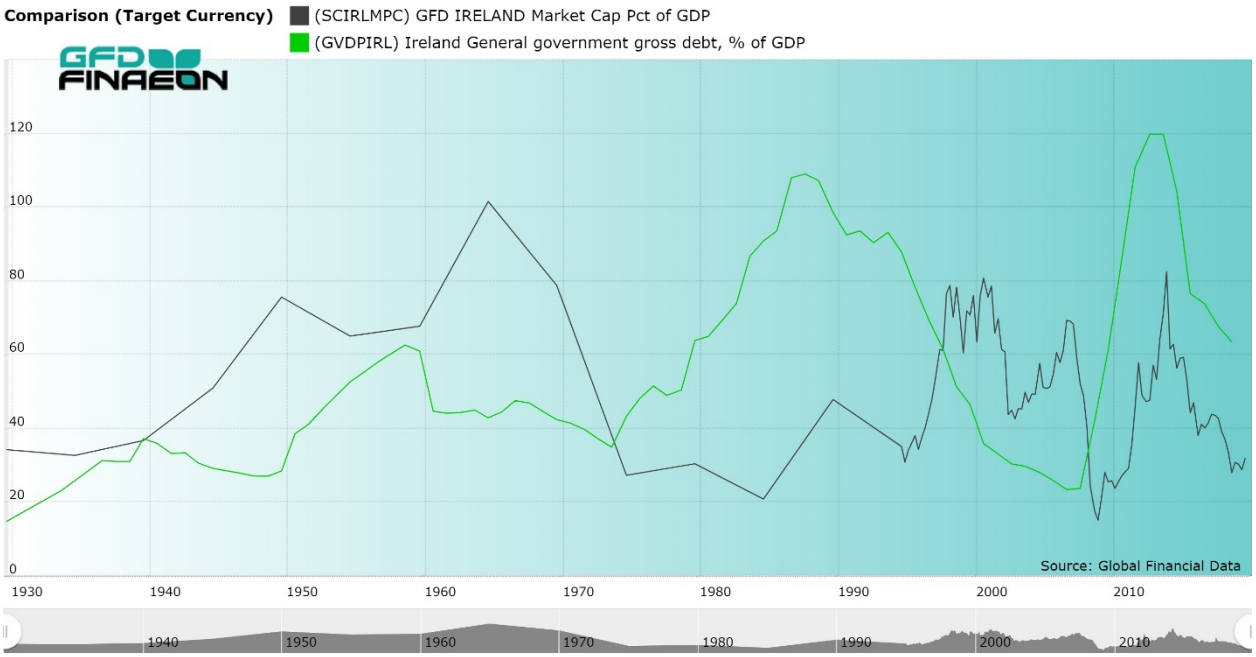


Figure 9.6. Ireland Stock Market Cap and Government Debt as a share of GDP, 1930 to 2019

7. Exchange Rate

The Irish Pound/Punt was tied to the British Pound Sterling until the 1970s when the Irish Pound began floating independently of the British Pound. Ireland suffered less inflation than the United Kingdom and the Punt appreciated relative to the British Pound. The Euro replaced the Punt in 1999 and Ireland's economic policy is now run by the European Central Bank.

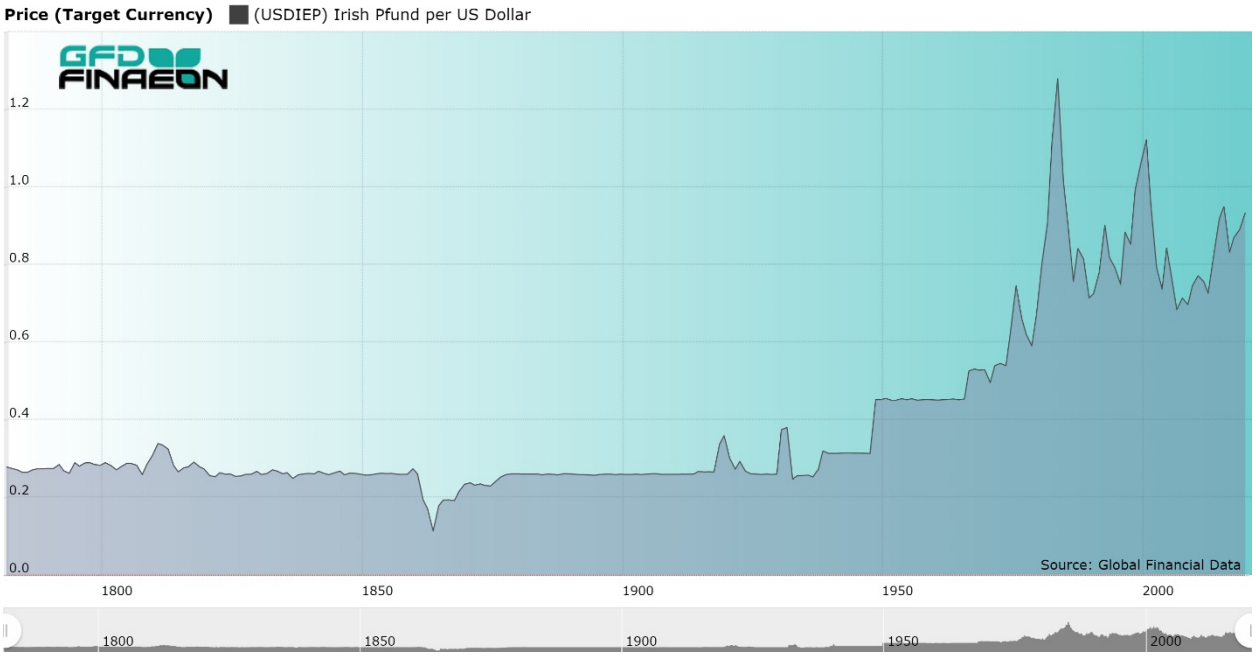


Figure 9.7. United States Dollar – Irish Punt/Euro Exchange Rate, 1782 to 2019

8. Conclusion

Ireland has a small market that includes a little less than 5 million people, fewer than were in Ireland before the Great Potato Famine of the 1840s. There are fewer than 40 companies listed on Euronext – Dublin and the Dublin stock exchange has never been worth more than $250 million. There is little opportunity for investment in Ireland, and Irish investors depend on the United States and United Kingdom for more investment opportunities. Many foreign companies are located in Ireland, but few Irish companies have an international reach. Since Ireland is part of the Eurozone, fixed-income returns will be small in the years to come as will equity returns. Irish investors should be thankful that they are not limited to Ireland for their investment opportunities.

Italy

1. Sources

Italy has one of the poorest performing stock markets of any of the countries that are covered in this survey. The Milan Stock Exchange was founded in 1808 and common stocks started trading on the Milan Stock Exchange in 1861. Until 1997, there were smaller stock exchanges in Turin, Trieste, Venice, Genoa, Florence, Bologna, Rome, Naples and Palermo. These exchanges were all merged into the Borsa Italiana in 1997. The current capitalization of the Italian stock market is around $800 million and includes around 350 companies. Italy has had excessively high government debt and historically has had high inflation rates which reduced returns to investors.

Indices calculated by Prof. Bachi are used from 1905 to 1930, indices calculated by Prof. Guarneri from 1930 to 1939 and the Gruppo Edison from 1939 to 1973. The Banco Commerciale Italiana calculated an index beginning in 1973, but the BCI index was discontinued in 2019. The FTSE Italia All-Share Index is currently used.

Schmelzing provides annual interest rate data from different states that existed in Italy until 1806. Since Italy didn't exist as a unified country until 1861, bonds from Naples and Rome are used until Italy emerged in 1861. The Italian Rentes, which initially paid 5% interest and was lowered to 3.75% in 1906 and 3.5% in 1912 are used from 1862 to 1954. Since 1954, bonds with a maturity of six years are used and beginning in 1989, the 10-year bond is used. The Banca d'Italia Discount Rate is used from 1867 until 1921, private bills from 1922 to 1939 and Treasury bills from 1939 to date.

2. Returns to Stocks, Bonds and Bills

Italian stocks and bonds have performed very poorly during the past 100 years. Ignoring dividends, Italian stocks gained only 2.42% per annum in real US Dollars between 1929 and 2019. If you compare this with the 6.62% that US stocks returned during the same period of time, Italy's underperformance is quite obvious. If you look at Figure 10.1, which shows the performance of Italian stocks between 1905 and 2019, the large increase in the price of stocks between 1932 and 1960 is deceptive because most of this increase occurred due to inflation. Stocks fell in value sharply during the inflation of the 1940s, bounced back until 1960, but since 1960, as measured in real US Dollars, Italian stocks have made little progress, merely doubling in price between 1959 and 2019. During the past 100 years, both bonds and bills have lost money in real US Dollars.

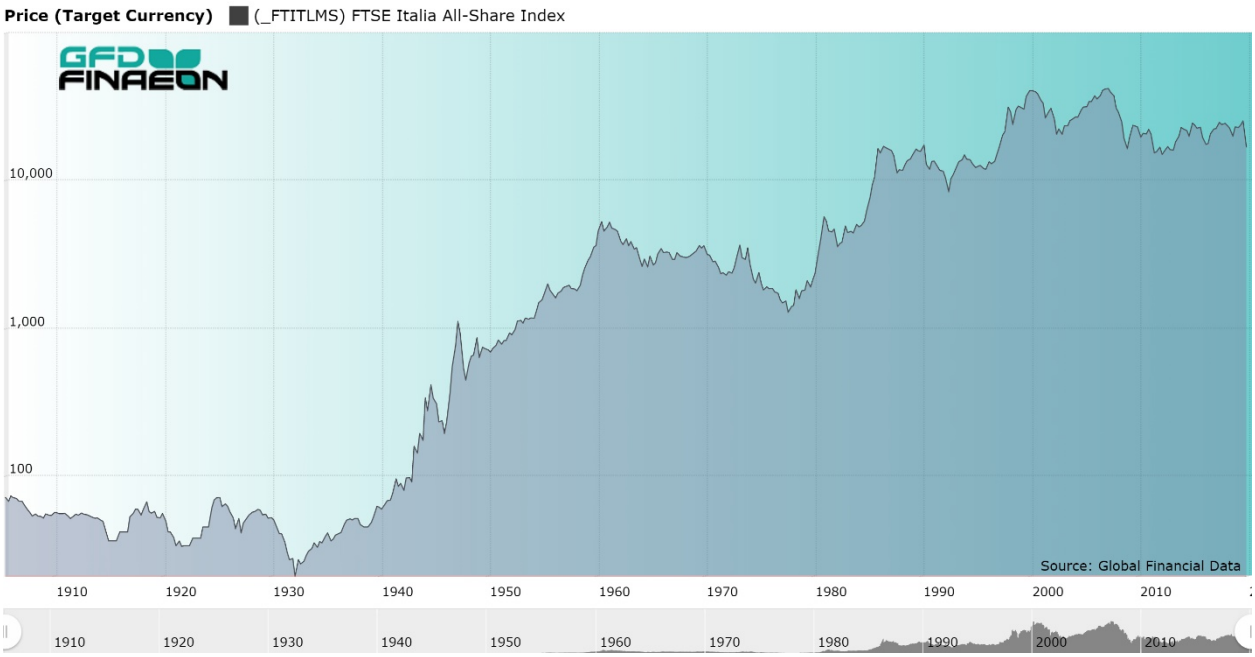


Figure 10.1. Italy Stock Price Index, 1905 to 2019

On the other hand, both stocks and bonds have performed well since 1981. Stocks returned 9.76% and bonds 10.62% per annum. This was driven mainly by the decline in inflation. The bond yield hit 22.37%. Before joining the Euro, Italy had high rates of inflation, but joining the Euro enabled Italy to control inflation allowing bond yields to decline from Italian levels to Euro levels. The yield declined to under 1% in 2019 providing a huge gain to bondholders. However, this was a one-off benefit to fixed-income investors which will not be repeated. Were Italy to every leave the Euro, bond yields would rise imposing losses on fixed-income investors.

The Italian stock market peaked in 2000 and has remained below the 2000 level throughout the twenty-first century. Similarly, with 10-year bond yields under 2% and 3-month Treasury bills around zero, there is unlikely to be any return to fixed-income investors during the coming decade. As was true in the twentieth century, the prospects for Italian investors do not look good in the decade to come.

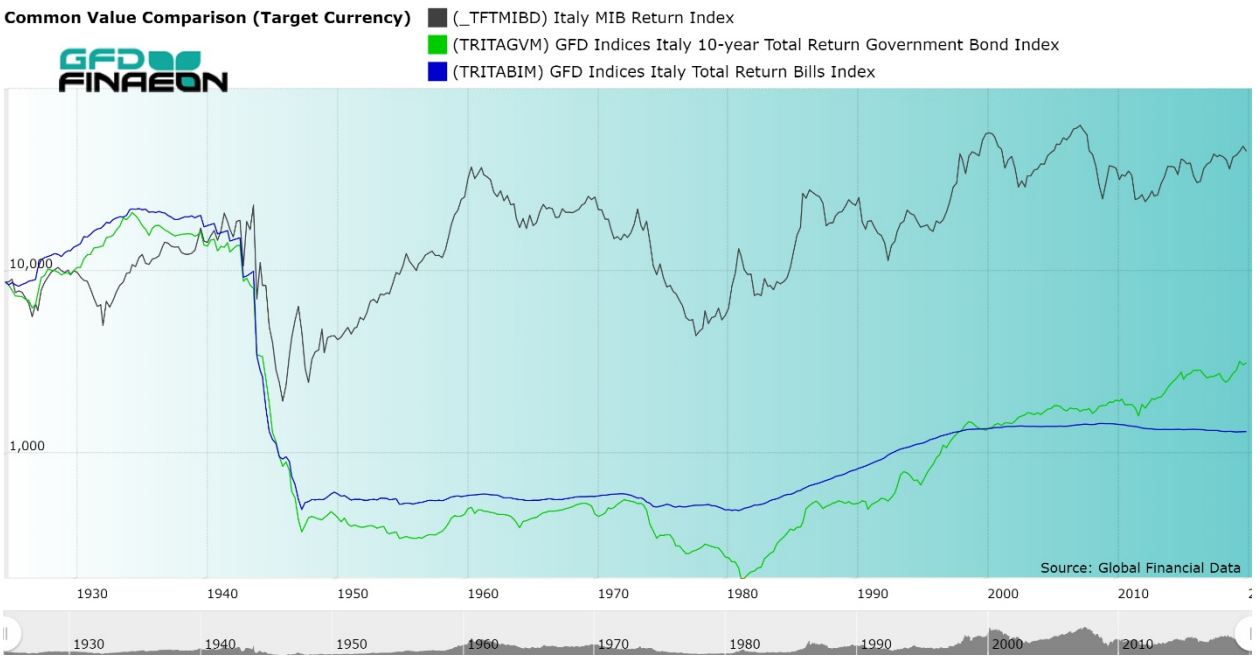


Figure 10.2. Italy Returns to Stocks, Bonds and Bills, 1925 to 2019

Italy had high inflation when the Italian Lira was Italy's currency, but since the Euro was introduced in Italy, inflation has been under control. Bond yields fell from 14.25% in 1995 to 3.88% in 1999 when Italy joined the Euro, providing a one-time benefit to fixed-income investors. These capital gains will not be available in the future. GDP has shown no real growth since 2003 so the prospect for improvement in the stock market seems small. Italy provides few opportunities to investors.

Years By Decade	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
1809-1819			11.98			
1819-1829			12.96			
1829-1839			5.32			
1839-1849			21.77			
1849-1859			4.83			
1859-1869			-1.29			0.1
1869-1879			12.74	5.46		1.45
1879-1889			6.37	5		-0.64
1889-1899			5.85	5.24		-0.19
1899-1909			2.64	2.67		0.75
1909-1919	-9.04		-7.3	-3.75	-1.51	11.17
1919-1929	-9.65		-6.99	-3.68	-2.81	8.58
1929-1939	-2.74	1.67	1.07	0.19	0.6	0.35
1939-1949	-9.03	-7.21	-25.33	-25.21	24.27	49.56
1949-1959	15.36	21.7	1.77	2	19.58	3.89
1959-1969	-2.68	1.05	2.38	1.11	-1.29	3.71
1969-1979	-14.51	-11.94	-3.24	1.01	-8.98	12.89

1979-1989	12.4	16.37	6.68	5.31	9.08	10.43
1989-1999	1.42	4.94	6.49	2.15	-1.45	3.98
1999-2009	-3.51	-0.1	6.87	3.94	-6.52	2.21
2009-2019	-3.33	-0.51	1.67	-3.99	-2.15	1.12
By Era						
1848-1914			4.88			0.69
1914-1945	-8.71		-8.72	-8.21		18.54
1945-1981	-0.87	2.89	-4.98	-2.7	8.28	8.43
1981-2019	1.84	4.48	6.75	3.65	-2.12	3.66
To Present						
1809-1899			8.77		3.37	
1899-1999			-2.65	-2.21	3.44	2.92
1809-2019			2.76		6.37	
1909-2019	-2.67		-1.9	-2.27	2.52	9.13
1919-2019	-2.01		-1.34	-2.12		8.93
1969-2019	-1.89	1.34	3.62	1.63	3.3	6.92
1999-2019	-3.42	-0.31	4.24	-0.11	3.22	1.66

Table 10.1. Italy Returns to Stocks, Bonds, Bills, ERP and Inflation, 1809 to 2019

3. Equity Risk Premium

Although the Equity-Risk Premium was positive between 1940 and 1970, since 1970, the ERP has been negative more years than it has been positive. Italian equities have performed poorly during the past 50 years while the yield on bonds declined from over 20% in 1981 to under 2% today. The ERP was positive in the late 1980s and mid-2000s, but has generally been negative in all other years. This will change in the decade to come because bond yields have been in the range of 1%-3%. This is higher than in most Eurozone countries, but still provides a low bar for stocks to beat. Although Italian equities provide poor investment opportunities, returns to fixed-income seem even worse.

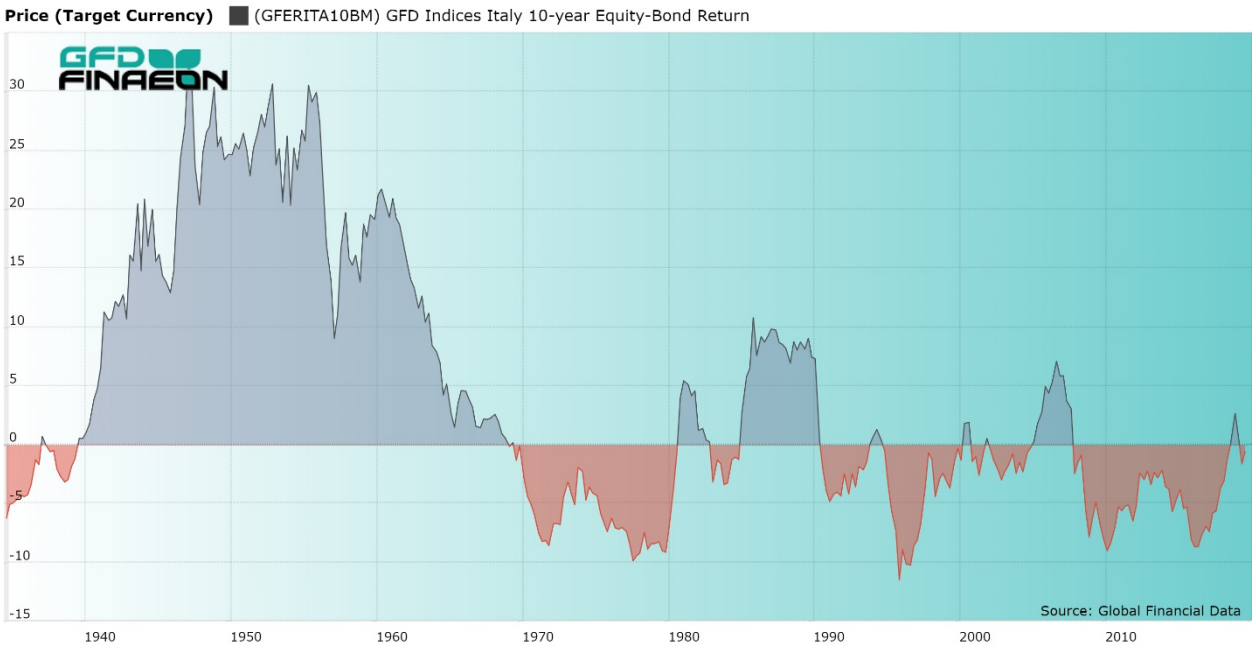


Figure 10.3. Italy 10-year Equity-Risk Premium, 1935 to 2019

4. Bull and Bear Markets

Table 10.2 provides a history of bull and bear markets in Italy between 1906 and 2019. Because of Italy's high inflation rate, the numbers between the 1930s and 1980s can be deceptive. The average annual inflation rate in the 1940s was almost 50% which would have wiped out any returns to stocks had shares not advanced so sharply. More modest bull markets after 1990 occurred primarily because of lower inflation. The 1932-1944 bull market was primarily driven by inflation, but the 1948-1960 bull market was a real bull market with stocks rising 18.9% per annum after inflation between 1949 and 1959. A second strong bull market occurred between 1977 and 1986.

There have been 20 bear markets in Italy since 1906 and of those, eleven bear markets showed a decline of over 50%. The strength of the bear markets in Italy has contributed to the poor performance of stocks in Italy. Although stocks haven't seen a decline over 50% since 2007-2009, stocks remain below their 2000 high. Weak bull markets in the twenty-first century have contributed to weak bear markets.

Date	Bear Loss	Date	Bull Gain
		3/31/1906	
12/31/1915	-50.26	7/31/1918	85.09
7/31/1921	-51.33	2/28/1925	134.65
6/30/1927	-46.59	2/28/1929	46.72
5/31/1932	-65.41	12/31/1944	1877.01
4/30/1946	-59.51	5/31/1947	661.50
3/31/1948	-65.12	9/9/1960	1275.06
1/14/1965	-59.33	4/24/1970	47.99
11/24/1971	-39.17	6/19/1973	66.93
12/22/1977	-66.15	6/3/1981	431.93

7/22/1982	-49.58	5/20/1986	516.86
2/9/1988	-53.32	6/19/1990	78.97
9/16/1992	-53.22	5/13/1994	100.04
12/5/1995	-31.75	4/6/1998	201.21
10/9/1998	-36.46	3/10/2000	106.80
3/12/2003	-56.36	5/18/2007	127.21
3/9/2009	-69.32	10/19/2009	83.31
7/24/2012	-46.25	4/15/2015	91.27
6/27/2016	-35.29	5/7/2018	61.77
12/27/2018	-26.17	2/19/2020	39.43
3/12/2020	-41.15		

Table 10.2. Italy Bull and Bear Markets, 1906 to 2019

5. Stock and Bond Yields

We have over 700 years of history on Italian bonds as is illustrated in Figure 10.4. 4% appears to be the lower limit on bond yields during the past 500 years, so the current decline in bond yields to under 1% seems exceptional. There have been several periods of high bond yields during the past 200 years, during the Napoleonic Wars of the 1800s and 1810s, during the fight for a united Italy in the 1850s, and during the inflation of the 1960s to 1980s. In each case, bond yields eventually declined to the 4% level before rising once again. Bond yields are low today because Italy is part of the Eurozone. Yields should remain low as long as Italy remains within the Eurozone, but if Italy were to ever leave, bond yields would rise once again.

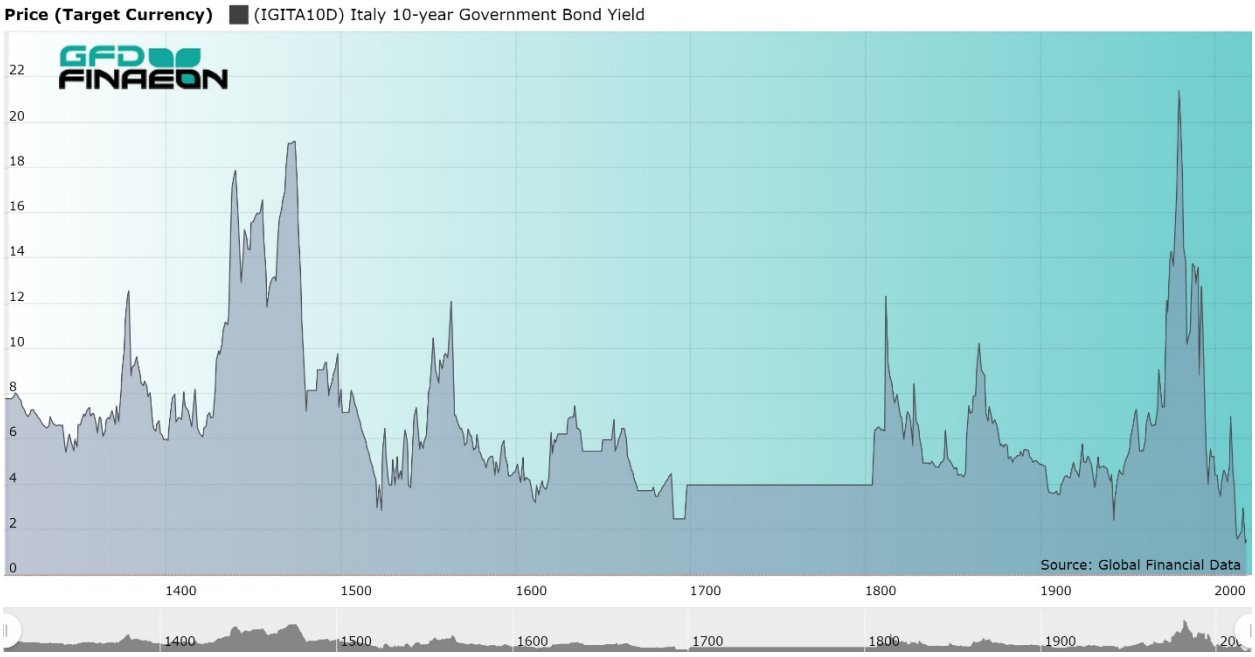


Figure 10.4. Italy Yield on Government Bonds, 1311 to 2019

Although the stock yield exceeded the bond yield in most countries until the 1950s, this was not true in India. As Figure 10.5 shows, the bond yield has exceeded the stock yield during

most years since 1940. High bond yields in Italy, primarily because of inflation, have meant that high bond yields have been greater than stock yields between 1940 and 2012. This difference reached almost 20% in the 1980s, but shrank after that. Only during the past few years when membership in the Euro enabled Italy to issue bonds at low interest rates has the stock yield exceeded the bond yield. In 2020, Italian 10-year bonds yield around 1.5%, higher than most Euro countries, but low enough that stock yields exceed bond yields.

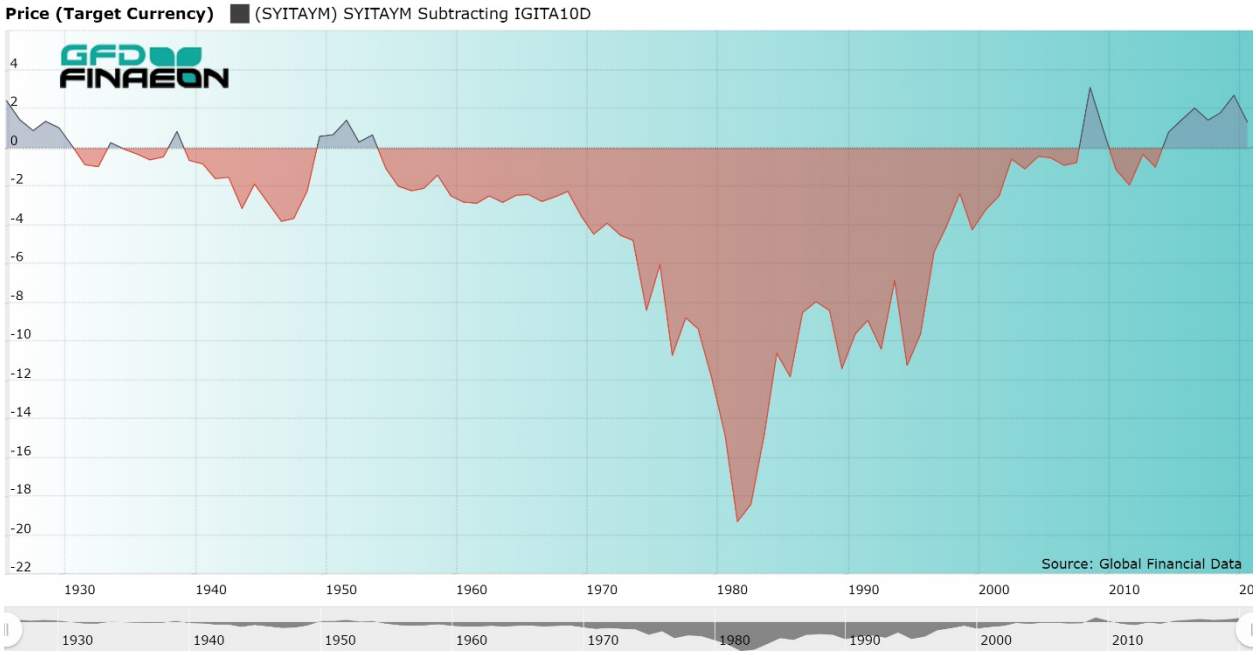


Figure 10.5. Italy Stock Yield Minus Government Bond Yield, 1926 to 2020

6. Stock Market Capitalization and Government Debt Share of GDP

As Figure 10.6 shows, government debt has almost always exceeded the stock market's capitalization in Italy. If you look at the countries in which government debt has exceeded stock market capitalization as a share of GDP, those countries have provided low returns to investors. Although Italy was able to reduce its government debt/GDP ratio during the 1940s when Italy suffered double-digit inflation, large deficits between 1970 and 1995 pushed the government debt/GDP ratio back above 100%. Today, government debt is around 130% of GDP while market capitalization is around 40%. The main factor constraining future growth in government debt is the fear that Italy would be kicked out of the Eurozone if it returned to running high deficits. This is another sign of the poor prospects for investors in Italy.

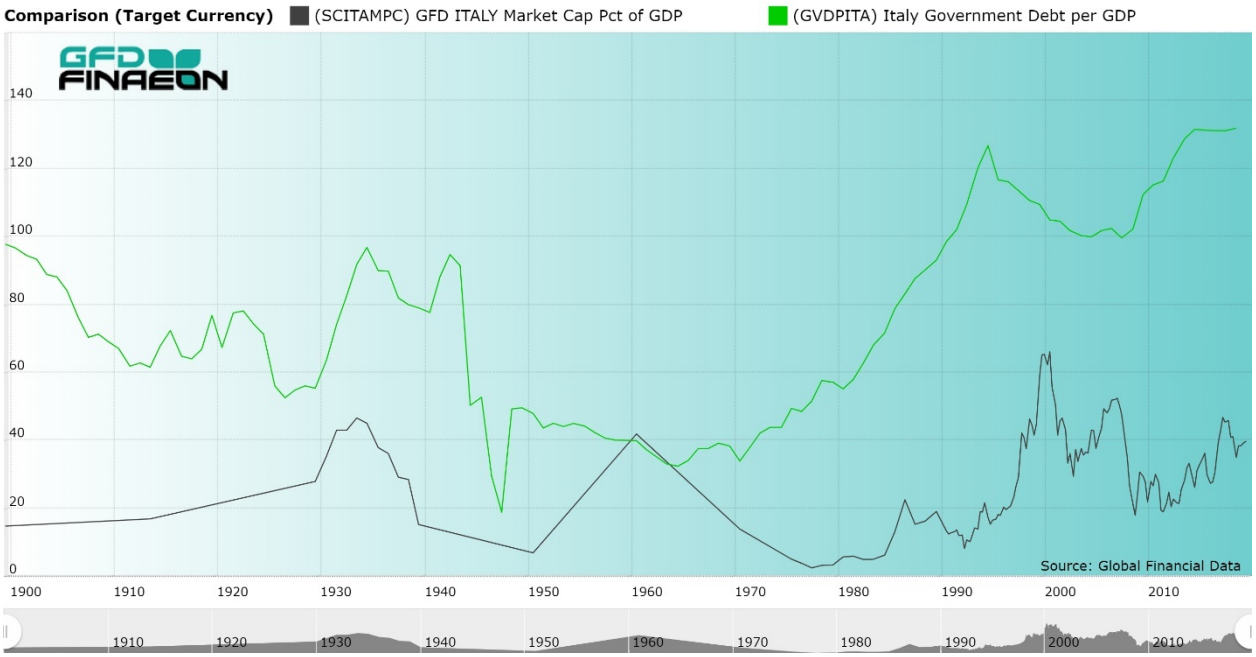


Figure 10.6. Italy Market Capitalization and Government Debt as a Share of GDP, 1900 to 2019

7. Exchange Rate

The Italian Lira was linked to the French Franc at par with 5 Italian Lira equal to 1 U.S. Dollar in the 1800s. Between 1914 and 1999, the Italian Lira depreciated steadily because of high inflation in Italy. By 1949 there were 625 Lira to the U.S. Dollar and by the time the Lira linked itself to the Euro, there were about 2000 Lira to the U.S. Dollar. These changes can be seen in the steep rises in the exchange rate in Figure 10.7. Now that the Euro has replaced the Lira, the exchange rate in Italy has stabilized, but if Italy were to leave the Euro, Italy's new currency would be likely to depreciate as occurred before 1999.

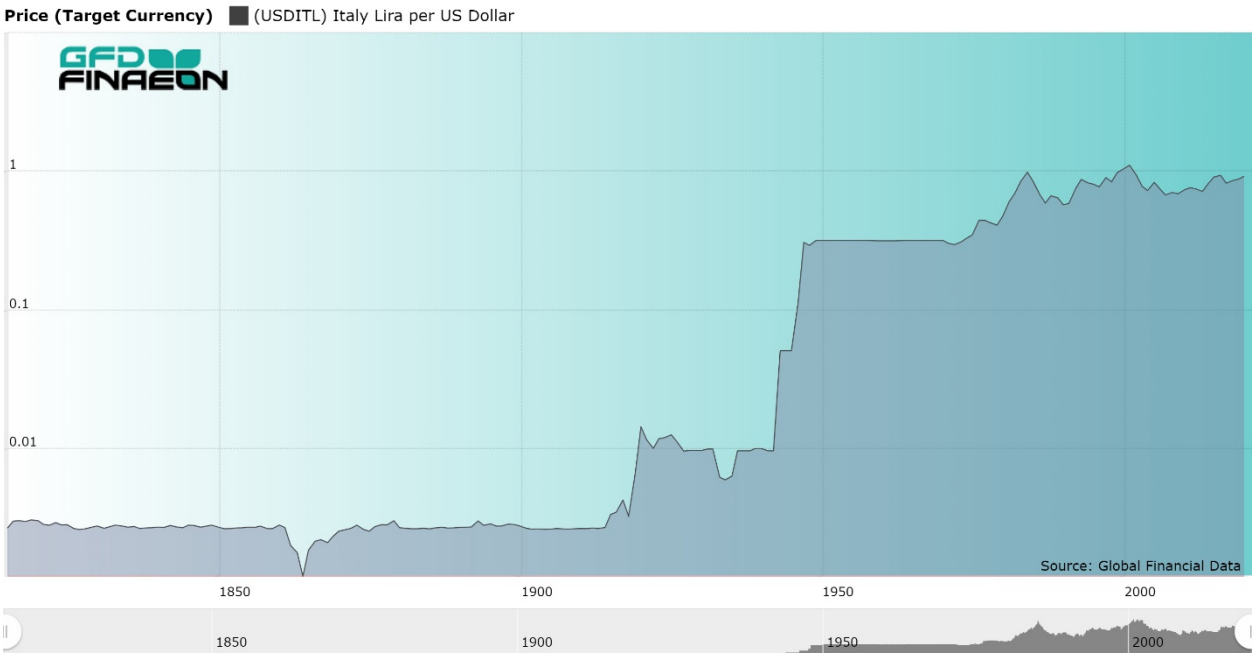


Figure 10.7. United States Dollar-Italian Lira/Euro Exchange Rate, 1815 to 2019

8. Conclusion

Italy has provided some of the lowest returns of any country covered in this survey. Since 1929, stocks have returned 2.42% per annum in real US Dollars, significantly less than the 6.62% that stocks returned in the United States. During the past 100 years, investments in bonds and bills provided lower returns than inflation. There were two periods when stocks and bonds did well, between 1948 and 1960 and between 1981 and 1999, but during most other periods investments did poorly. It would be nice to say that Italy could make up for these poor returns in the future, but there seems little prospect of this. Bond yields are below 2%. This is higher than in many other Eurozone countries, but bond yields remain low compared to historic norms. Cash is yielding zero. The stock market remains below where it was at in 2000 when the market peaked, and with no growth in GDP since 2003, it seems unlikely that a new bull market will return to the stock market soon. Italy has been a poor place to invest in the past, and there seems little prospect this will change in the near future.

Japan

1. Sources

Japan has one of the largest stock markets in the world. In 1989 during the stock market bubble, the capitalization of its stock market exceeded that of the United States. Now, with over 3500 companies an market capitalization at $5 trillion, the Tokyo Stock Exchange is just one-fifth of the size of the United States.

Japan had one of the most dramatic periods of growth in history between 1949 and 1989. The stock market returned 17.57% per annum during those 40 years. The stock market gained 2.34% per annum between 1889 and 1939, then lost 29% per annum in the 1940s as the economy was devastated by World War II. The Japanese stock market index remains below the high it reached in 1989 when the market capitalization of the Tokyo Stock Exchange was greater than the market cap of the United States. During the past decade, Japanese stocks have bounced back, though it remains far from the peak of the bubble in 1989.

The National Bank Index is used from 1914 until 1932 and the Oriental Economist Index is used from 1932 until 1949 when the Tokyo Stock Exchange reopened and the Nikkei 225 was introduced. The two main indices for Japanese stocks are the Nikkei 225 and the TOPIX index. The Nikkei 225 has been calculated daily since 1949 and is an average modelled after the Dow Jones Industrials Average. The Topix covers the entire Tokyo stock market, is cap-weighted, and was introduced in 1968.

Japan issued bonds in London in 1870 and sterling-denominated bonds are used from 1870 until 1930. Bonds issued in Tokyo are used beginning in 1930. 7-year bonds are used between 1961 and 1971 and 10-year bonds are used beginning in 1972. Cash relies upon the overnight discount rate or overnight call money between 1882 and 1959. Treasury bills are used beginning in 1960.

2. Returns to Stocks, Bonds and Bills

Japan enjoyed one of the most dramatic bull markets in history between 1949 when the Tokyo Stock Exchange reopened after World War II and 1989 when the Japanese bubble burst. Japanese stock performance was mediocre prior to World War II with stocks returning 2.34% per annum between 1889 and 1939 while bonds provided a 1.28% annual return. Japan was completely devastated by World War II as can be seen in Figure 11.2. Stocks declined 29.43% per annum between 1939 and 1949 in real US Dollars, a total decline of 97%. Bonds and cash did even worse, losing 36.75% and 36.91% per annum respectively in real US Dollars, a total decline of 99%.

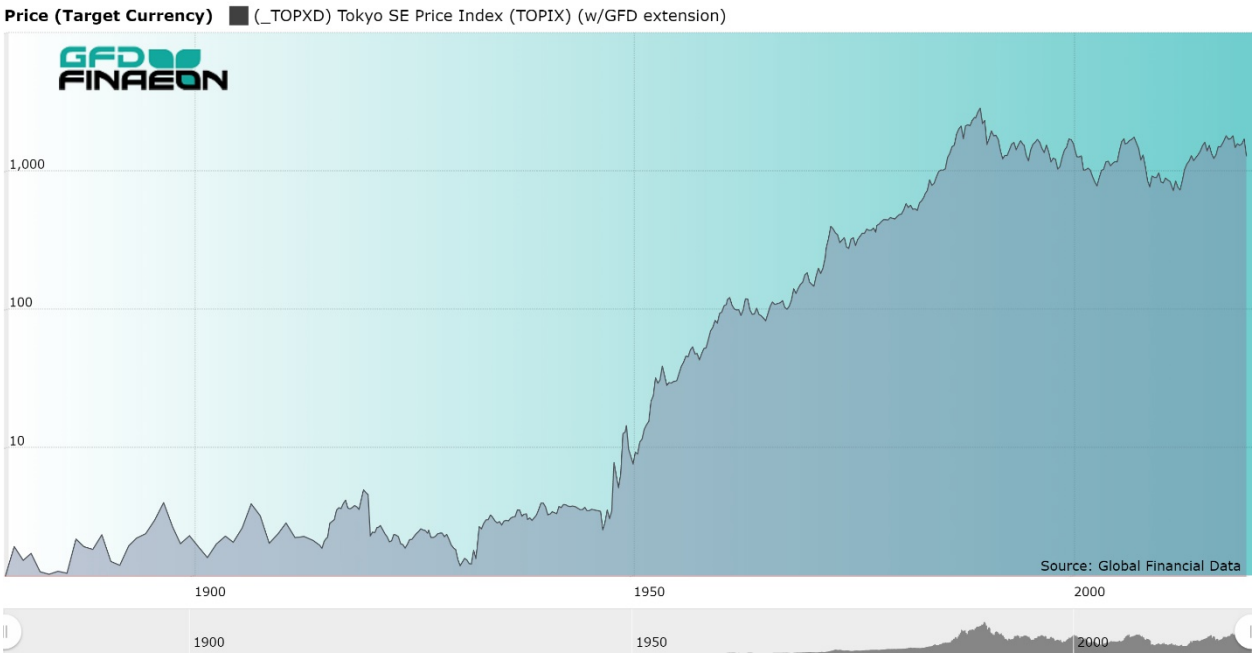


Figure 11.1. Japan Stock Price Index, 1879 to 2019

As the saying goes, the best time to invest is when there is blood in the streets and that certainly characterized Japan in 1949. Between 1949 and 1989, Japan had the most remarkable recoveries in stock market history with stocks returning 17.57% per annum over those 40 years. Of course, by 1989, the Japanese stock market was vastly overvalued. By then, the royal palace in Tokyo, in theory, was worth more than all of California and the Japanese stock market was worth almost 40% of all the stocks that were listed in the world. Between 1989 and 2008, stocks lost 82% of their value as the Nikkei index plunged from 38915 to 7162. Japan went from being the best performing stock market in the world to the worst. The stock market has recovered since then but is still worth less than half what it was worth in 1989.

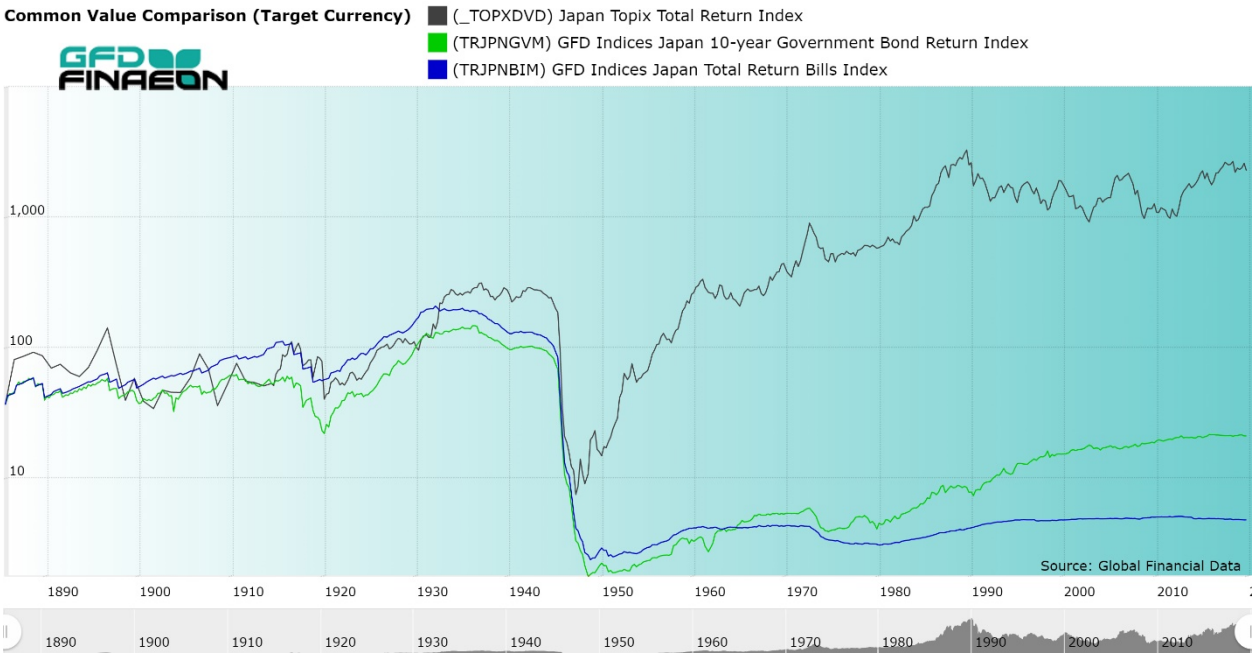


Figure 11.2. Japan Returns to Stocks, Bonds and Bills, 1882 to 2019

Fixed income has done poorly in Japan, showing net losses in real US Dollars since 1899. The decline in bond yields since 1980 from 9.97% to negative yields today enabled fixed-income investors to receive capital gains and positive returns, but with bonds and bills providing negative yields for five years now, there is little likelihood of any return to fixed-income in the decade to come.

Years	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
By Decade						
1869-1879			8.14			-1.31
1879-1889	0.46		5.21		-6.38	-3.18
1889-1899	-4.82	-2.25	0.29	2.47	-2.54	6.72
1899-1909	-1.99	0.07	3.79	4.93	-3.59	3.47
1909-1919	-0.14	6.49	-5.71	-2.01	12.93	9.15
1919-1929	-8.09	-0.45	8.94	6.69	-8.61	-3.71
1929-1939	2.15	8.28	-0.33	-2.53	8.64	3.43
1939-1949	-33.4	-29.43	-36.75	-36.91	11.56	54.15
1949-1959	20.73	30.99	5.9	5.96	23.70	3.43
1959-1969	5.74	10.22	8.53	3.41	1.55	5.53
1969-1979	6.56	8.92	3.59	2.2	5.15	8.80
1979-1989	20.34	21.52	9.34	5.29	11.13	2.33
1989-1999	-4.51	-3.73	7.29	3.16	-10.27	1.07
1999-2009	-7.64	-6.51	0.73	-1.28	-7.19	-0.29
2009-2019	3.15	5.39	-1.61	-3.16	7.11	0.59
By Era						

1914-1945	-9.62	-3.43	-6.62	-7.93	3.41	6.96
1945-1981	5.55	10.75	-0.71	-2.48	11.54	14.36
1981-2019	3.45	3.86	4.04	2.18	-0.17	0.67
To Present						
1899-1999	-0.44	4.08	-0.63	-1.96	4.74	7.85
1899-2019	-0.77	3.26	-0.6	-2.01	3.88	6.53
1919-2019	-0.71	3.26	-0.5	-2.67	3.78	6.58
1969-2019	3.13	4.65	3.79	1.19	0.83	2.45
1999-2019	-0.14	-2.39	-0.74	-0.45	-0.29	0.15

Table 11.1. Japan Returns to Stocks, Bonds, Bills, ERP and Inflation, 1869 to 2019

3. Equity Risk Premium

Figure 11.3 provides a graph of the 10-year Equity-Risk Premium in Japan from 1895 until 2019. The ERP was generally positive from 1932 until 1989, but since the Japanese stock bubble burst in 1989, bonds have generally outperformed stocks, if only because stocks have done so poorly. During the 1950s, the ERP was over 20% for most of the decade. The ERP then declined to the single digits in the 1960s, but remained positive through 1989. The ERP was negative during most of the 1990s and 2000s as the stock market declined, but the ERP has returned to being positive during the past few years, as the stock market has provided positive returns. With no return to bonds or cash probable in the coming decade, the ERP is dependent upon the performance of the stock market. Positive returns to the stock market will mean a positive ERP.

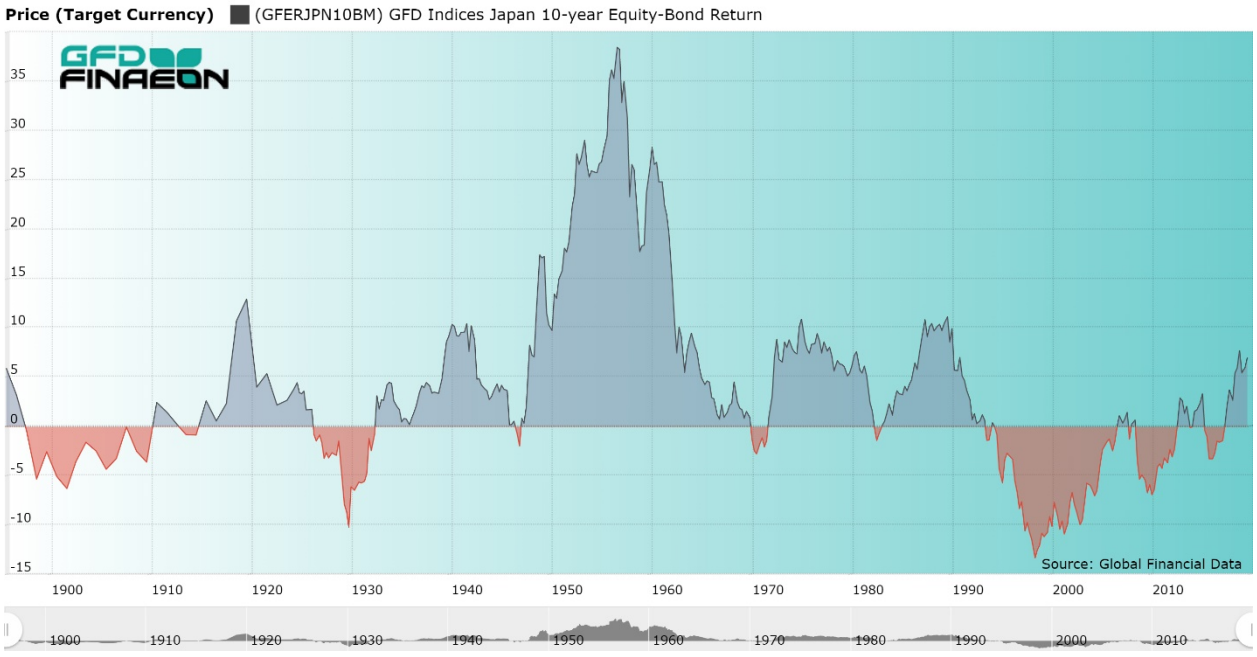


Figure 11.3. Japan 10-year Equity-Risk Premium, 1895 to 2019

4. Bull and Bear Markets

A history of bull and bear markets in Japan since 1883 is provided in Table 11.2. Since the Japanese stock market hit its top 30 years ago, it is difficult to determine whether the Japanese stock market has been stuck in a 30-year bear market or if it has bottomed out and begun a series of bull markets that will eventually bring the stock market to a new high. Japan has been through seven bear markets with declines of more than 50%, the most recent one being in 2007-2012. Although the nominal declines in the stock market were small after World War II, after adjusting for inflation, the Japanese stock market declined by over 90% between 1942 and 1949. Similarly, although there were periodic bear market rallies after 1989, between 1989 and 2008, the Japanese stock market had a total decline of over 80%.

The bull market between 1974 and 1987 saw the Japanese stock market rise by almost 800% and if you extend the bull market to 1989, the Japanese stock market saw a total increase of 1900%, a 22% increase per annum. There were two bull markets during which Japanese stocks increased in price by over 400%, but the 1946-1949 bull market occurred during a roaring inflation that reduced its real return to investors. The 1950-1953 bull market, on the other hand, occurred without high inflation and helped the Japanese stock market recover from the post-war decline.

It may be decades before the Japanese stock market returns to its 1989 high. Japan's population is shrinking and its GDP remains stagnant. Japan has the prospect for modest growth, but whether that will ever bring the stock market back to the levels of 1989 is questionable.

Date	Bear Loss	Date	Bull Gain
12/31/1883	-36.92	12/31/1889	92.86
12/31/1891	-39.81	12/31/1896	184.10
12/31/1901	-59.98	12/31/1906	144.81
12/31/1914	-52.40	8/31/1917	145.92
2/28/1919	-23.16	1/31/1920	44.31
6/30/1924	-63.13	2/28/1926	41.17
10/31/1931	-49.94	10/31/1942	200.60
8/31/1946	-34.62	8/31/1949	497.86
6/30/1950	-51.11	2/4/1953	451.23
11/13/1954	-36.49	1/21/1957	104.63
12/12/1957	-21.23	7/14/1961	193.17
10/30/1962	-34.13	4/4/1963	49.19
7/15/1965	-34.66	4/1/1970	127.99
5/27/1970	-19.71	1/24/1973	183.91
10/9/1974	-40.36	6/11/1987	796.40
1/4/1988	-25.15	12/29/1989	70.45
8/18/1992	-61.74	6/13/1994	55.35
6/25/1995	-30.34	6/28/1996	43.52
10/15/1998	-40.72	2/7/2000	72.87
3/11/2003	-56.08	2/26/2007	135.78
6/4/2012	-61.72	8/10/2015	143.17
2/12/2016	-29.27	1/23/2018	59.77
3/16/2020	-35.31		

Table 11.2. Japan Bull and Bear Markets, 1883 to 2019

5. Fixed-Income Market

Japan first issued bonds in London in 1870. Bond yields declined until World War I when yields reached around 4%. Japan controlled bond yields during World War II, and after the war, Japan issued very few bonds until the 1970s. Because bond markets were so thin, Japanese bond yields rose to double-digit levels. Japan has issued excessive amounts of debt during the past two decades and Japan's government debt/GDP ratio at over 200% is one of the highest ratios in the world; however, a good portion of this debt is owned by the Japanese government. Bond yields have been virtually zero for five years now and show little prospect of increasing.

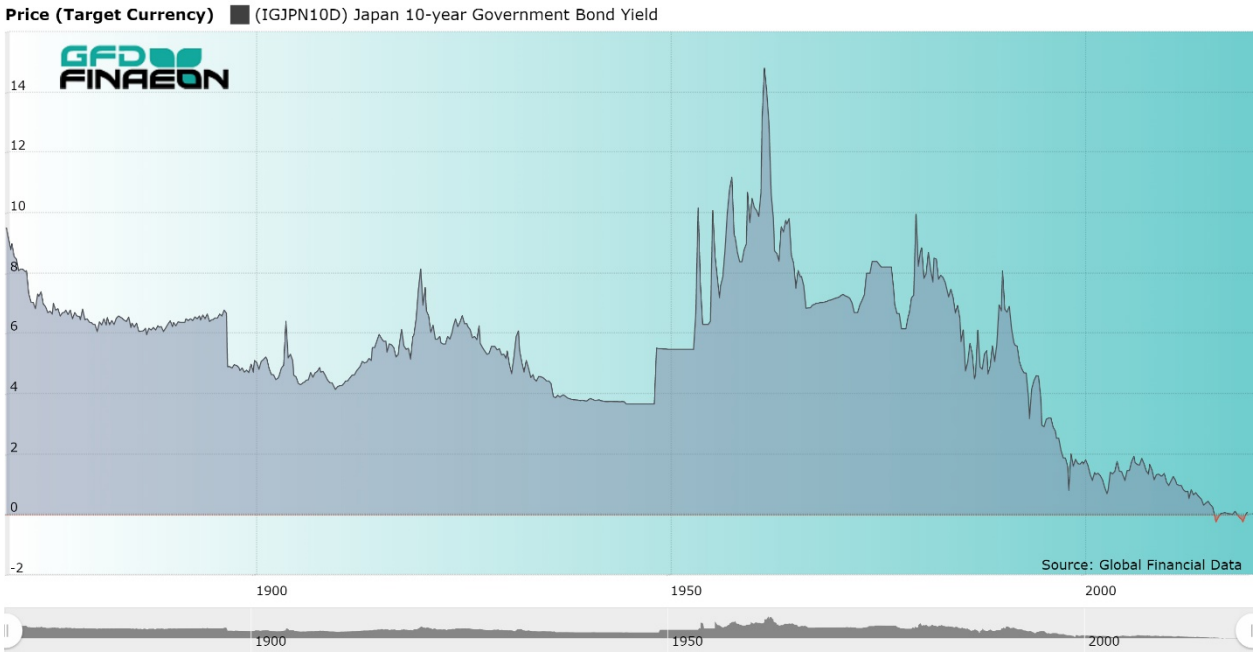


Figure 11.4. Japan 10-year Government Bond Yield, 1870 to 2019

For the most part, Japan follows the typical pattern of stock yields exceeding bond yields until the 1950s, a period when bond yields exceeded stock yields until the 2000s and then stock yields exceeding bond yields since then. However, there are some subtle differences. Bond yields hit their peak, relative to stock yields, in the early 1960s, rather than around 1980. Japan was one of the first countries to drive government bond yields close to zero in the 2000s, and this is reflected in the fact that stock yields exceeded bond yields immediately after the 2008 financial crisis. With bond yields negative or close to zero now for over a decade, stock yields continue to exceed bond yields as will remain true probably for the rest of the decade.

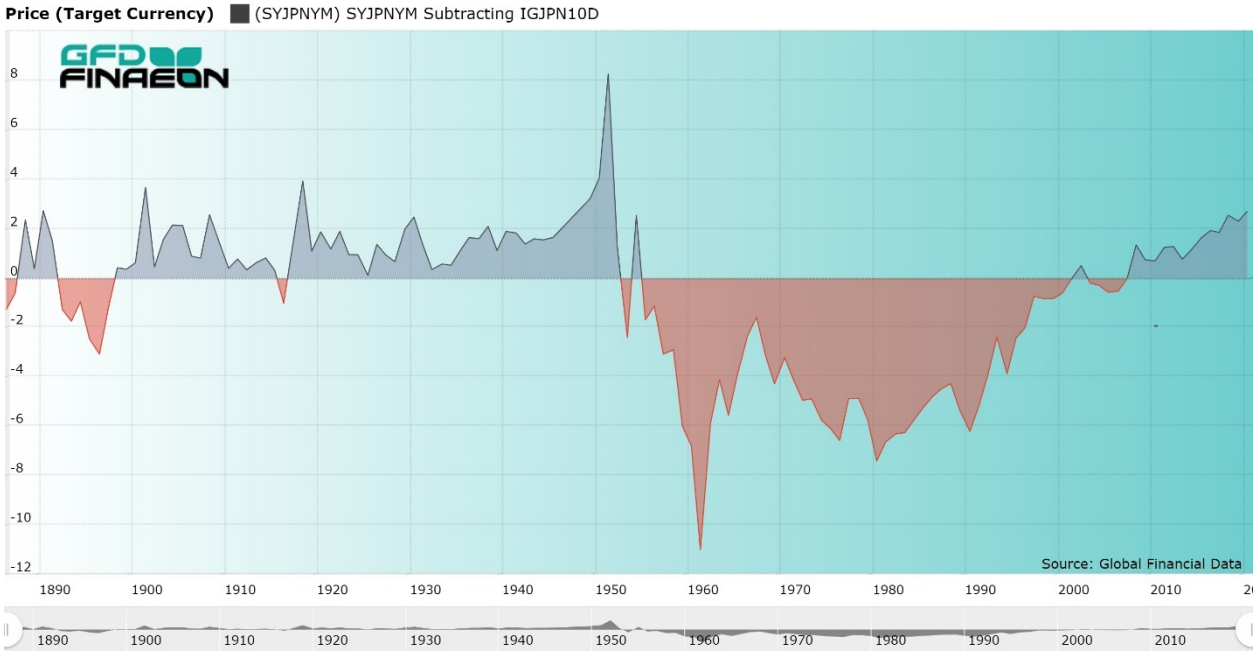


Figure 11.5. Japan Stock Yield Minus Government Bond Yield, 1890 to 2020

6. Stock Market Capitalization and Government Debt Share of GDP

Figure 11.5 shows the wild ride that Japanese government bonds have gone through over the past 100 years. Government debt rose during the Russo-Japanese War in 1905, then declined until 1920. The government bond/GDP ratio exceeded 200% right after World War II, though mainly because GDP had collapsed. The inflation that followed wiped out the debt and decreased the government debt/GDP to under 10%. Japan began running deficits and increasing its government debt in the 1970s. Since the popping of the financial bubble in 1989, Japan has run deficits trying to stimulate the economy, but this has done little more than add to the outstanding debt, a good portion of which is owned by the government. The government debt/GDP ratio is currently over 200%, though it seems to have leveled off during the past decade.

Before World War II, the market cap/GDP ratio was generally less than 25%, although the ratio rose to 50% during the 1930s. During the bubble of the 1980s, the market capitalization/GDP ratio rose from around 30% in 1980 to 150% in 1989. The market cap/GDP ratio declined to around 50%, but during the recent rally, the market cap/GDP ratio has risen to over 100%. The ratio is likely to remain around 100% for some years to come.

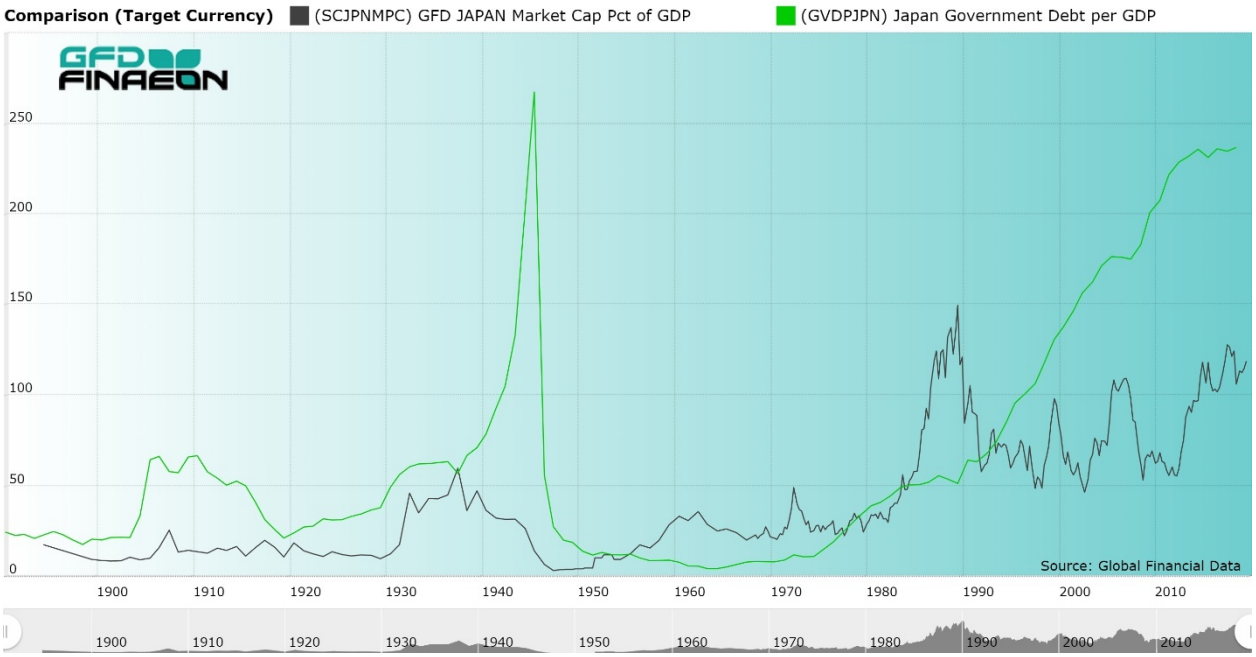


Figure 11.6. Japan Market Capitalization and Government Debt as a Share of GDP, 1890-2019

7. Exchange Rate

When the Japanese Yen was introduced in the 1860s, the Japanese Yen was worth more than the U.S. Dollar, but since the Japanese Yen was tied to silver it gradually depreciated until the Yen linked to gold in the 1890s. There was little change in the value of the Yen until the post-World War II inflation pushed the exchange rate up from around 4 to the US Dollar before the war to 360 Yen per US Dollar in 1949. Since the Yen began floating in the 1970s, the Yen has risen in value to around 100 Yen per US Dollar where the exchange rate has stabilized. It looks like the Yen is likely to remain in the 100 Yen range for some years to come.

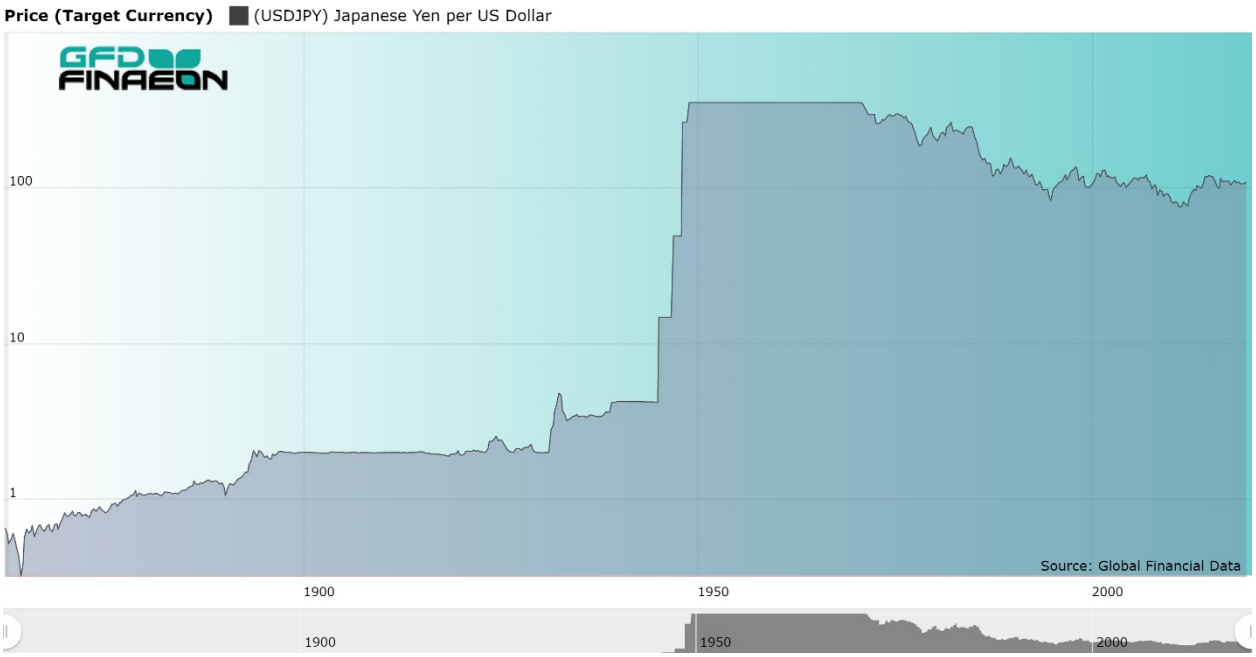


Figure 11.7. United States Dollar-Japanese Yen Exchange Rate, 1861 to 2019

8. Conclusion

The Japanese stock market has gone through some wild swings in the past because of the inflation of the 1940s and the financial Bubble of the 1980s. Japan has been trying to recover from the financial bubble of the 1980s for 30 years now. Japan's population is shrinking, prices have fallen and GDP remains stagnant. With little prospect of inflation, bond yields remain close to zero and show no tendency to increase in the near future. Japan has one of the largest bond markets in the world, but Japan's influence over the bond market keeps yields close to zero. Although the Japanese stock market has recovered during the past few years, whether the market continues to rally remains questionable.

Netherlands

1. Sources

Stock markets began in the Netherlands where investors actively traded shares of the Dutch East India Co. and the Dutch West India Co. These are the only two companies for which we have data in the 1600s. In the 1700s, not only did shares in the two Dutch companies trade in Amsterdam, but shares in the English and French East Indies companies traded there as well. By the late 1780s, foreign government bonds traded regularly in Amsterdam. Both the Dutch West India Co. and Dutch East India Co. went bankrupt during the Napoleonic Wars and the Batavia Republic defaulted on Dutch debt, which was reissued in 1814. During the 1800s, Amsterdam was primarily a place where foreign shares traded. American railroads, South African gold mines and other foreign shares were quite popular since the size of the Dutch stock market was small. Euronext Amsterdam includes about 100 shares and a capitalization of about $1 trillion, a large portion of which is taken up by Royal Dutch Shell.

The Central Bureau of Statistics (CBS) calculated an index for the Netherlands before World War II which included 50 stocks. Royal Dutch Shell has represented over one-third of the market capitalization of the Dutch stock market during the past 100 years so there has been a high correlation between the performance of Royal Dutch Shell and the Dutch stock market in general. The Amsterdam Stock Exchange All-Share index has been calculated on a daily basis since 1980.

Paul Schmelzing has calculated annual data on Dutch government bonds since 1400. Monthly data on Dutch government bonds begins in 1788. Outstanding Dutch bonds were consolidated into a single 2.5% bond in 1814 and this bond is used through 1930. Daily data for the 10-year Dutch bond is used beginning in 1978. The Central Bank Discount Rate is used from 1814 to 1860, the yield on private bills is used from 1860 to 1914, the Central Bank Discount Rate is again used from 1914 to 1918, the contango rate is used from 1919 to 1940 and the yield on T-bills is used from 1941 to date.

2. Returns to Stocks, Bonds and Bills

GFD has created an index of Dutch stocks in the 1600s and 1700s using data from the Dutch West India Co. and the Dutch East India Co.; however, we lack data on Dutch stocks in the 1800s. Data are available on Dutch stocks beginning in 1914 on a monthly basis. As Figure 12.1 illustrates, the Dutch stock market did poorly in the 1920s and declined until 1932 before it began to bounce back before World War II. The market did well in the 1950s, stagnated in the 1960s and 1970s, then moved up sharply in the 1980s and 1990s. It has stagnated since then.

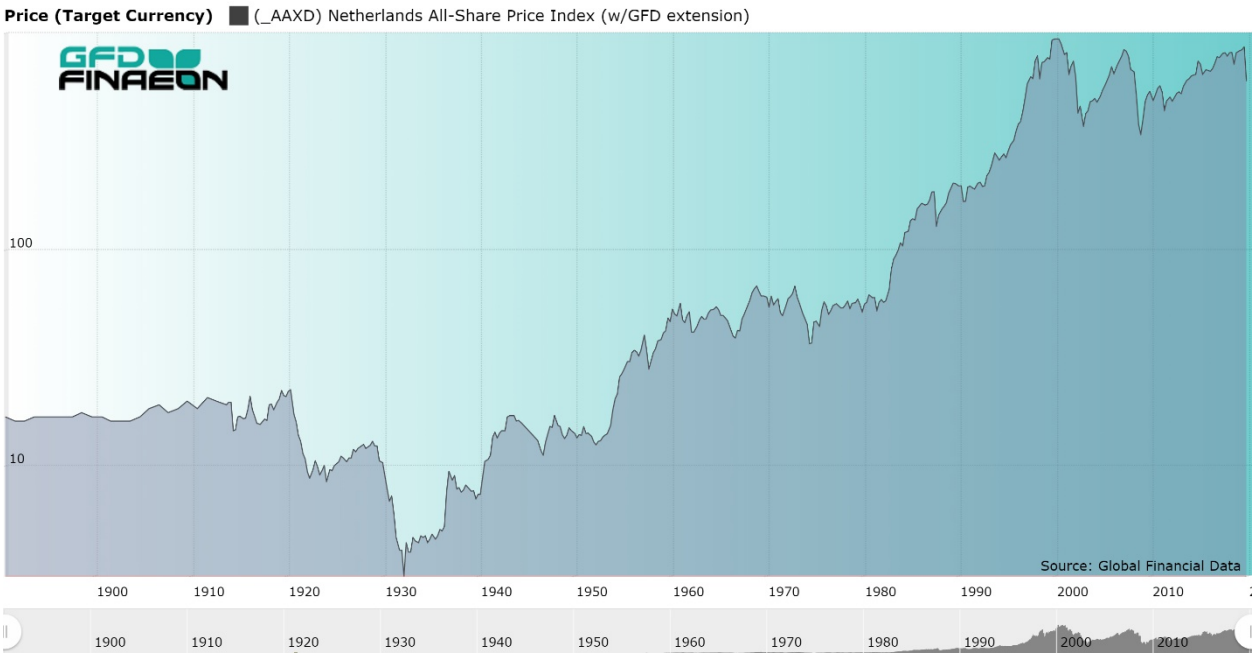


Figure 12.1. Netherlands All-Share Price Index, 1892 to 2019

If you look at cash and bonds, you can see that they declined in value between 1940 and 1980 as rising bond yields and high inflation produced lower returns. Both cash and bonds provided negative returns between 1945 and 1981, but positive returns during the other eras. Dutch bond yields rose from 2.95% in 1938 to 12.63% in 1981. During the twenty-first century, bonds have outperformed stocks which remain below the level they were at in 2000. Yields on government bonds and cash remain negative so there is little chance of a return to fixed-income investors in the coming decade. Since Royal Dutch Shell represents such a large proportion of Dutch capitalization, the performance of Dutch stocks is tied to that company in the future.

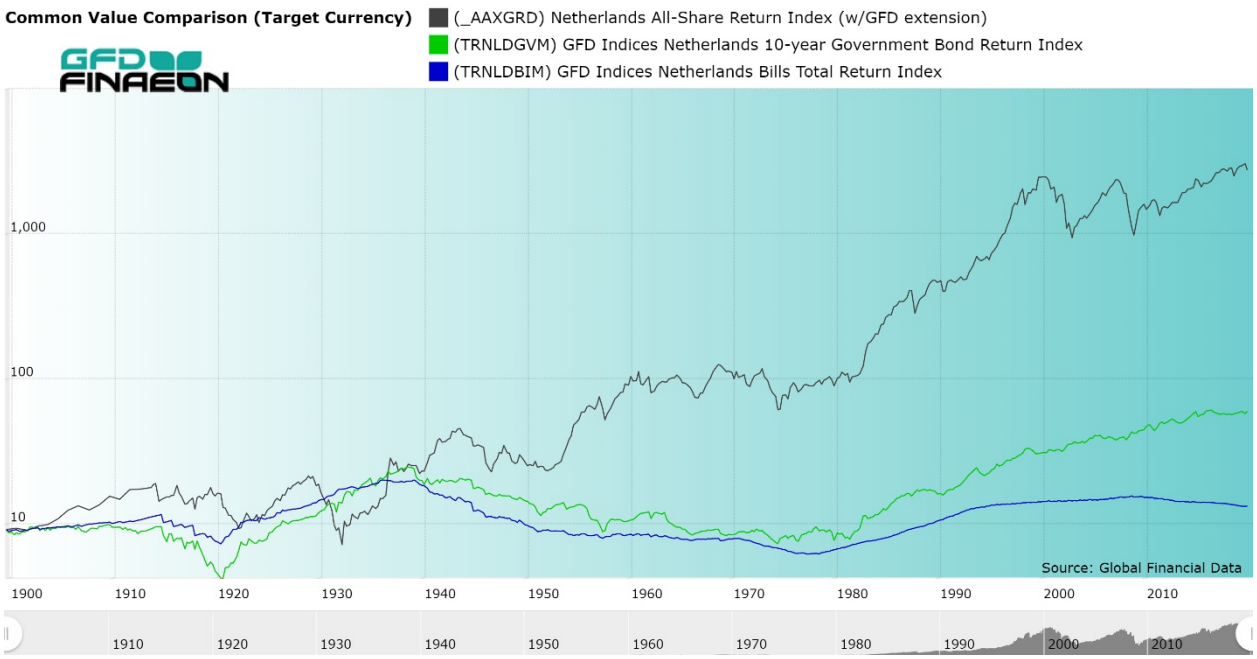


Figure 12.2. Netherlands Returns to Stocks, Bonds and Bills in Real US Dollars

Years	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
By Decade						
1799-1809			0.08			0.86
1809-1819			-4.2			-1.31
1819-1829			11.47	5.4		-1.60
1829-1839			1.11	0.82		0.21
1839-1849			8.43	5.99		-1.30
1849-1859			4.53	1.89		0.24
1859-1869			-1.86	-0.53		-0.16
1869-1879			8.24	5.56		0.23
1879-1889			6.35	2.82		-1.83
1889-1899			2.51	2.34		-0.76
1899-1909	-0.72	4.92	0.32	0.71	4.59	1.94
1909-1919	-6.84	-0.47	-7.02	-3.51	7.05	7.02
1919-1929	-5.21	0.83	7.63	5.48	-6.32	-2
1929-1939	0.74	5.51	9.46	6.55	-3.61	-1.36
1939-1949	-5.7	-3.23	-8.29	-11.05	5.51	7.81
1949-1959	11.34	15.48	-0.99	0.49	16.64	3.80
1959-1969	0.26	3.89	-0.23	1.26	4.13	3.97
1969-1979	-1.6	5	6.8	4.59	-1.68	7.18
1979-1989	8.2	14.38	4.27	2.17	9.70	2.70
1989-1999	11.64	15.61	4.22	1.34	10.92	2.41
1999-2009	-4.69	-1.57	6.95	3.97	-7.97	2.02
2009-2019	0.91	4.41	0.16	-3.99	4.24	1.72
By Era						
1792-1848			1.5			-0.17

1848-1914			3.12	2.05		-0.01
1914-1945	-1.9	3.2	2.41	0.57	0.76	2.60
1945-1981	-0.76	3.85	-1.33	-0.74	5.24	5.18
1981-2019	5.21	9.19	5.08	1.5	3.92	1.97
To Present						
1799-1899			3.56			-0.55
1899-1999	1	6	1.46	0.68	4.48	3.30
1799-2019			2.59			1.40
1899-2019	0.51	5.21	1.79	0.55	3.36	3.06
1919-2019	1.4	5.83	2.87	0.95	4.38	2.78
1969-2019	2.71	7.37	4.45	1.57	4.53	3.19
1999-2019	-1.93	1.37	3.5	-0.09	3.37	1.87

Table 12.1. Netherlands Real Returns to Stocks, Bonds, Bills, ERP and Inflation, 1799-2019

3. Equity Risk Premium

The Equity-Risk Premium has been positive during most of the Netherlands' history. The exception to this rule was the 1920s and 1930s when stocks performed poorly. Stocks also underperformed fixed income in the 1970s when inflation drove down the value of stocks and around 2010 when the financial crisis impacted the Dutch economy. During the 1950s and 1960s, the ERP exceeded 10%, but during most other times the ERP was around 5%. Although equities have not done well since 2000, bond yields and cash are both yielding around zero so any positive return to equities will produce a positive ERP.

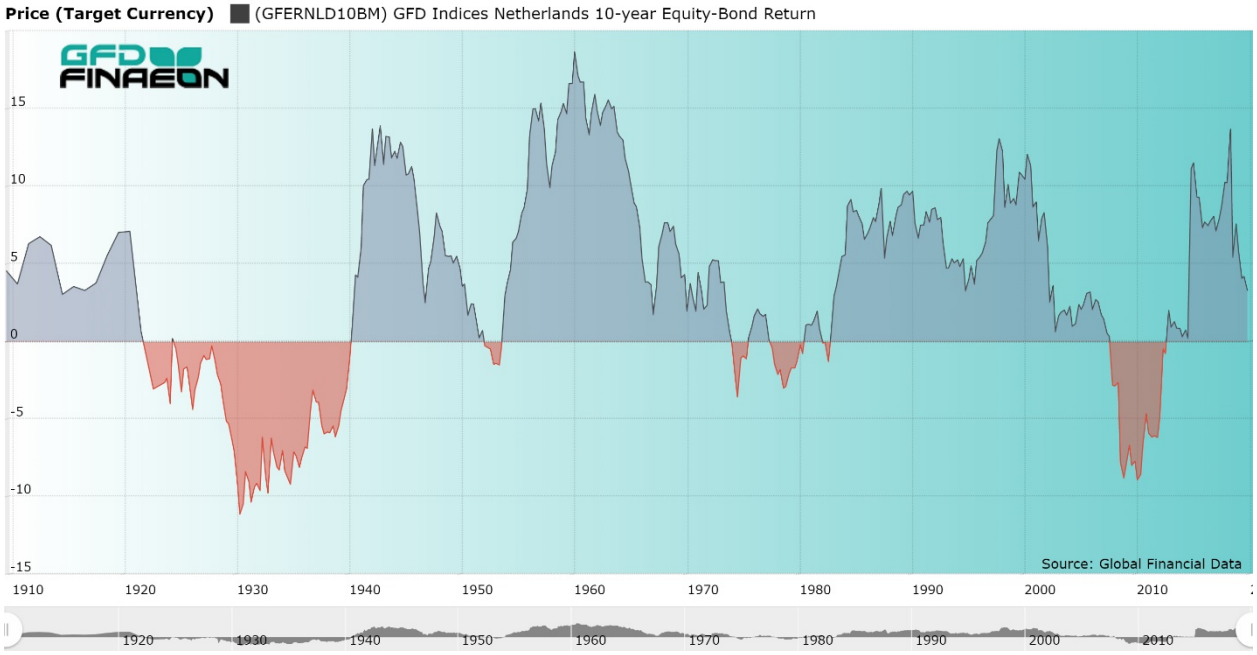


Figure 12.3. Netherlands 10-year Exchange Rate Premium, 1910 to 2019

4. Bull and Bear Markets

Bull and bear markets in the Netherlands is chronicled in Table 12.2. Data before 1800 depend upon just two companies, the Dutch West India Co. and the Dutch East India Co. There were no bear markets

between 1602 and 1720 when the South Sea Bubble carried the price of Dutch companies to new heights; however, large declines followed and by 1794, both of the two companies had fallen into bankruptcy.

The Netherlands suffered two severe bear markets between 1920-1922 and 1929-1932 with both bear markets registering declines of over 60%. Similarly, the 2000-2003 and 2007-2009 bear markets also registered declines of over 60%. No other bear markets produced declines of more than 50%. We can only hope that just as there were 80 years between the first two large bear markets in the 1920s and the bear markets in the 2000s, it will be another 80 years before such large bear markets occur again.

The most spectacular bull markets occurred between 1974 and 1998 when the market was up over 2200% during those 24 years, and annual increase of 14%. Bull markets since 2000 have been modest in size since the stock market has failed to regain the highs it hit in 2000.

Date	Bear Loss	Date	Bull Gain
		8/19/1720	1110.00
1/25/1762	-73.14	3/3/1766	82.46
7/7/1794	-79.76		
1/31/1919		5/31/1920	20.11
8/31/1922	-62.33	2/28/1929	53.09
6/30/1932	-76.42	3/31/1937	205.68
12/31/1939	-25.46	2/29/1944	143.62
11/30/1946	-35.65	3/31/1948	54.96
6/30/1952	-26.82	6/30/1957	220.87
12/31/1957	-30.37	3/31/1961	101.42
8/31/1966	-33.63	5/31/1969	85.94
10/31/1974	-47.93	8/12/1987	447.67
11/10/1987	-40.52	7/20/1998	610.77
10/8/1998	-35.14	9/4/2000	81.92
3/12/2003	-66.94	7/16/2007	161.97
3/5/2009	-63.61	2/18/2011	86.66
9/22/2011	-28.95	4/13/2015	85.92
2/11/2016	-24.28	2/12/2020	54.15
3/16/2020	-36.43		

Table 12.2. Netherlands Bull and Bear Markets, 1720 to 2020

5. Fixed-Income Market

Paul Schmelzing has collected data on government bond yields in the Netherlands since 1400. Yields sank continually until they fell below 3% in the 1700s. No general government bonds were issued in the Netherlands until the 1700s. Before then they were all issued by local municipalities. The Batavian Republic defaulted on its bonds during the Napoleonic Wars. These bonds were exchanged in 1814 for new bonds which had 1/3 of the value of the old bonds. Yields continually declined until the 1890s when bond yields began to rise. Yields peaked during the inflation of the

1920s, declined until World War II, then rose to 12.63% in 1981 before declining to negative levels in 2019. Bond yields will likely remain close to zero for some years to come.

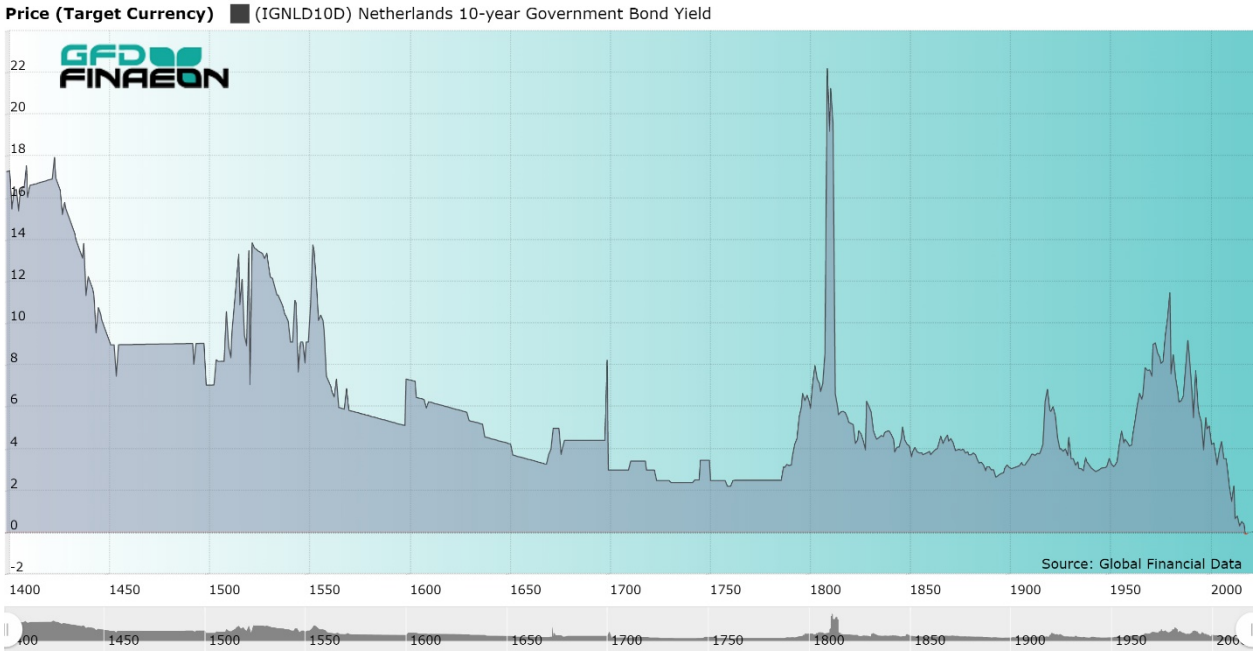


Figure 12.4. Netherlands Government Bond Yield, 1400 to 2019

The Dutch dividend yield exceeded the government bond yield during most years until the 1940s. Stocks provided a low yield during the war which pushed the yield on government bonds above the yield on stocks. As bond yields rose in the 1950s, the return on bonds exceeded the return on stocks and remained that way until the Financial Crisis of 2008. The difference between stock and bond yields usually remained under 4%, if only because Dutch bond yields never rose to significant levels. Low government bond yields during the past decade have enabled stocks to pay a higher return than bonds, a situation which will probably persist during the coming decade.

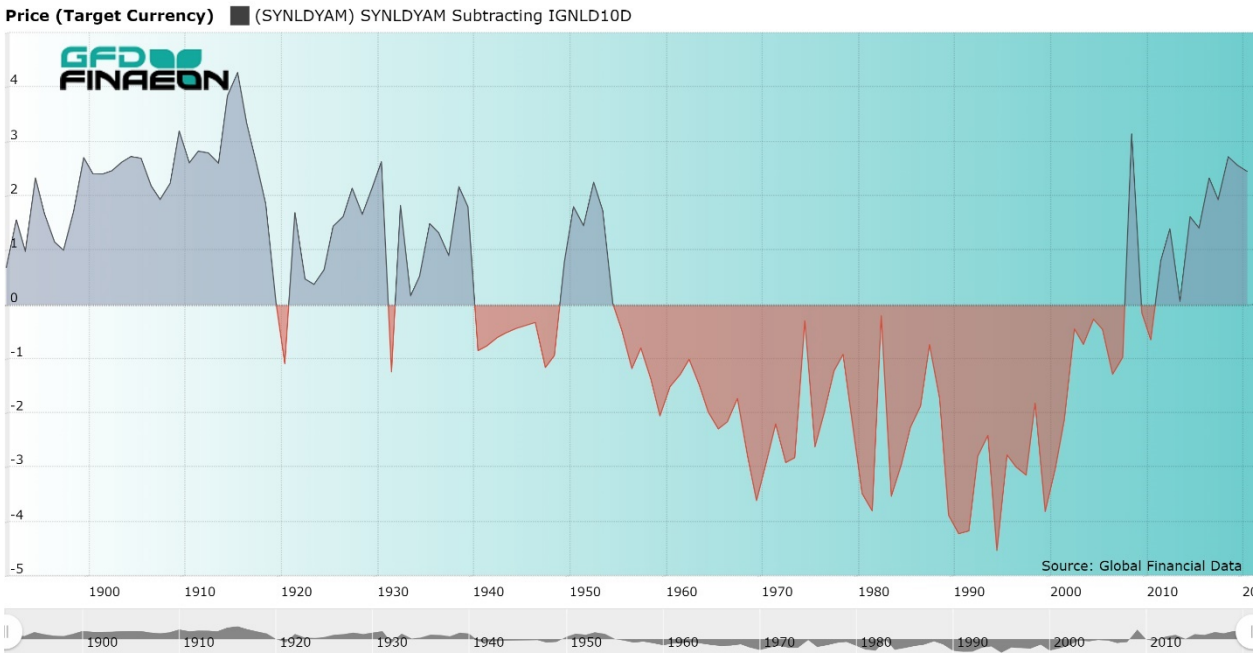


Figure 12.5. Netherlands Stock Yield Minus 10-year Government Bond Yield, 1890 to 2020

6. Stock Market Capitalization and Government Debt Share of GDP

The Dutch stock market has been dominated by Royal Dutch Shell, and to a lesser degree Unilever, during the past 100 years. Estimates of the market cap/GDP ratio before World War I exceed 100%, though this ratio gradually declined to around 25% by the 1970s. Market cap surged above 100% once again in the 1990s, though it declined to under 50% during the financial crisis of 2008. It has since bounced back to above 100%. Between them, Royal Dutch Shell, Ahold Delhaize and Unilever have a market cap of $500 million making up about half of the Dutch stock market.

Dutch government debt has been modest by comparison with other countries. Although the debt rose dramatically during World War II, it declined until it was around 20% by the 1970s. Although the ratio of government debt to GDP has risen since then, it is less than the Dutch MCAP/GDP and remains low compared to other European countries.

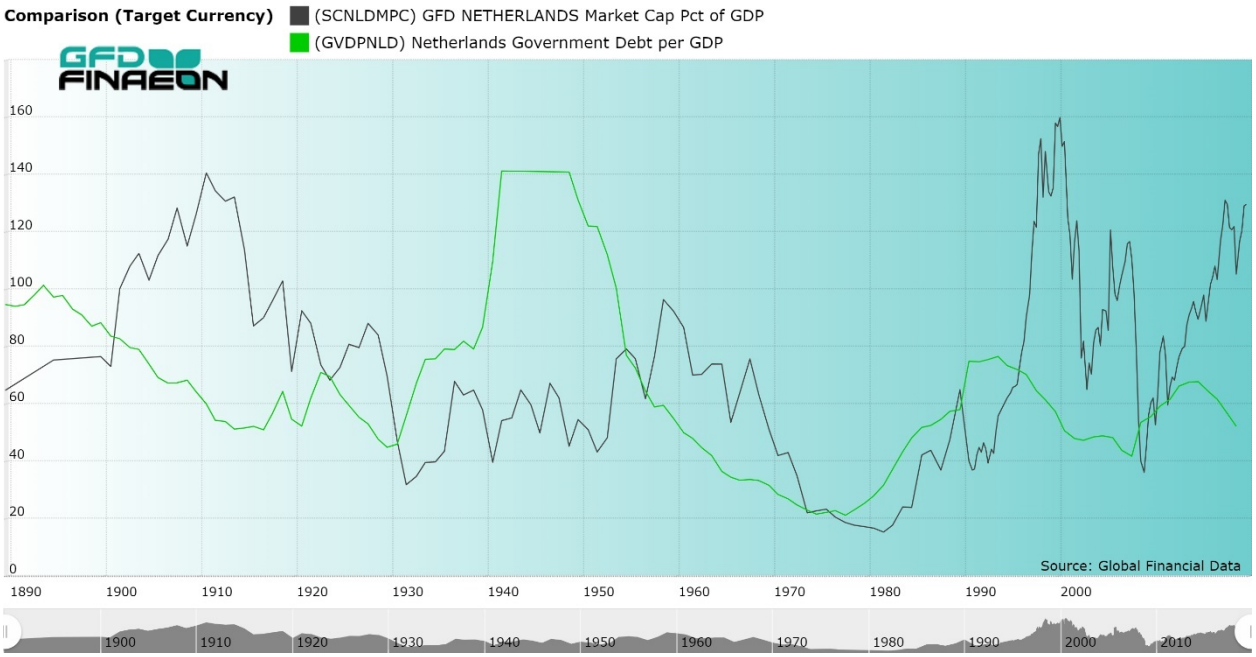


Figure 12.6. Netherlands Stock Market Cap and Government Debt as a Share of GDP, 1890 to 2019

7. Exchange Rate

The Netherlands is one of the few countries whose currency has appreciated against the U.S. Dollar since 1900. The other country whose currency has appreciated is Switzerland. During the 1800s there were about 2.5 Guilders to the U.S. Dollar. This increased to almost 4 Guilders after World War II, but the Guilder appreciated against the U.S. Dollar after it began floating in 1973. By the time the Guilder converted into Euros in 1999 there were about 2 Guilders to the U.S. Dollar. The exchange rate of the Euro will determine the exchange rate for the Netherlands in the future.

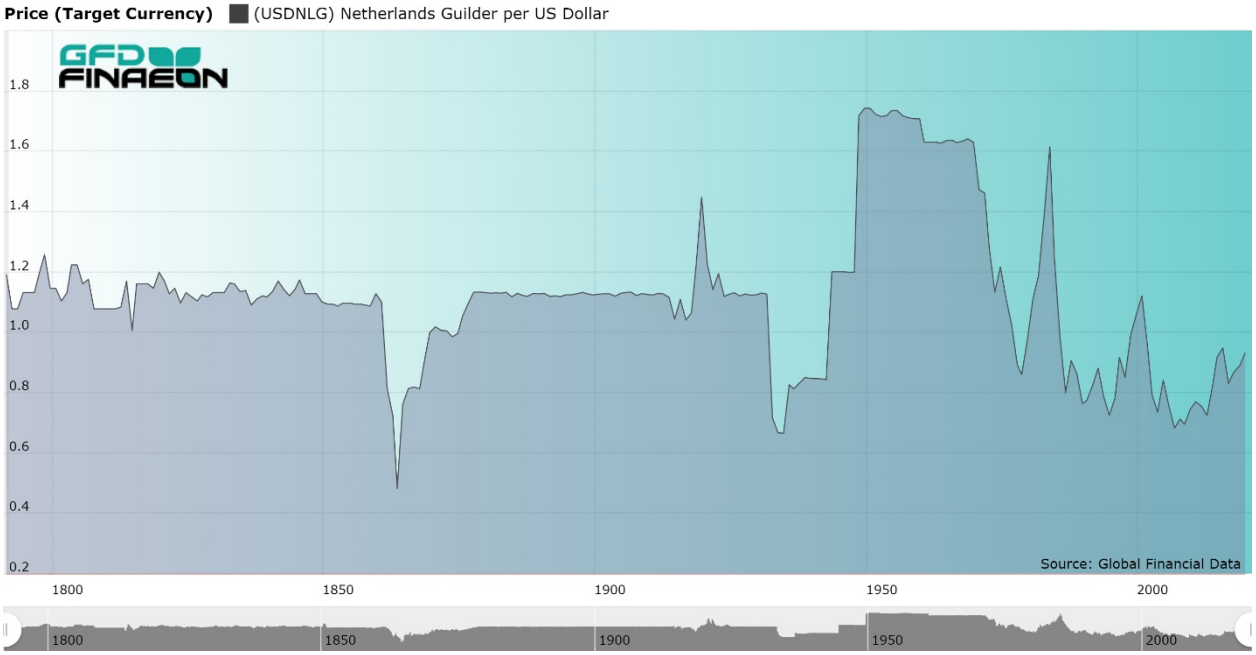


Figure 12.7. United States Dollar – Netherlands Guilder/Euro Exchange Rate, 1792 to 2019

8. Conclusion

The Netherlands has the longest history of stocks of any country in the world. Data on Dutch bonds begins in 1400. This enables us to obtain a long-term view of returns to investors in the Netherlands. Stocks have done well, returning 6% per annum between 1899 and 2019, though stocks have only returned 1.37% in the twenty-first century. Bonds provided much lower returns of 3.56% since 1799 and 1.46% since 1899. This give the Netherlands an ERP of 4.48% during the past 120 years.

Today, bond yields and yields on cash are close to zero and as is true in the rest of the Euro zone, will probably provide returns of 1-2% during the coming decade. This means that the equity-risk premium is likely to be positive as long as equities provide a positive return. However, equities remain below their high point in 2000, though after adjusting for dividends, equities have provided a positive return during the past 20 years. The Dutch equity market is dominated by a few large firms. Royal Dutch Shell now has its primary listing in London, but also lists in Amsterdam. The Netherlands is a small country dependent upon companies with operations in other countries. How those companies perform will determine the return to Dutch investors in the future.

New Zealand

1. Sources

New Zealand stocks first listed in London in 1862. During the gold rush of the 1870s, a number of regional exchanges appeared in Dunedin, Otago, Auckland, Christchurch and Wellington. New Zealand became an independent dominion in 1907. The New Zealand Stock Exchange was established in 1974 when three regional exchanges merged. Nevertheless, the New Zealand Stock Exchange remains small with a capitalization of $100 million.

Data from New Zealand stocks that listed in London are used from 1862 until 1930. Stock market data based upon stocks that listed in New Zealand begins in 1930 and daily data begins in 1970. New Zealand government bonds first listed in London in 1861. Domestic quotations begin in 1941. The New Zealand Reserve Bank Discount Rate is used from 1923 to 1964, the yield on time deposits from 1965 until 1973 and the yield on T-bills since 1973.

2. Returns to Stocks, Bonds and Bills

By combining New Zealand stocks that listed in London with stocks that listed in New Zealand, we have been able to put together over 150 years of data on Kiwi stocks. There was little change in New Zealand stocks between the 1860s and 1950. As is the case with Australia, New Zealand stocks have provided consistent returns over the past 150 years. Returns have been around 5% in real U.S. Dollars, almost all of this coming from dividends. Stock returns have improved during the twenty-first century, providing an 8.23% annual return during the past 20 years.

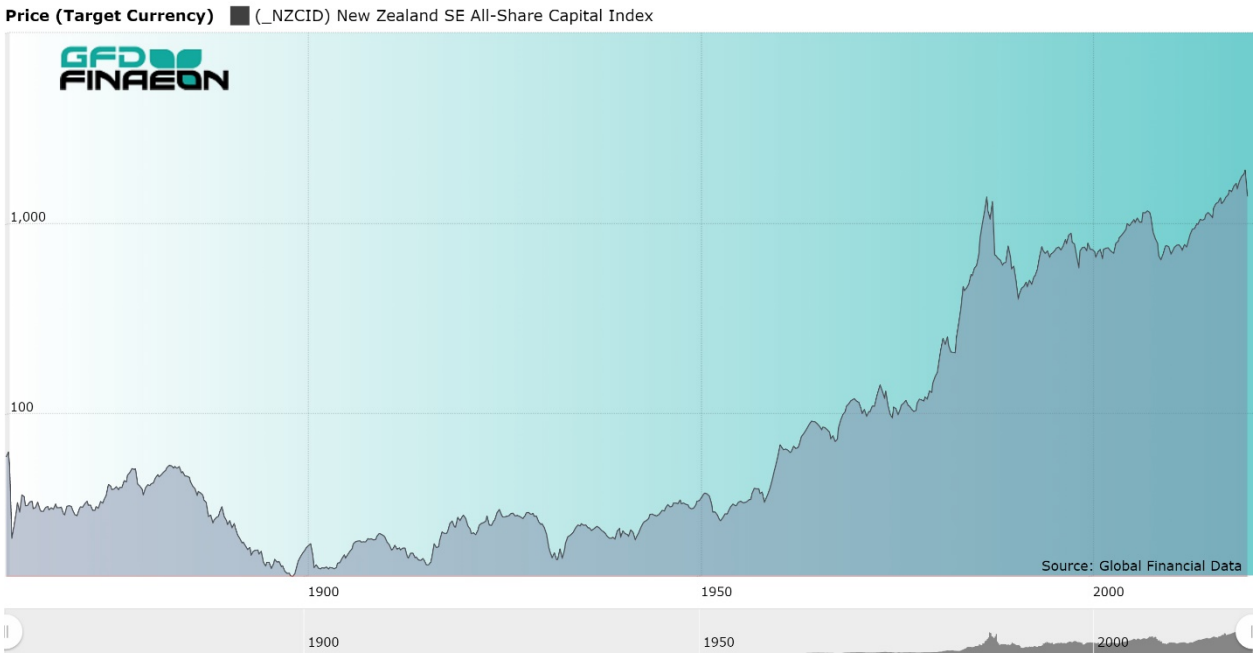


Figure 13.1. New Zealand Capital Price Index, 1862 to 2019

Returns to bonds have reflected the large increase in bond yields between the 1940s and 1980s and the decline that followed. Bonds provided negative returns in each decade between the 1940s and 1980s and have provided positive returns since then. The yield on Kiwi bonds rose from 2.94% in 1936 to 19.2% in 1985, and declined to under 1% in 2020. .

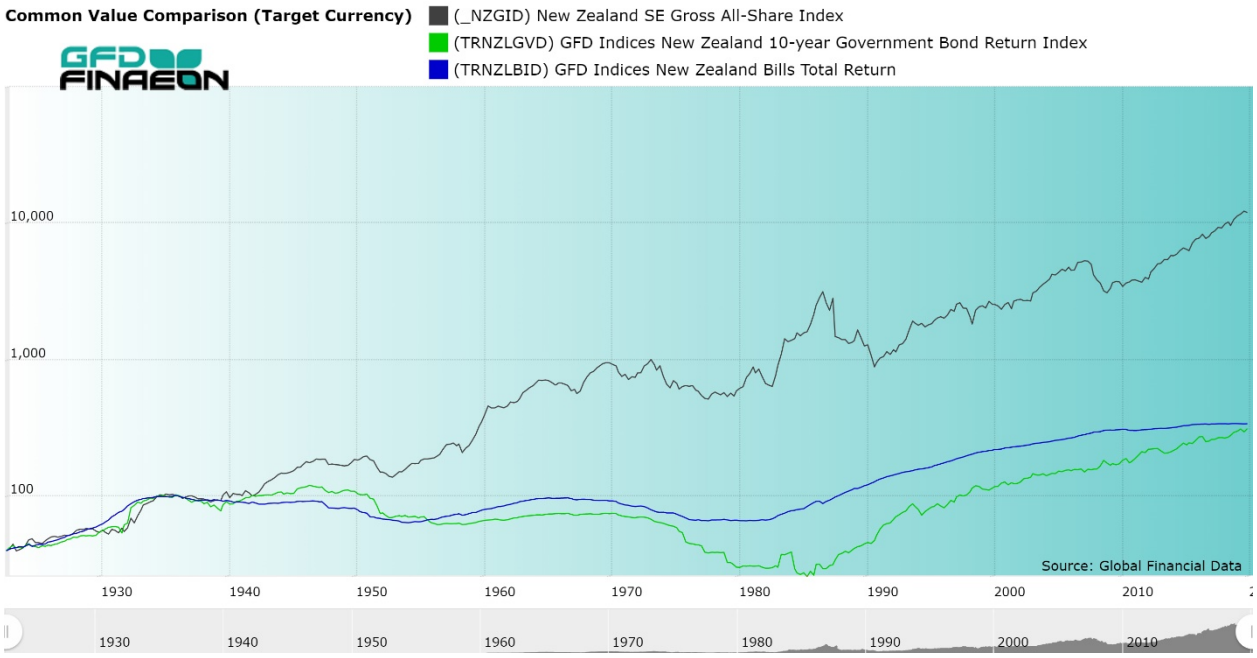


Figure 13.2. New Zealand Returns to Stocks, Bonds and Bills in Real USD, 1923 to 2019

New Zealand has a small stock market which limits opportunities for investment. Stocks have provided positive returns during the past twenty years and will probably continue in the coming decade; however, because the New Zealand stock market is so small, there are few investment opportunities. Although bond and cash yields are low, they are positive and generally lie in the 1-2% range

Years	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
By Decade						
1869-1879	2.63	9.27	6.3		2.79	
1879-1889	-3.4	1.81	6.02		-3.97	
1889-1899	-4.36	3.48	4.07		-0.58	
1899-1909	-0.13	6.11	0.01		6.11	
1909-1919	-7.73	-1.76	-8.84		7.77	
1919-1929	3.49	9.08	10.68		-1.45	-0.44
1929-1939	-3.33	3.99	3.01	2.18	0.96	0.08
1939-1949	-4.72	0.25	-2.86	-6.17	3.20	2.85
1949-1959	3.61	10.73	-1.07	3.6	11.92	4.77
1959-1969	2.09	7.79	-1.83	-1.36	9.81	3.23
1969-1979	-5.88	-1.22	-4.23	1.03	3.15	12.05
1979-1989	6.89	11.54	4.41	6.9	6.83	11.42
1989-1999	-2.58	3.79	7.24	3.83	-3.23	1.84
1999-2009	0.53	7.08	8.05	7.24	-0.90	2.71

2009-2019	6.86	11.57	4.76	0.09	6.51	1.59
By Era						
1914-1945	-1.43	4.81	1.66	-1.12	3.09	
1945-1981	-0.48	5.06	-3.26	5.78	8.60	1.36
1981-2019	2.26	8.23	7.02	0.21	1.14	6.88
To Present						
1899-1999	-0.93	4.93	0.51	1.94	4.41	
1869-2019	-0.5	5.48	2.25	1.35	3.15	
1899-2019	-0.18	5.65	1.46	2.05	4.12	
1919-2019	0.6	6.37	2.7	2.46	3.58	3.93
1969-2019	1.04	6.44	3.95	3.78	2.39	5.81
1999-2019	1.55	7.24	2.38	3	4.74	2.15

Table 13.1. Returns to Stocks, Bonds, Bills, ERP and Inflation in Real US Dollars, 1869 to 2019

3. Equity Risk Premium

Figure 13.3 provides a history of the Exchange-Rate Premium in New Zealand since the 1870s. There were four periods where the ERP was negative, in the 1890s, in the 1930s, in the 1990s and in the 2010s. It is interesting that the ERP was negative in the 1990s since this was such a strong period of growth for stocks in almost every country in the world. Generally, the ERP has been positive in almost every other period of time. Between 1869 and 2019, the ERP has measured 3.15% which is comparable to the ERP in other countries such as Australia and the United States. With the stock market in New Zealand doing well and bond yields low, the ERP should remain positive for the rest of the decade.

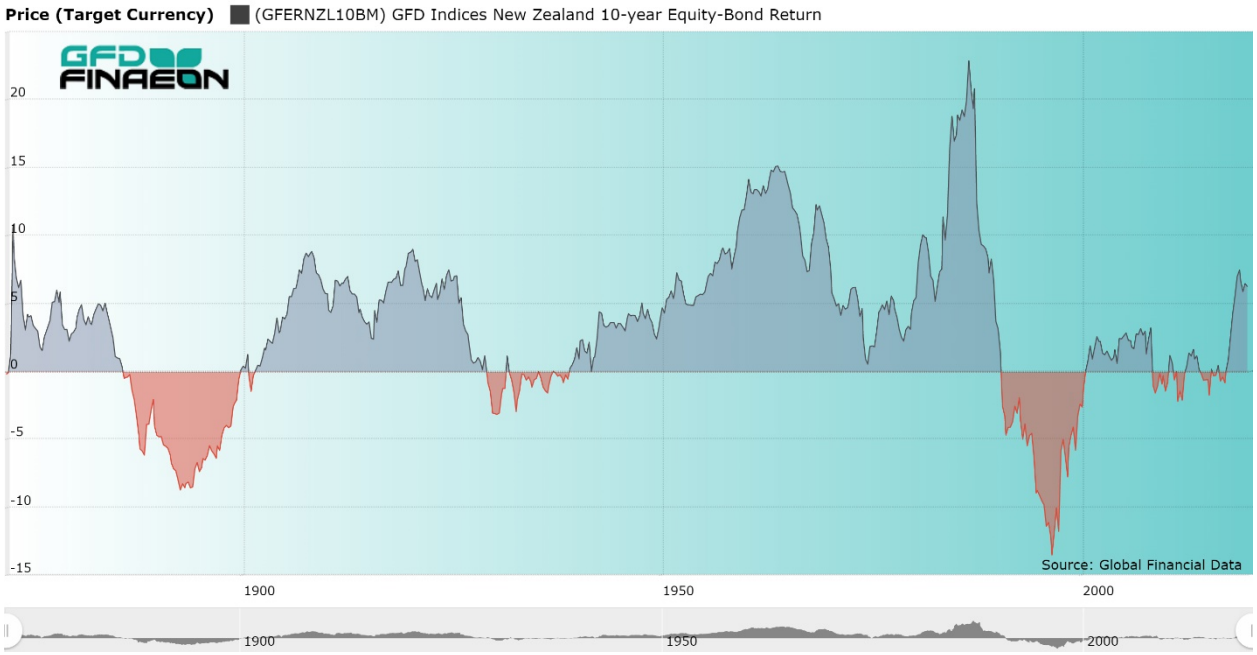


Figure 13.3. New Zealand 10-year Equity-Risk Premium, 1873 to 2019

4. Bull and Bear Markets

Table 13.2 provides a history of bull and bear markets in New Zealand since the 1860s. There have been surprisingly few bear markets. The two most dramatic declines were between 1882-1898 and 1986-1991 when the stock market declined by over 70%. Other bear markets have been rather shallow by comparison with the rest of the world. There was one very large bull market between 1974 and 1986 when the New Zealand stock market rose by over 1500%. Almost all of the companies that are listed in New Zealand provide local services and there are no large international companies that operate out of New Zealand. This means that bull and bear markets probably will not exhibit the volatility of other countries.

Date	Bear Loss	Date	Bull Gain
11/30/1862	-66.67	07/31/1878	133.46
09/30/1879	-27.88	11/30/1882	42.80
07/30/1898	-74.21	12/31/1929	96.75
4/30/1932	-37.23	1/31/1951	128.98
4/30/1953	-29.57	2/28/1965	239.37
9/30/1967	-23.36	7/6/1973	105.08
11/5/1974	-39.83	11/10/1986	1534.95
1/15/1991	-73.65	10/22/1997	138.64
10/2/1998	-37.70	5/24/2007	112.04
3/3/2009	-49.17	2/20/2020	225.95
3/20/2020	-24.66		

Table 13.2. New Zealand Bull and Bear Markets, 1862 to 2020

5. Fixed-Income Market

Since New Zealand was a British colony until 1907, Kiwi bonds were put in the same risk category as Britain and other colonies. This enabled New Zealand to issue bonds at a low coupon. Bond yields declined until 1896, rose until 1920, then declined until around 1950. Yields rose gradually until the 1970s, then shot up, reaching 19.2% in 1985 as New Zealand suffered double-digit inflation during the 1980s. Since then, bond yields have steadily declined, falling below 1% in 2020. Yields are likely to remain in the 1-2% range in the coming decade as inflation remains under control.

Figure 13.4. New Zealand Yield on 10-year Government Bonds, 1861 to 2019

As Figure 13.5 shows, low yields on New Zealand government bonds up until the late 1950s assured that the stock yield on New Zealand stocks exceeded the bond yield on government bonds in virtually every year. As was true of other countries, rising inflation, and thus rising bond yields, in the 1960s enabled bonds to pay a higher return than stocks. This remained true until the Financial Crisis of 2008 when declining government bond yields enabled the dividend yield to once again exceed the government bond yield. It appears likely that the stock dividend yield will exceed the bond yield during the coming decade.

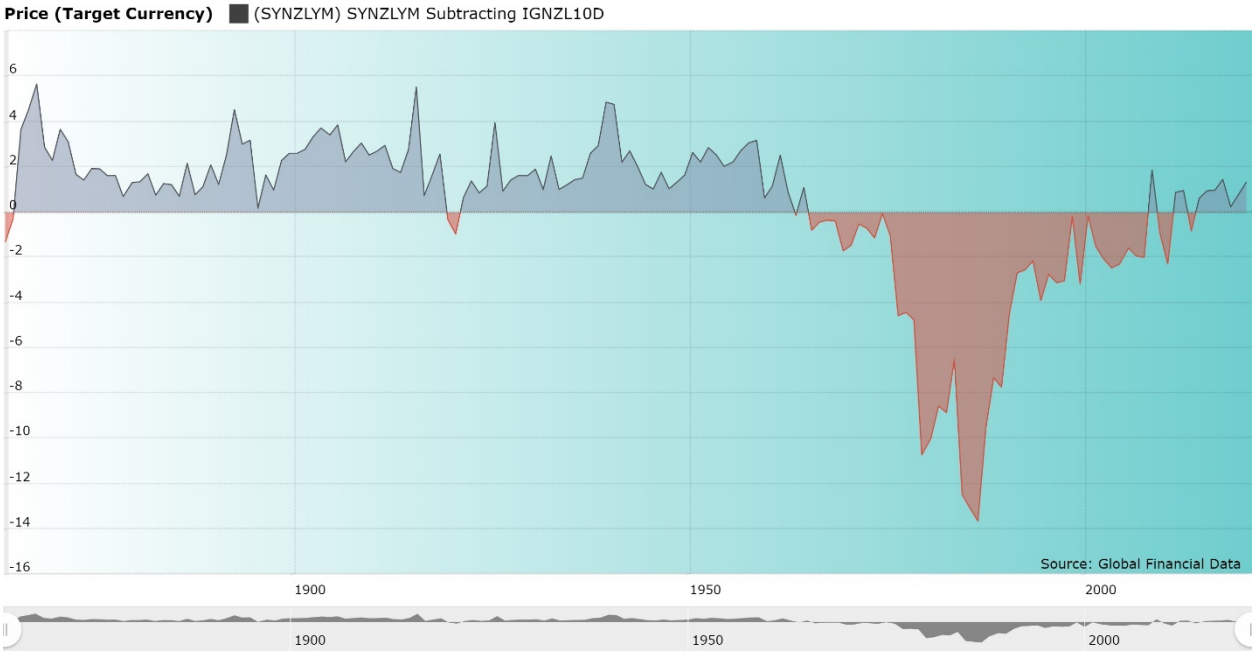


Figure 13.5. New Zealand Stock Dividend Yield Minus Government Bond Yield, 1862 to 2020

6. Stock Market Capitalization and Government Debt Share of GDP

Market capitalization of the stock market has remained modest throughout New Zealand's history. There are no major international companies that are listed in New Zealand so all of the companies produce goods for local consumption. This has kept the MCAP/GDP ratio below 60% during the past 100 years. Government debt was relatively high until the 1930s as New Zealand took advantage of its low risk to issue debt. The government debt/GDP ratio declined from over 200% in the 1930s to under 40% in the 1970s. The government debt/GDP ratio has continued to decline and today lies around 30%. Both market capitalization and government debt remain low in New Zealand.

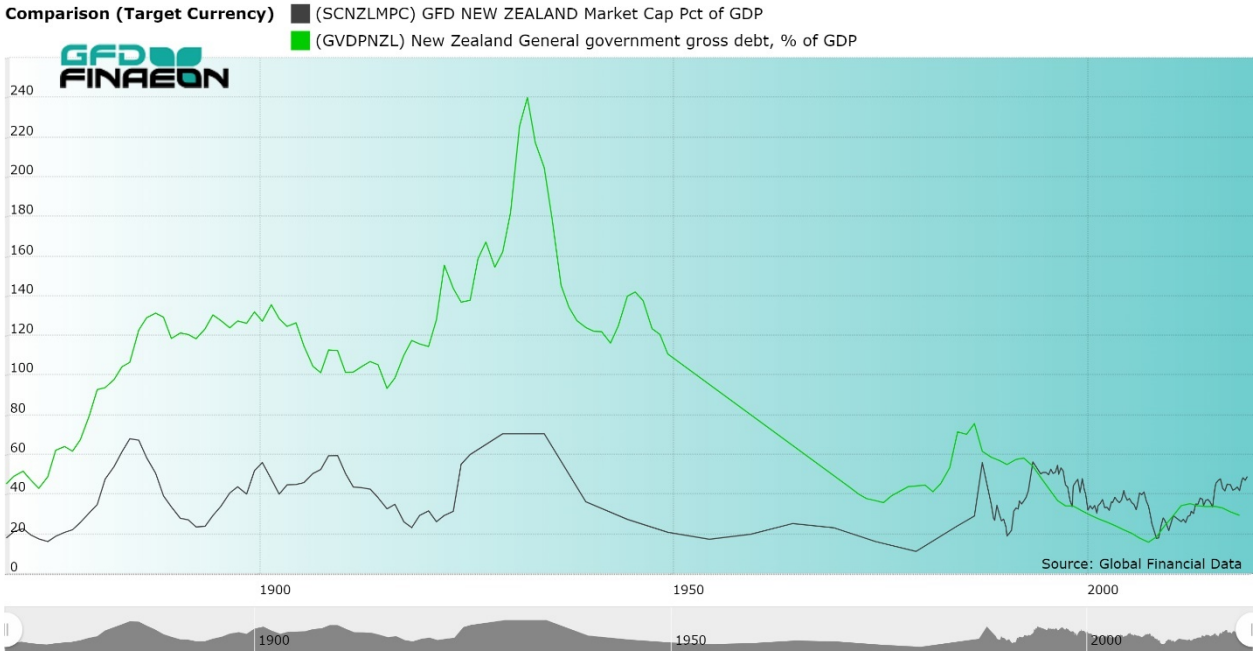


Figure 13.6. New Zealand Market Cap and Government Debt as a Share of GDP, 1872 to 2019

7. Exchange Rate

Figure 13.6 shows the historical exchange rate between the United States Dollar and the New Zealand Pound through July 10, 1967 and the New Zealand Dollar thereafter. The New Zealand Pound was tied to the British Pound Sterling and the exchange rate was 4.84 United States Dollars equal to the New Zealand Pound. In 1967, two New Zealand Dollars were set equal to the New Zealand Pound. New Zealand had had a higher inflation rate than the United States and the New Zealand Dollar has depreciated over time. Today, there are about 1.65 New Zealand Dollars to the United States Dollar. The exchange rate has seen little change since the 1980s and is unlikely to change in the decade to come.

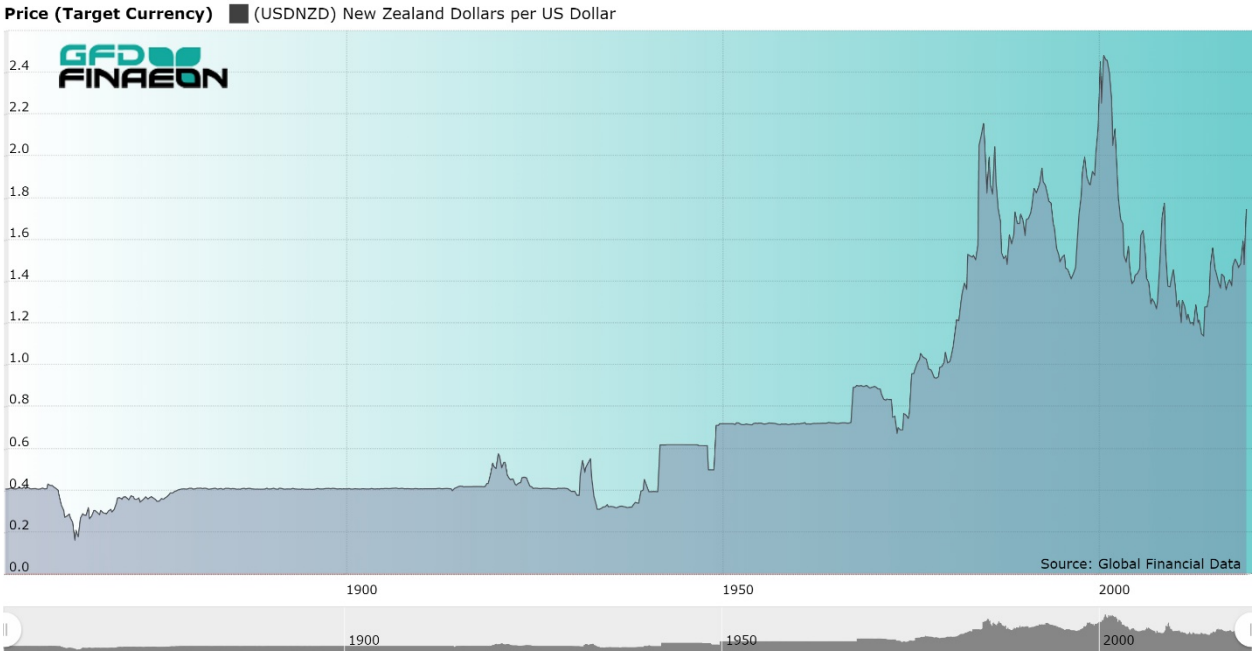


Figure 13.7. United States Dollar – New Zealand Pound/Dollar Exchange Rate, 1855 to 2019

8. Conclusion

New Zealand is a small country with a number of local companies that service the Kiwi economy. Geographically isolated from the rest of the world, New Zealand has avoided the economic dislocations of European wars and has avoided the nationalizations and other economic effects of government intervention. New Zealand is a small, open economy that relies upon exports to generate growth in the economy. Its economy is dependent upon Australia. New Zealand has provided consistent growth over the past 150 years and there is little reason to believe that this will change in the near future. The only drawback of New Zealand is that it is a small economy with few opportunities for large money managers to invest in.

South Africa

1. Sources

GFD's index of South African stocks uses data on stocks that were listed in London beginning in 1834. London-listed South African stocks are used exclusively until 1910. Before 1890, there were fewer than 20 South African companies listed in London, but once gold was discovered in the 1890s, the number of South African companies mushroomed, increasing to 45 in 1890 and over 100 by 1902. South African companies also listed in Paris where they traded on the Coulisse Exchange as well as in Amsterdam, Berlin and other stock exchanges because European investors wanted to profit from the South African gold rush.

Data before 1947 uses indices from C. G. W. Schumann and A. E. Scheurkogel's *Industrial and Commercial Share Price Indices in South Africa*. Unfortunately, Schumann and Scheurkogel did not include mining shares, and as in Australia, this produced an upward bias to the South African indices. We have combined the data from mining shares listed in London with commercial and industrial shares that listed in Johannesburg to create GFD's index for South Africa. It is curious that most of the outperformance of the Schumann and Schurkogel index occurs before 1947, but since 1947 when the South African index was calculated in "real time", the outperformance disappears. We weighted both the London mining shares and South African Commercial and Industrial shares at 50% between 1910 and 1960, and used the JSE All-Share index from 1960 until 2019. We used the dividend yield on shares in London before 1960 to produce a return index that included not only capital gains and losses, but reinvested dividends as well. Daily data begins in 1970. South Africa provides countercyclical behavior relative to the rest of the world because its returns are dependent upon gold and it is an emerging market. This helps portfolios that include South Africa to reduce the volatility of their investments.

The Cape of Good Hope issued bonds beginning in 1860. Union of South Africa Bonds are used beginning in 1914 and 10-year bonds are used beginning in 1972. South African treasury bills were used beginning in 1936.

2. Returns to Stocks, Bonds and Bills

Between 1834 and 2019, the South African index rose by 4.34% per annum; however, most of this increase came from inflation. Between 1895 and 2019, the index rose by 5.83% per annum, but inflation increased by 4.85%. leaving an increase after inflation of less than 1% per annum. If you add in dividends, the total return increases to 6.45% per annum. Between 1895 and 2019, the total return index rose by 9.16% providing a dividend yield of 4.11%.

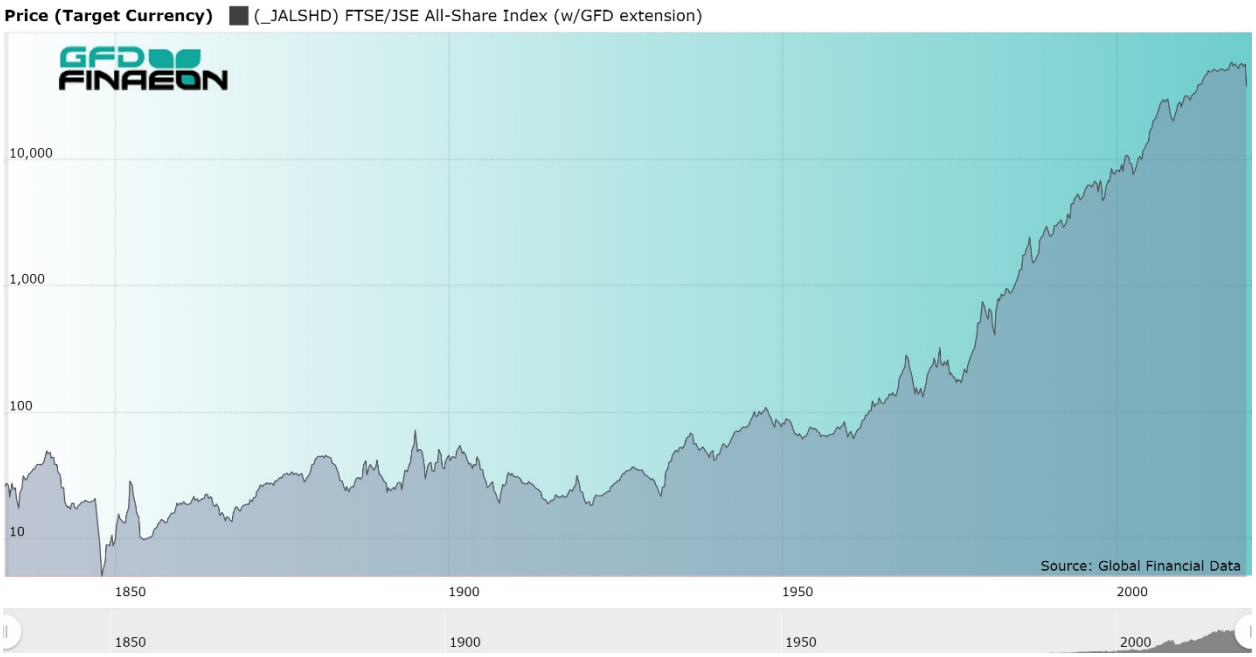


Figure 14.1. South African Stock Price Index, 1834 to 2019

Stocks made almost no progress between 1834 and 1934 when the price of gold increased from $20.67 to $35. Stocks increased in price by only 3.23% between 1848 and 1914, but rose by 9.66% between 1914 and 1945. While some European countries had their worst returns during the world wars, South Africa had its highest returns, primarily because of high returns in both the 1920s and the 1930s. While many countries had their highest returns between 1945 and 1981, South African returns were significantly below the returns of the previous era. Because South Africa is dependent upon gold and other minerals, its returns are countercyclical to the rest of the world. Similarly, South Africa did well in the 2000s and poorly in the 2010s, the opposite of the performance of stocks in the United States. Stocks have provided a 6.12% annual return in the twenty-first century.

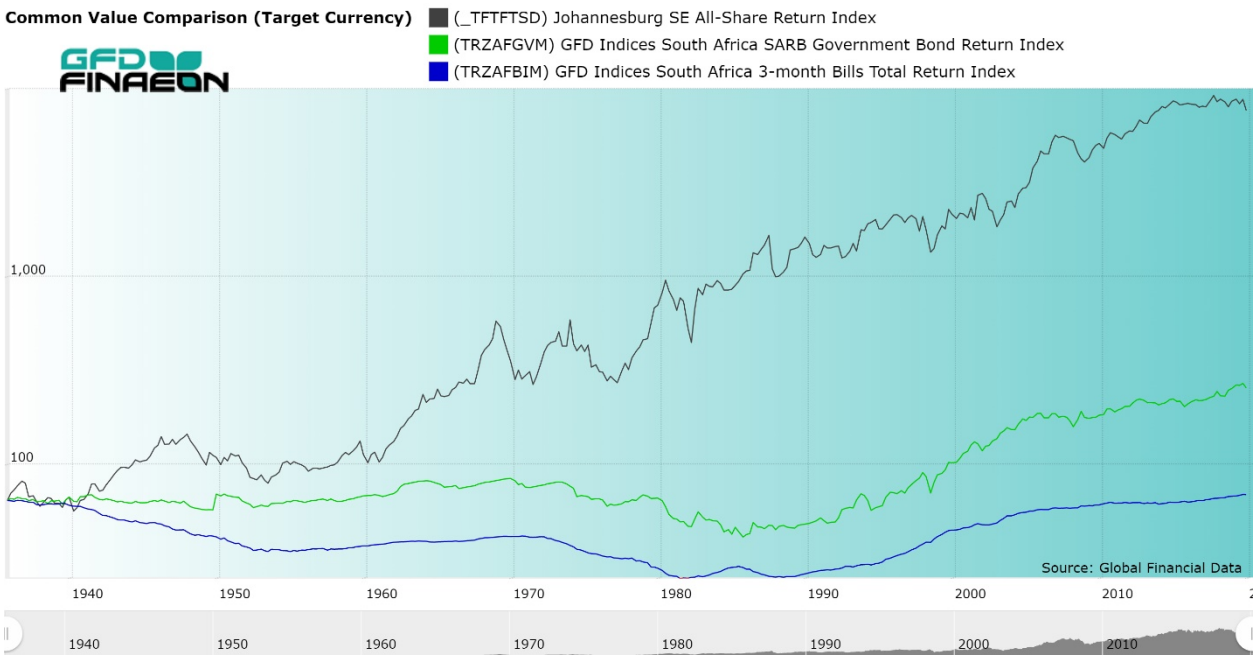


Figure 14.2. South Africa Returns to Stocks, Bonds and Bills, 1934 to 2019

Bonds have done poorly in South Africa compared to other countries, providing a return in real US Dollars of only 0.53% since 1899. This is primarily because bond yields rose dramatically between 1950 and 1985 when bond yields hit 18.09%. Although bond yields have declined since then, they remain above 10% meaning that fixed-income investors have not been able to benefit from the decline in interest rates to zero that has occurred in most developed countries. The primary reason for this is that the inflation rate has remained relatively high in South Africa. The ERP has remained positive, if only because returns to bonds were so low. Both bonds and cash provided negative returns from the 1940s to 1980s, but have risen since then, though modestly. Bonds returned 2.59% between 1981 and 2019 while cash returned 1.57%.

Years By Decade	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
1839-1849	-11.79	-8.12		6.28		
1849-1859	6.52	12.13		2.4		
1859-1869	-2.69	4.89	1.96	1.93	2.88	
1869-1879	6.89	16.51	4.99	3.39	10.97	
1879-1889	1.97	9.03	5.61	2.61	3.24	
1889-1899	-1.59	1.64	3.68	2.3	-1.97	
1899-1909	-3.51	-0.03	2.35	0.64	-2.32	-1.15
1909-1919	-7.09	-0.98	-5.19	-3.57	4.44	5.21
1919-1929	1.41	11.07	5.99	5.49	4.79	0.39
1929-1939	5.65	12.86	6.52	2.91	5.94	-0.46
1939-1949	-3.38	1.04	-5.49	-8.03	6.91	4.78

1949-1959	-3.26	2.01	1.85	-1.03	0.15	3.63
1959-1969	-0.98	4.25	-4.58	-5.51	9.25	2.61
1969-1979	0.95	6.51	-1.35	-2.69	7.96	10.04
1979-1989	1.13	6.32	-4.91	-2.69	11.81	14.65
1989-1999	-1.06	0.51	4.1	1.8	-3.45	9.28
1999-2009	7.71	9.89	7.39	4.86	2.33	6.10
2009-2019	-0.88	2.48	0.95	-1.88	1.52	5.06
By Era						
1848-1914	0.86	3.23		2.07		0.15
1914-1945	2.18	9.66	1.47	0.12	8.07	1.77
1945-1981	-2.79	2.39	-3.29	-4.42	5.87	5.83
1981-2019	2.4	4.31	2.59	1.57	1.68	8.40
To Present						
1899-1999	-1.07	4.26	-0.17	-1.34	5.39	4.79
1899-2019	-0.35	4.57	0.53	-0.89	4.02	4.92
1919-2019	0.67	5.61	0.94	-0.76	4.90	5.52
1969-2019	1.52	5.09	1.15	-0.16	3.52	8.98
1999-2019	3.33	6.12	4.12	1.43	2.71	5.58

Table 14.1. South Africa Returns to Stocks, Bonds, Bills, ERP and Inflation, 1839 to 2019

3. Equity Risk Premium

The South Africa 10-year Equity-Risk Premium is show in Figure 14.3. The returns to bonds have been relatively low enabling stocks to outperform bonds during most years. As in many other things, South Africa is countercyclical to other countries. The ERP was negative before World War I and in the 1950s when most countries' economies were booming. The ERP turned negative in the early 2000s, but has remained positive during the past decade, primarily because of lower returns to bonds. The ERP has been around 5% during most of the past century.

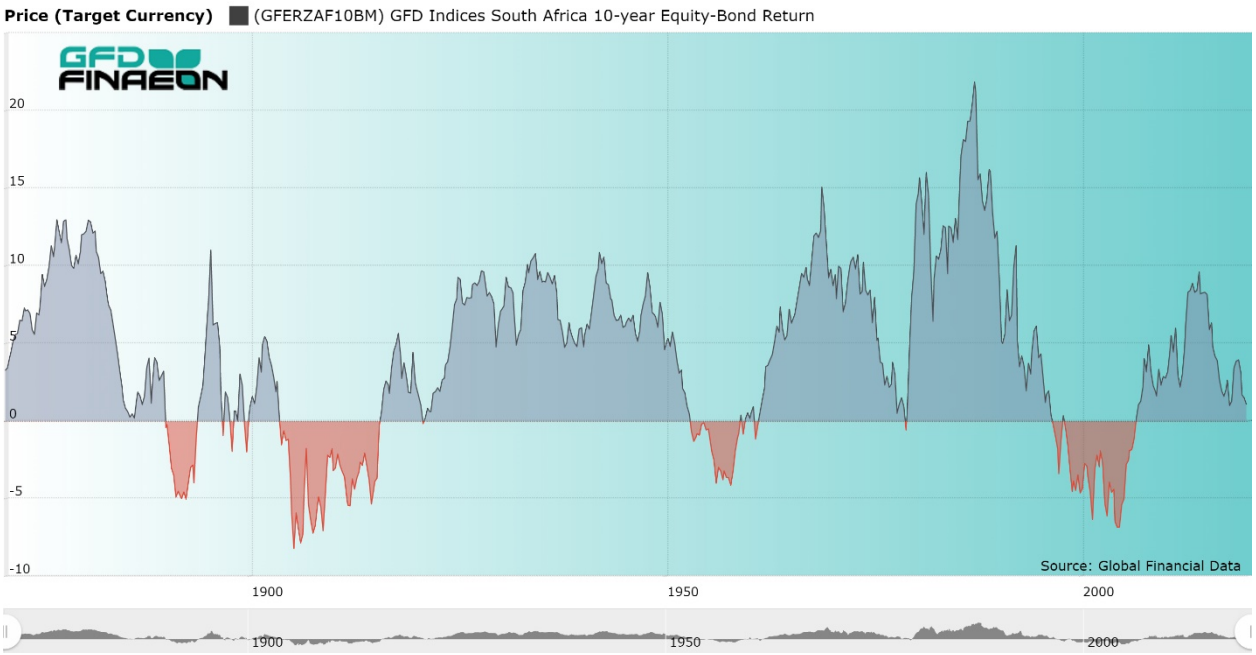


Figure 14.3. South Africa Equity-Risk Premium, 1870 to 2019

4. Bull and Bear Markets

Information on bull and bear markets in South Africa is provided in Table 14.2. Because South Africa is so dependent on gold and other minerals, the bull and bear markets don't line up with the bull and bear markets in other countries. During the past 100 years, bear markets have been modest by international comparison. In part, this has been because of the persistent inflation that has occurred in South Africa during the past few decades. South Africa hasn't had a 50% decline since the 1970s. Since then, all of the bull markets have risen more than 100%. The 1982-1987 bull market saw stocks rise by over 500%. Until inflation can be tamed, large bull markets and tamed bear markets are likely to continue.

Date	Bear Loss	Date	Bull Gain
02/29/1836	-41.84	06/30/1840	209.31
08/31/1848	-89.82	12/31/1852	467.21
08/31/1854	-67.34	04/30/1864	159.55
01/31/1868	-43.92	05/31/1882	236.21
10/31/1885	-50.44	03/31/1888	82.51
07/31/1891	-48.42	04/30/1893	46.58
09/30/1893	-21.89	09/30/1895	195.07
04/30/1897	-63.65	03/31/1899	94.18
12/31/1899	-29.73	5/31/1902	60.10
3/31/1908	-66.62	9/30/1912	48.41
7/31/1915	-34.17	12/31/2019	69.40
1/31/1922	-43.04	5/31/1928	108.15
6/30/1932	-42.21	12/31/1936	215.74

7/31/1940	-41.63	4/30/1948	176.29
4/30/1961	-50.34	4/30/1969	465.40
10/31/1971	-62.33	6/30/1973	129.16
11/30/1973	-27.00	3/31/1974	65.83
8/31/1976	-51.46	10/31/1980	387.13
6/30/1982	-46.69	10/16/1987	510.26
2/12/1988	-45.02	1/14/1992	144.76
10/15/1992	-21.22	4/20/1998	186.05
9/11/1998	-42.82	5/22/2002	165.37
4/25/2003	-36.83	10/11/2007	328.35
11/20/2008	-43.50	1/25/2018	246.26
3/19/2020	-38.46		

Table 14.2. South Africa Bull and Bear Markets, 1836 to 2020

5. Fixed-Income Market

South Africa was a British colony until 1910 and bond yields remained relatively low because there was little risk of default. Bond yields were around 4% or below until the 1950s. Bond yields gradually rose from 2.85% in 1936 to 18.09% in 1985. As in most countries, bond yields declined until the early 2000s, but did not continue their descent during the 2010s as inflation remained relatively high at 5.58% in the twenty-first century. Government bond yields are currently double-digit which makes them among the highest in the world. South Africa will need to find a way to control their budget deficit and inflation if they want to reduce bond yields during the coming decade.

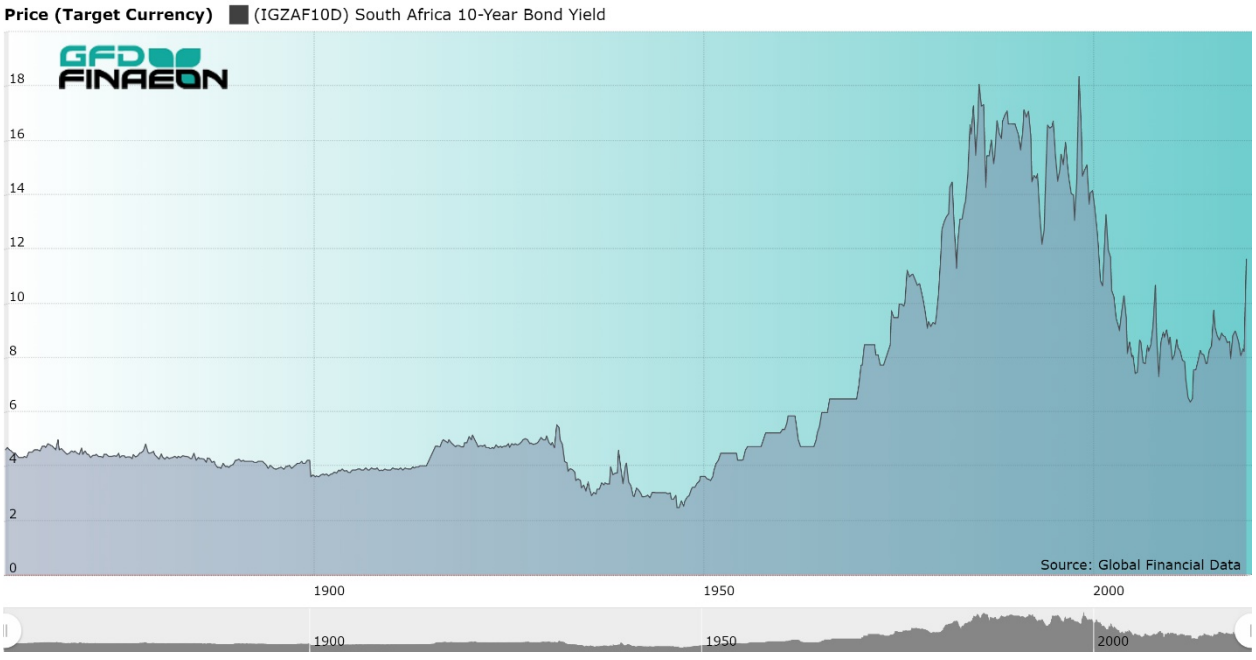


Figure 14.4. South Africa 10-year Bond Yield, 1860 to 2019

Until the 1950s, South Africa followed the typical pattern of the stock dividend yield exceeding the government bond yield. Rising inflation and bond yields in the 1950s pushed the

bond yield higher than the stock yield. In most countries, this pattern has reversed and during the past decade, the stock dividend yield now exceeds the bond yield, primarily because bond yields have dropped to almost zero. This is not true in South Africa. Bond yields are over 8% while the stock dividend yield remains low. Consequently, bond yields have not dropped below the dividend yield since the 1950s. There is no reason why South African government bond yields are likely to drop dramatically in the future, so bond yields will continue to exceed the dividend yield for years to come.

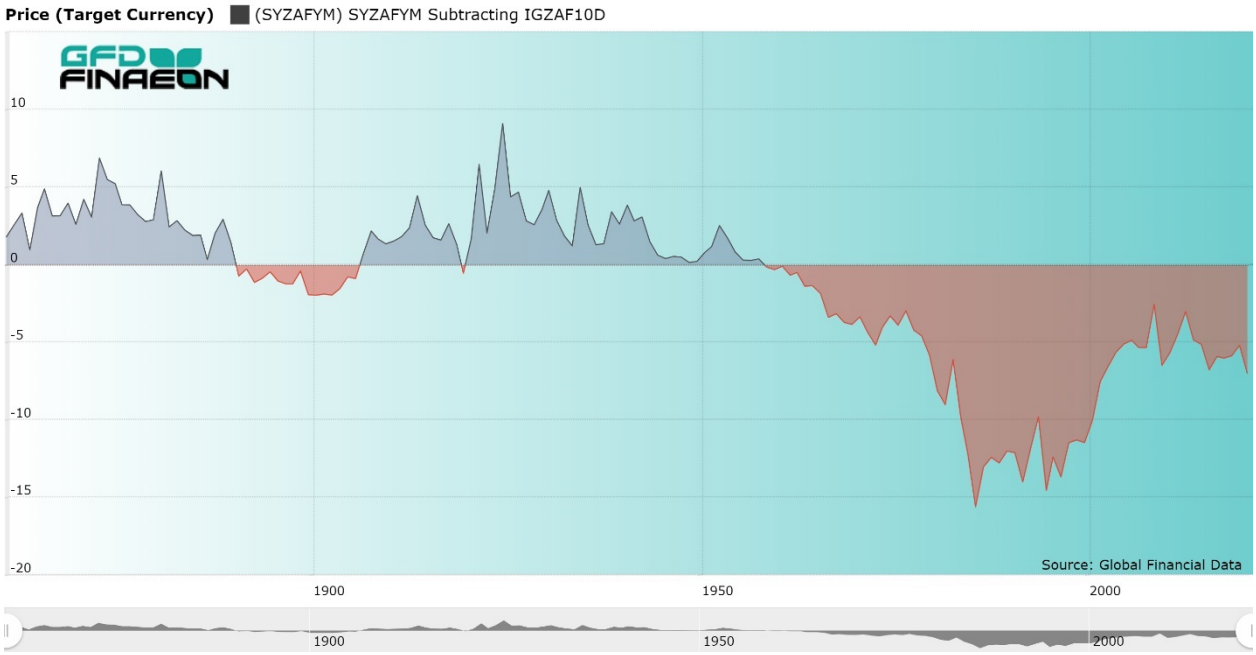


Figure 14.5. South Africa Stock Dividend Yield Minus Government Bond Yield, 1862 to 2020

6. Stock Market Capitalization and Government Debt Share of GDP

Because gold stocks have represented a large portion of the stock market in South Africa, the MCAP/GDP ratio has always been high relative to other countries. The MCAP/GDP ratio fluctuated between 50% and 100% until the 1980s and has risen to over 200% since then. Although this ratio would seem high in most countries, South African companies bring in capital to help mine for gold and other minerals. The MCAP/GDP ratio has been rising steadily over the past 40 years. The government debt/GDP ratio has remained below 50% during most of South Africa's history. Even with the growth in spending during the past two decades, the government debt/GDP ratio remains below 50% today.

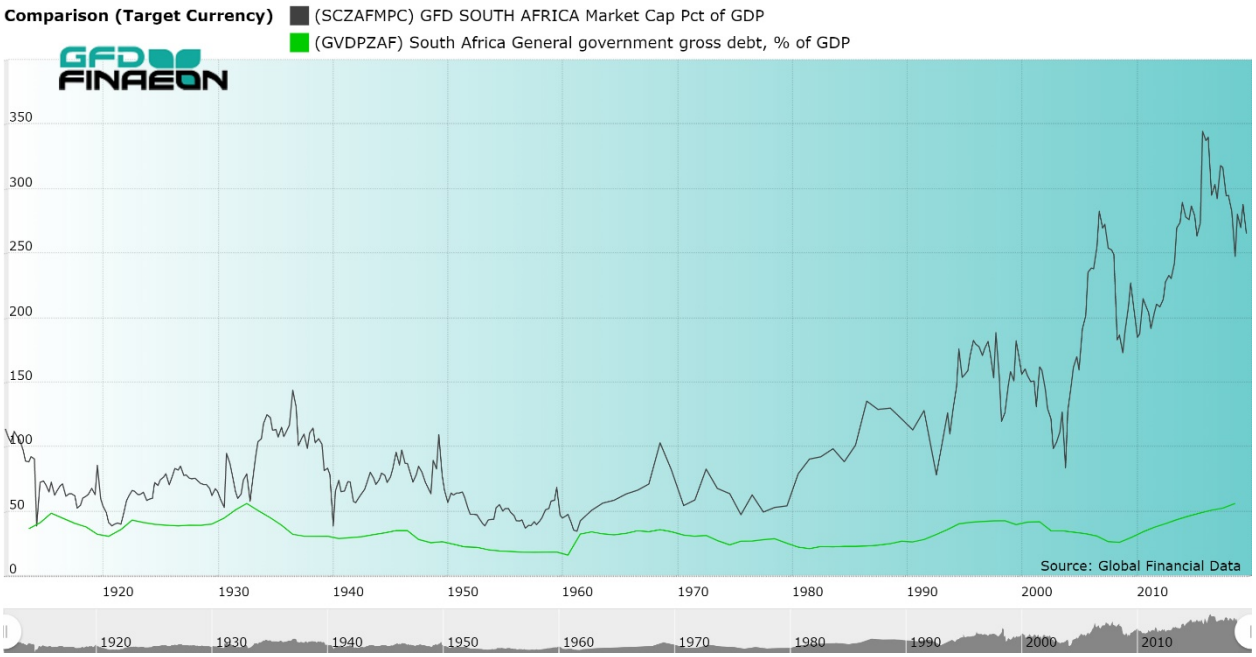


Figure 14.6. South Africa Market Cap and Government Debt as a Share of GDP, 1910 to 2019

7. Exchange Rate

The South African Pound was tied to the British Pound Sterling when it was introduced in the early 1800s. The exchange rate showed little change until 1949, in part because South Africa mined gold and was able to maintain a fixed exchange rate. The Rand replaced the Pound in 1967 with 1 Pound converted into 2 Rand. Since the Rand began floating in the 1970s, the currency has steadily depreciated because inflation rates in South Africa have exceeded the inflation rate in the United States and other developed countries. The Rand was at a premium to the U.S. Dollar in 1970, but now there are about 18 Rand to the U.S. Dollar. South Africa has a high inflation rate so the depreciation of the Rand will continue during the coming decade.

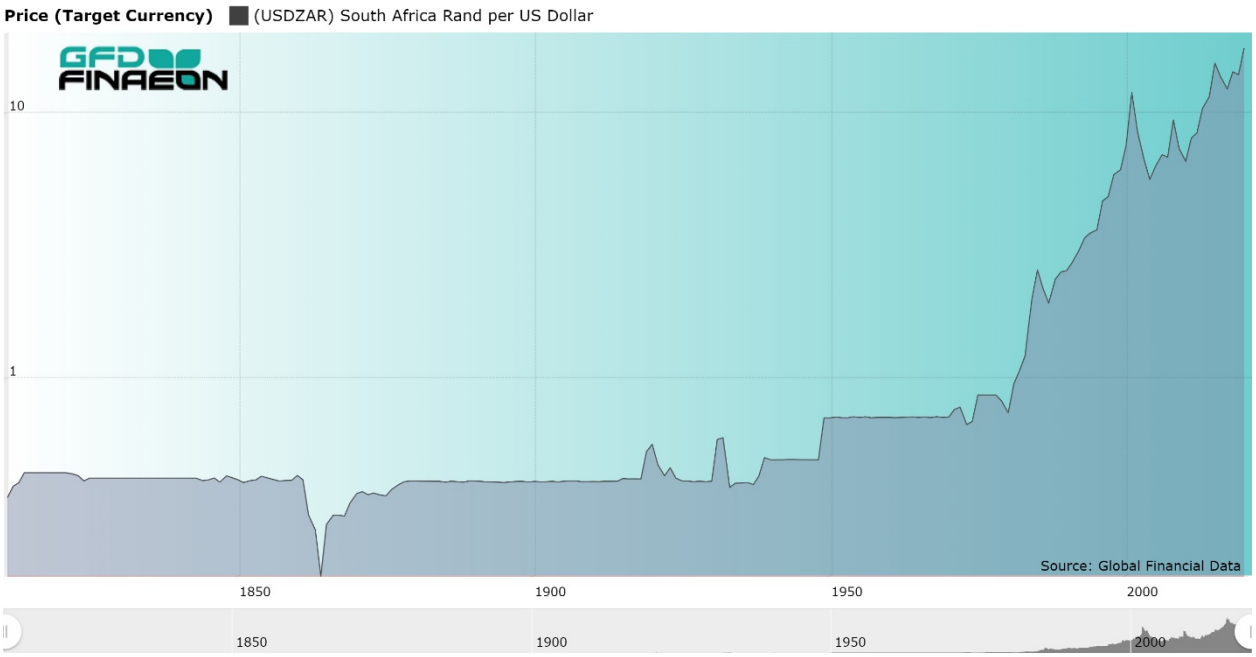


Figure 14.7. United States Dollar – South Africa Pound/Rand Exchange Rate, 1811 to 2019

8. Conclusion

South Africa is an emerging market that relies upon gold to drive its economy. This means that South Africa is a good countercyclical market for investors. If you look at the returns by decade or by era, South African stocks perform well when other markets perform poorly and poorly when other markets perform well. In addition to this, since South Africa is an emerging market, this aids South Africa's performance as a countercyclical investment relative to the rest of the world.

Overall, South African stocks have outperformed the Developed World x/USA index since 1899. On the other hand, bonds and bills have underperformed bonds and bills in the developed world. If the price of gold rises during the coming decade, investments in South Africa should do well. Global investors should also remember that South Africa provides countercyclical behavior relative to the rest of the world.

Spain

1. Sources

Global Financial Data uses the price of Banco de España stock from 1832 until 1914. Monthly data on Spanish stocks begins in 1918. No data are available during the Spanish Civil War between 1936 and 1940 when the stock exchanges were closed. Monthly data are available from 1940 to 1971 and daily data begin in 1971 using companies listed on the Madrid Stock Exchange. There are also regional exchanges in Barcelona and Valencia. The market capitalization of Spanish stocks is around $750 billion and includes almost 3000 companies.

Spanish bonds traded in Amsterdam in 1788 and are used from 1788 to 1824. Bonds that traded in London are used from 1824 to 1912. Madrid-based bonds are used from 1912 until 2019. Spain went through frequent defaults during the 1800s. Spain defaulted on its bonds in 1808, renewed paying interest in 1820, defaulted again in 1824 and reorganized its debt in 1834, providing bondholders with 2/3 of active interest paying bonds and 1/3 of passive non-interest paying bonds. Spain defaulted again in 1837, reorganized its bonds again in 1851, paying 1% interest on new bonds which gradually rose to 3% interest. New bonds were issued in 1870, but Spain defaulted once again, making no interest payments between 1873 and 1876 and reduced its interest rate in 1881. Beginning in 1898, Spain began passing several laws to convert its external debt to internal debt and has not defaulted since then.

The Spanish Discount Rate is used from 1900 to 1968, the Deposit Rate is used from 1969 to 1973 and T-bills are used from 1973 to 2019.

2. Returns to Stocks, Bonds and Bills

Data for stocks before World War I uses the price of the Banco de España stock exclusively to measure the performance of stocks in Spain. The stock index relied upon 22 shares when the broader index is introduced after World War I. The index made no progress before the Civil War, but recovered after the war and moved up from 1940 to 1973, fell back to 1981, then moved up until the 2007 Great Recession hit. Stocks provided double-digit returns in the 1960s, 1980s and 1990s, but declined in the 1940s, 1970s and 2010s Unfortunately, we have no dividend data before the Civil War, so total returns on stocks are only available beginning in 1940.

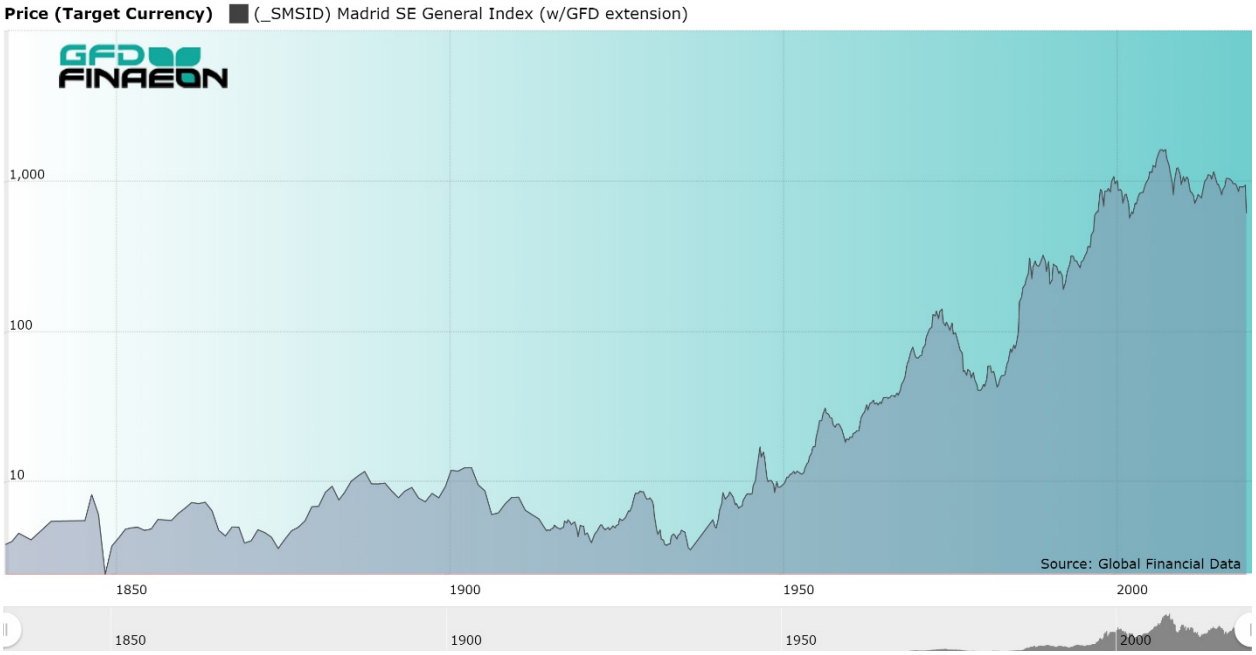


Figure 15.1. Spain Stock Price Index, 1833 to 2019

Measured in real U.S. Dollars, stocks did not keep up with inflation between 1945 and 1981, but provided an 8.9% return between 1981 and 2019. The economy did very well in the 1980s and 1990s when it emerged from its dictatorship, but has done poorly during the past twenty years. During the twenty-first century, stocks only returned 0.84%, much less than the 4.48% that bonds returned. Spain is still recovering from the bust that followed the 2007-2009 recession. The equity-risk premium has been negative in both of the decades of the twenty-first century. Cash underperformed inflation until the end of the 1970s, did well in the 1980s and 1990s, but has underperformed inflation during the twenty-first century.

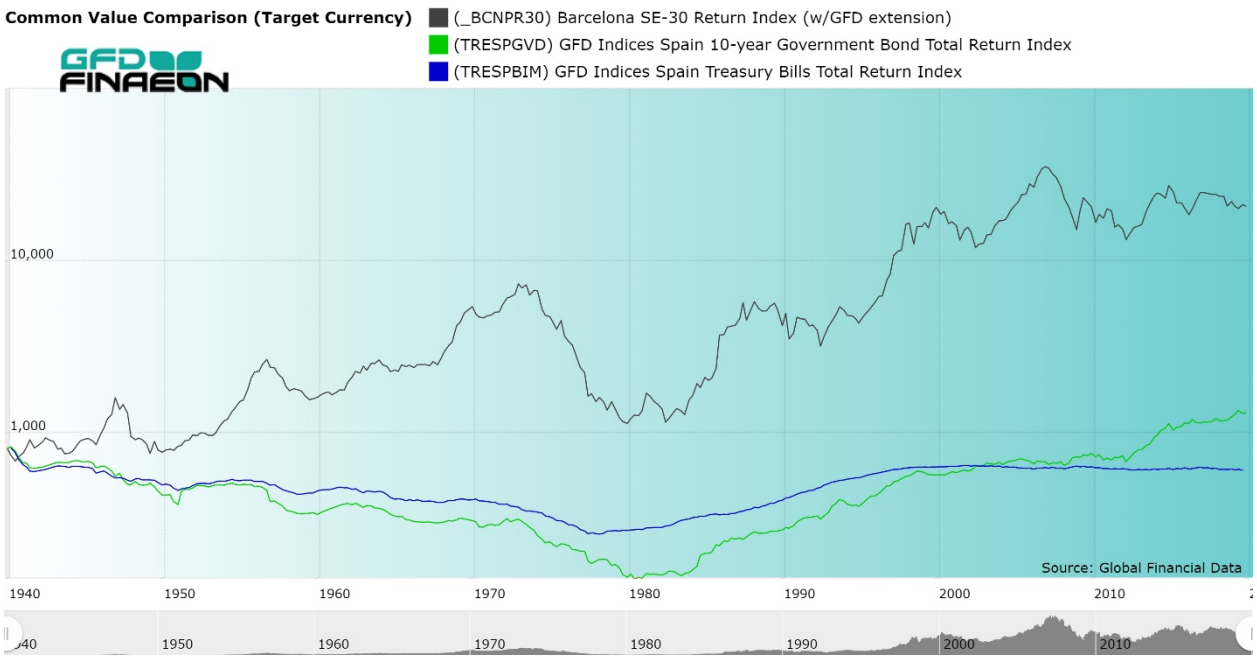


Figure 15.2. Spain Returns to Stocks, Bonds and Bills,

In short, Spanish financial markets need to find a source for growth. Bonds did well during the past decade, but with bond yields around 1% and T-bills yielding around 0%, there is little prospect for growth. A decade after the implosion of 2007-2009, the Spanish economy has yet to find its footing. With political uncertainty in Spain, it seems unlikely that growth will return to the Spanish economy soon.

3. Equity Risk Premium

Years By Decade	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
1819-1829			19.04			
1829-1839			9.43			
1839-1849	-0.91		0.15			-2.64
1849-1859	3.6		10.6			1.26
1859-1869	-8.55		-0.81			0.15
1869-1879	7.64		1.81			0.69
1879-1889	3.09		13.87			0.05
1889-1899	-2.33		3.35	2.75		-0.8
1899-1909	-2.07		8.34	3.93		1.13
1909-1919	-11.71		-3.17	-1.89		4.03
1919-1929	3.48		2.57	2.56		0.53
1929-1939	-4.09		5.3	4.65		4.88
1939-1949	-9.94	-7.27	-11.32	-10.57	4.57	9.47
1949-1959	-1.89	3.81	-5.84	-4.4	10.25	5.83

1959-1969	9.23	12.93	-0.65	-0.66	13.67	5.77
1969-1979	-11.94	-7.45	-0.19	3.18	-7.27	14.69
1979-1989	10.23	15.28	5.35	3.29	9.42	9.80
1989-1999	5.37	10.64	4.54	1.56	5.83	4.04
1999-2009	3.16	5.33	6.73	3.96	-1.32	2.93
2009-2019	-6.62	-3.46	2.28	-3.62	-5.62	0.91
By Era						
1848-1914	-0.04		5.93			0.26
1914-1945	-2.53		1.43	0.61		5.27
1945-1981	-5.29	-0.55	-6.76	-4.65	6.67	8.89
1981-2019	3.85	8.9	6.14	2.52	3.27	3.85
To Present						
1899-1999	-1.65		0.33	0.06		5.94
1899-2019	-1.68		1.01	0.07		5.26
1919-2019	-0.58		0.73	-0.11		5.80
1969-2019	-0.3	3.72	3.71	1.64	0.01	6.36
1999-2019	-1.85	0.84	4.48	0.1	-3.49	1.91

Table 14.1. Spain Returns to Stocks, Bonds, Bills, ERP and Inflation, 1819 to 2019

4. Equity Risk Premium

Data on the equity-risk premium is only available back to the reopening of the economy when the Civil War concluded in Spain. The ERP breaks down into four eras. During the periods until 1978 and from 1986 until 1998, the ERP was generally positive. In the late 1970s and early 1980s and during the twenty-first century, the ERP has been negative. These broad trends can be traced to the performance of equities in Spain. Stocks provided high returns in the two positive eras, but faltered in the late 1970s and twenty-first century. Returns to fixed income are minimal today, so the ERP will depend upon the stock market providing a positive return once again. To do this, the political uncertainty that pervades Spain will have to subside and more opportunities for growth will need to arise. Spain lacks direction both from a political and from an economic point of view. Until Spain is able to focus on its future direction, the economy and financial markets will suffer.

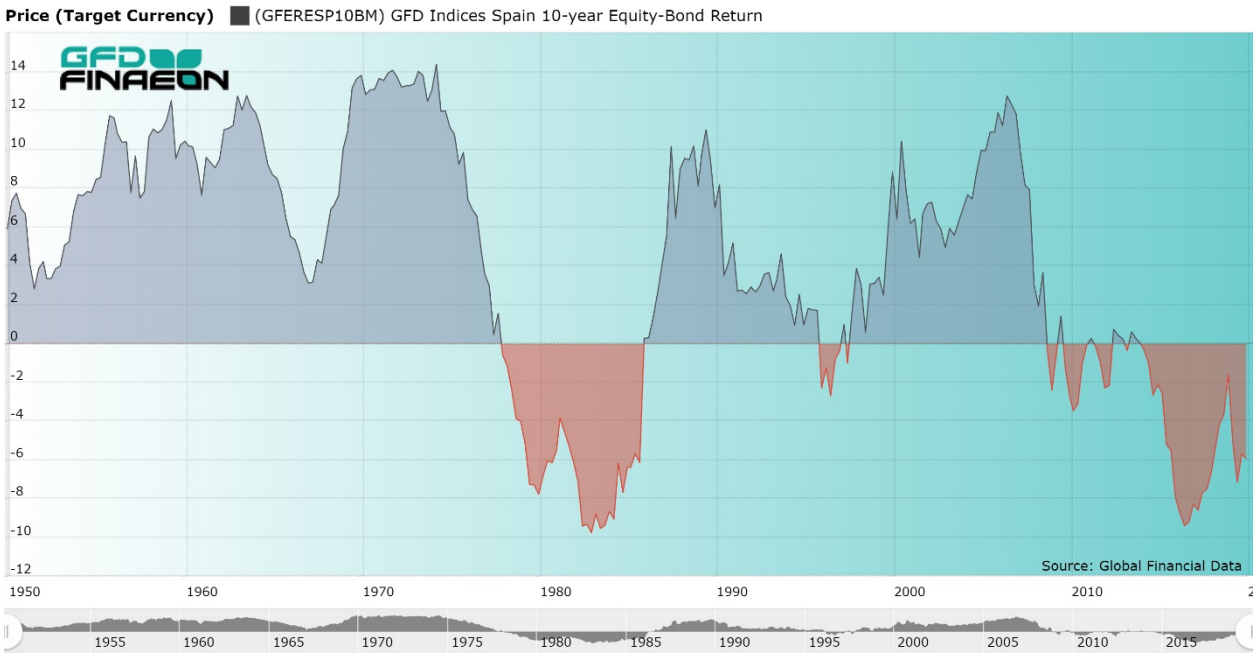


Figure 15.3. Spain Equity-Risk Premium, 1950 to 2019

5. Bull and Bear Markets

A record of the Bull and Bear Markets in Spain during the past 180 years is provided in Table 15.2. As the figures show, the primary reason for the poor performance of the Spanish stock market during the current century are the four bear markets of 2000, 2007, 2010 and 2015 which each produced losses of 50% or more. Spain has been in a bear market for 5 years now. The most severe bear market occurred in the 1970s when the stock market fell by 74%, an even worse decline than the bear markets after World War I and during the Great Depression. In order for the stock market to succeed in the coming decade, Spain needs to return to the bull markets of the 1960s and 1980s, but how it is to do this remains to be seen.

Date	Bear Loss	Date	Bull Gain
12/31/1833		12/31/1846	115.18
12/31/1848	-70.59	12/31/1863	202.25
12/31/1874	-50.8	12/31/1887	225.48
12/31/1896	-37.15	12/31/1903	68.99
11/30/1921	-68.93	2/28/1929	131.66
7/31/1936	-60.59	9/30/1942	142.52
1/31/1944	-24.29	3/31/1947	162.63
6/30/1949	-50.11	1/31/1957	293.63
11/30/1959	-43.25	4/24/1974	674.14
5/13/1980	-74.12	9/4/1981	65.12
12/15/1982	-32.84	10/6/1987	659.99
12/4/1987	-38.21	9/13/1989	63.58
10/5/1992	-45.44	1/31/1994	99.64
3/23/1995	-26.3	4/6/1998	255.54

10/5/1998	-31.59	3/6/2000	78.46
10/9/2002	-50.4	10/31/2007	203.33
3/9/2009	-58.46	1/6/2010	77.66
7/24/2012	-52.65	4/13/2015	99.78
3/16/2020	-49.47		

Table 15.2. Spain Bull and Bear Markets, 1833 to 2019

6. Fixed-Income Market

Spain defaulted on its bonds frequently in the 1800s. Spain defaulted on its bonds in 1808, renewed paying interest in 1820, defaulted again in 1824 and reorganized its debt in 1834, providing bondholders with 2/3 of active interest paying bonds and 1/3 of passive non-interest paying bonds. Spain defaulted again in 1837, reorganized its bonds again in 1851, paying 1% interest on new bonds which gradually rose to 3% interest. New bonds were issued in 1870, but Spain defaulted once again, making no interest payments between 1873 and 1876 and reduced its interest rate again in 1881.

During the 1900s, Spanish bond yields followed the trajectory of most European countries. Spain managed to avoid World Wars I and II, but fell into a civil war between 1936 and 1939. Bond yields rose to 18.11% in 1983, stayed in double digits for most of the 1980s and only started to fall to single digits in 1995. Today, bond yields have been below 2% most of the time since 2015 and show no inclination to rise above 2% in the near future. Now that Spain is part of the Euro, bond and bill yields will probably remain below 2% for years to come.

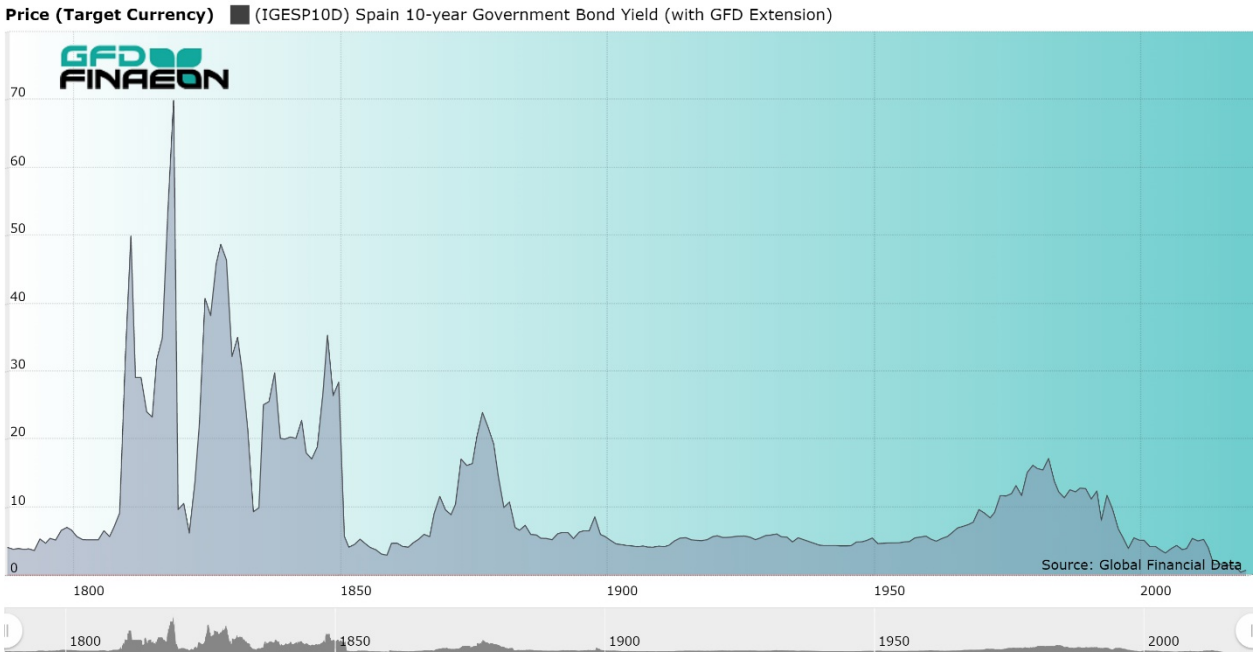


Figure 15.4. Spain 10-Year Government Bond Yield, 1788 to 2019

No other country in this survey has had such a consistently long period of time during which the yield on government bonds has exceeded the stock dividend yields. This has been

primarily because of relatively high yields on government bonds due to the risk of default by the Spanish government. Only during the past ten years, when declining bond yields resulting from Spain's membership in the Euro, has the dividend yield exceeded the government bond yield. As long as Spain remains part of the Euro during the coming decade, the dividend yield is likely to exceed the government bond yield, but if, for some reason, Spain were to leave the Euro or get kicked out of the Euro, bond yields would rise and likely exceed the stock dividend yield. Currently, this seems unlikely.

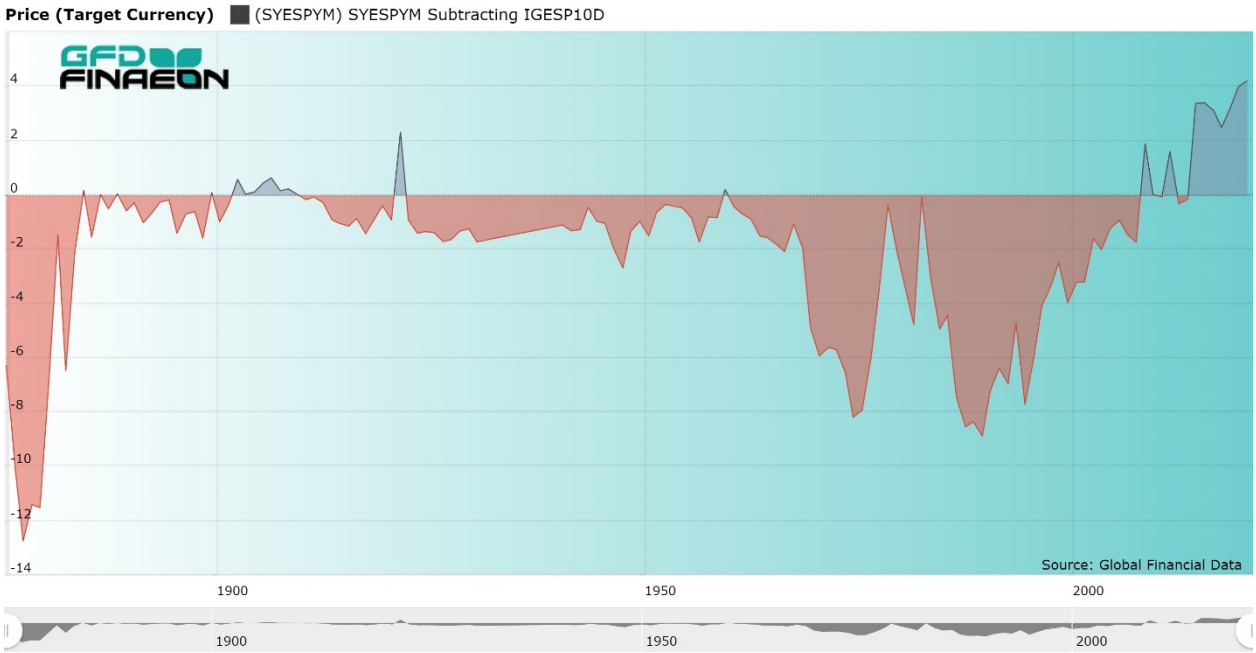


Figure 15.5. Spain Stock Dividend Yield Minus Government Bond Yield, 1870 to 2020

7. Stock Market Capitalization and Government Debt Share of GDP

The market capitalization of the Spanish economy has been generally been low. The MCAP/GDP ratio was under 40% until the 1980s. Between 1980 and 2007, the stock market showed dramatic growth as the Spanish economy boomed, first in the early 1990s and then during the real estate boom of the 2000s. By 2007, the market capitalization of the Spanish stock market was greater than GDP. This clearly was excessive because the MCAP/GDP ratio has fallen back since then and now is about half that, around 60% of GDP. The MCAP/GDP ratio has generally fluctuated in the 60%-80% range during the twenty-first century, and is likely to stay within that range in the coming decade.

By avoiding participation in World Wars I and II, Spain also avoided the large increases in government debt that many other European countries suffered through. In fact, if you look at the graph of Spain's government debt as a share of GDP in Figure 15.5, you can see that the Debt/GDP ratio generally fell during the century up until the 1970s. There was a large increase in the 1980s and 1990s, and then a strong jump after the 2007 financial crisis which has raised the Debt/GDP ratio to around 100%. This pushed bond yields to the 7% level in 2012, but they have declined since then.

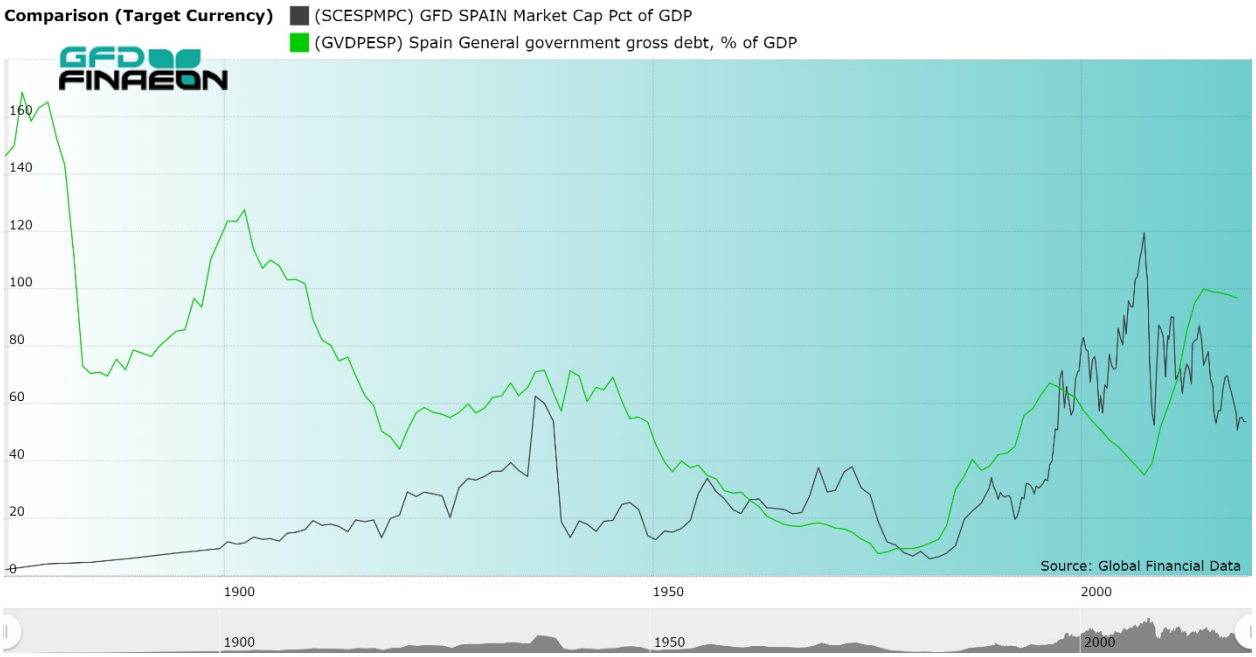


Figure 15.6. Spain Market Capitalization and Government Debt as a Share of GDP, 1870-2019

8. Exchange Rate

The Spanish Peseta had a similar value to the French Franc during the 1800s with 5 Pesetas to the U.S. Dollar. Most of the depreciation of the Peseta occurred between 1914 and 1980. Inflation in Spain slowly eroded the value of the Peseta, which fell to around 10 Pesetas to the US Dollar before World War II, 25 pesetas in 1949, 60 Pesetas in 1969 and 166 Pesetas to the Euro by the time Spain joined the Euro in 1999. Since 1999, the Euro has been used as the medium of exchange in Spain, and the exchange rate relative to the US Dollar has stabilized during the past 20 years.

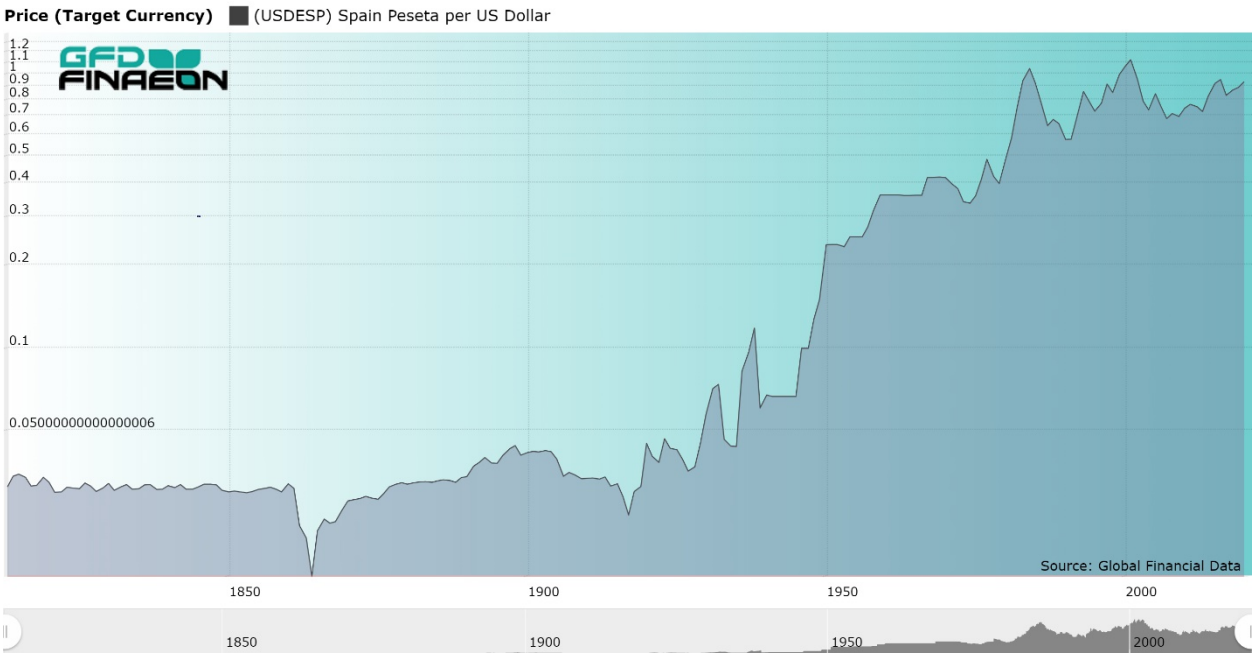


Figure 15.7. United States Dollar-Spanish Peseta Exchange Rate, 1813 to 2019

9. Conclusion

Spain's history during the twentieth century was quite different from the rest of Europe. It avoided participation in World War I and World War II, but suffered through a civil war between 1936 and 1939 when the stock market shut down. The economy boomed when democracy returned to Spain in the 1980s and saw strong growth during the 2000s before the financial crisis hit in 2007 and construction came to a halt. Spain has struggled to regain its footing and find a new path to growth. Meanwhile, problems in Catalonia and the success of new political parties have created political and economic uncertainty. Spain has made the transition to being a successful part of the European Union, but now faces an uncertain path into the future. Whether Spain can return to its growth of the 1980s and 2000s is uncertain.

Sweden

1. Sources

Data are annual for Sweden from 1870 through 1912 using the Affarsvarlden Index. The Riksbank Index is used from 1913 to 1943. From 1944 on the Affarsvarlden General Index is used. Daily data is available beginning in 1980. NASDAQ OMX took over the calculation of the index and data is available from NASDAQ OMX beginning in 1986. Swedish bonds traded in Amsterdam in 1788 and data is available from Amsterdam through 1815. Data from Sweden begins in 1853 using individual bonds through 1918. An average of several bonds is used beginning in 1918, and beginning in 1980, the yield on the 10-year bond is used. The Sveriges Riksbank's Discount Rate is used from 1856 to 1932, the Swedish Deposit Rate is used from 1933 to 1954 and Swedish T-bills from 1955 to date.

2. Returns to Stocks, Bonds and Bills

Equity returns in Sweden have been modest when compared to returns to United States returns. Between 1869 and 2019, shares returned 6% in real terms in US Dollars. During the same period of time bonds returned 2.30% and bills returned 1.95%. This produces an ERP of 3.62% for Sweden. Although Sweden was neutral during World War I and II, returns to equities were low between 1914 and 1945, providing only a 1.76% rate of return. However, during both the 1980s and the 1990s, equities produced double digit returns in Sweden. During the twenty-first century, however, returns have been more modest at 3.52%, primarily because of low returns during the first decade. Sweden has provided consistent returns to equities over the past 100 years, in part because Sweden has remained neutral during World War I and II. Although Sweden relies upon the government for many of its services, it has also privatized large parts of its economy during the past two decades.

The total return to bonds was -1.15% between 1945 and 1981 and 9.51% between 1981 and 2019 providing a stark contrast between the two periods of time. Both bonds and bills have provided modest returns during most of Sweden's history with bonds providing a 1.56% return since 1900 and bills providing a 1.15% return. Both of these returns were negative during the past decade, and with low yields on bonds and bills in Sweden today, it seems unlikely that fixed-income investors will receive more than 1-2% during the coming decade. This means that the ERP will be dependent upon the returns to stocks rather than the return to bonds during the coming decade.

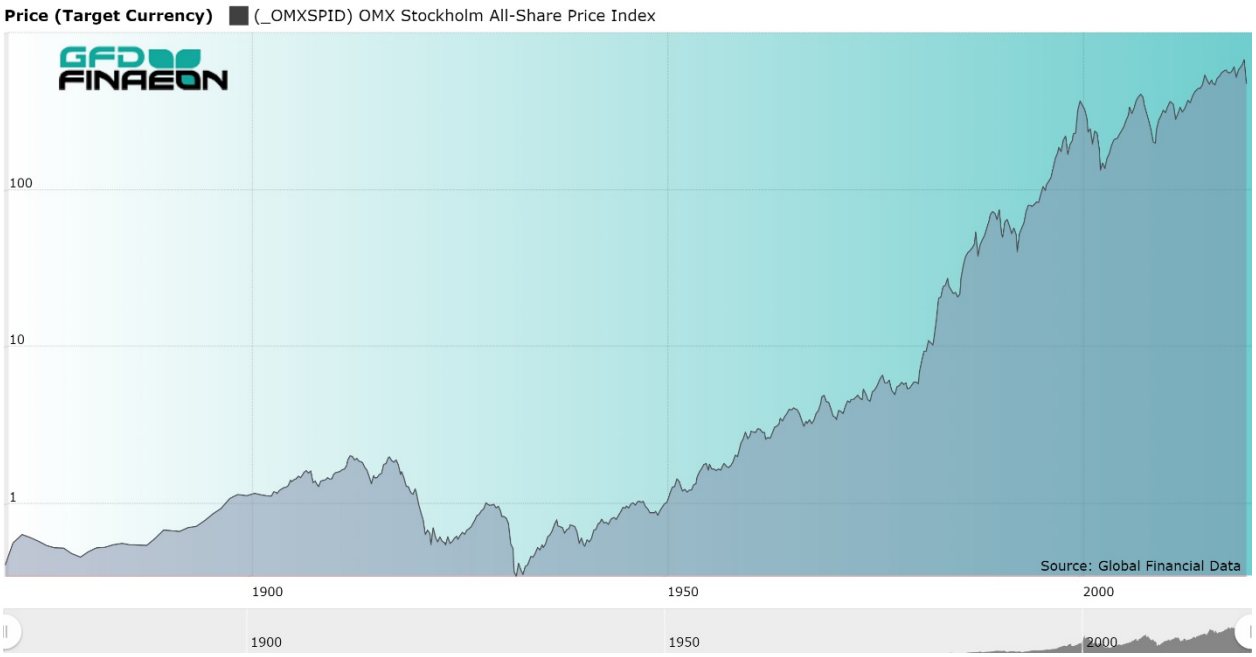


Figure 16.1. Sweden All-Share Stock Price Index, 1870 to 2019

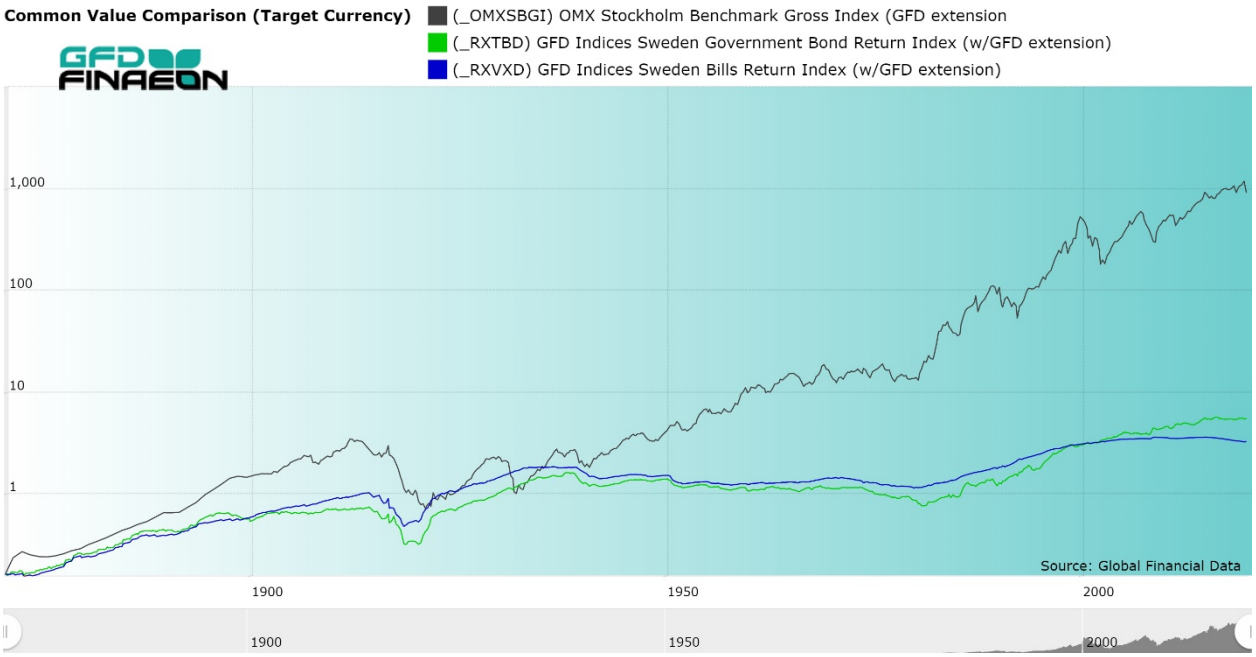


Figure 16.2. Sweden Real Returns to Stocks, Bonds and Bills in USD, 1870 to 2019

Years By Decade	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
1859-1869			0.62	1.1		0.82
1869-1879	3.38	8.7	8.08	7.44	0.58	-0.06
1879-1889	4.09	7.98	5.05	4.3	2.79	-0.5
1889-1899	5.01	8.94	2.91	4.51	5.85	0.72

1899-1909	0.11	3.31	0.79	2.86	2.49	0.98
1909-1919	-10.83	-7.12	-5.71	-3.71	-1.49	10.96
1919-1929	1.16	6.79	9.31	8.58	-2.30	-4.57
1929-1939	-4.28	0.57	4.95	3.57	-4.17	0.64
1939-1949	1.68	6.51	0.17	-1.36	6.33	3.76
1949-1959	5.26	9.71	-3.33	-3.24	13.49	4.47
1959-1969	1.97	5.49	1.3	2.65	4.13	3.85
1969-1979	-2.42	1.6	1.03	1.53	0.57	8.87
1979-1989	17.62	21.05	2.12	2.8	18.54	7.65
1989-1999	9.5	12.02	5.27	2.12	6.42	3.02
1999-2009	-1.58	0.53	4.87	2.4	-4.13	1.51
2009-2019	3.86	6.59	-1.11	-4.19	7.79	1.13
By Era						
1914-1945	-3.18	1.76	2.63	0.75	-0.85	2.75
1945-1981	1.52	5.59	-1.15	-0.45	6.81	5.66
1981-2019	4.01	6.95	9.51	3.71	-2.34	2.88
To Present						
1899-1999	1.72	5.76	1.51	1.52	4.19	3.88
1869-2019	2.12	6	2.3	1.95	3.62	2.76
1899-2019	1.61	5.38	1.56	1.11	3.76	3.45
1919-2019	3.1	6.93	2.4	1.43	4.42	2.97
1969-2019	5.14	8.1	2.41	0.9	5.56	4.39
1999-2019	1.1	3.52	1.83	-0.95	1.66	1.32

Table 16.1. Sweden Returns to Stocks, Bonds, Bills, ERP and Inflation

3. Equity Risk Premium

Jeremy Siegel talks about how stocks tend to outperform bonds over time, and nowhere is this more true than in Sweden. The country has had one of the most consistently positive ERPs of any country in the world. With a short exception at the end of the 2000s, the ERP was consistently positive during the past 80 years. On the other hand, the ERP was negative during the 1920s and 1930s, in the 1920s because of strong returns to bonds and in the 1930s because of poor returns to equities. Because the yield on bonds is so low in Sweden right now, any positive return to stocks, which seems likely, will lead to a positive equity-risk premium in the decade to come.

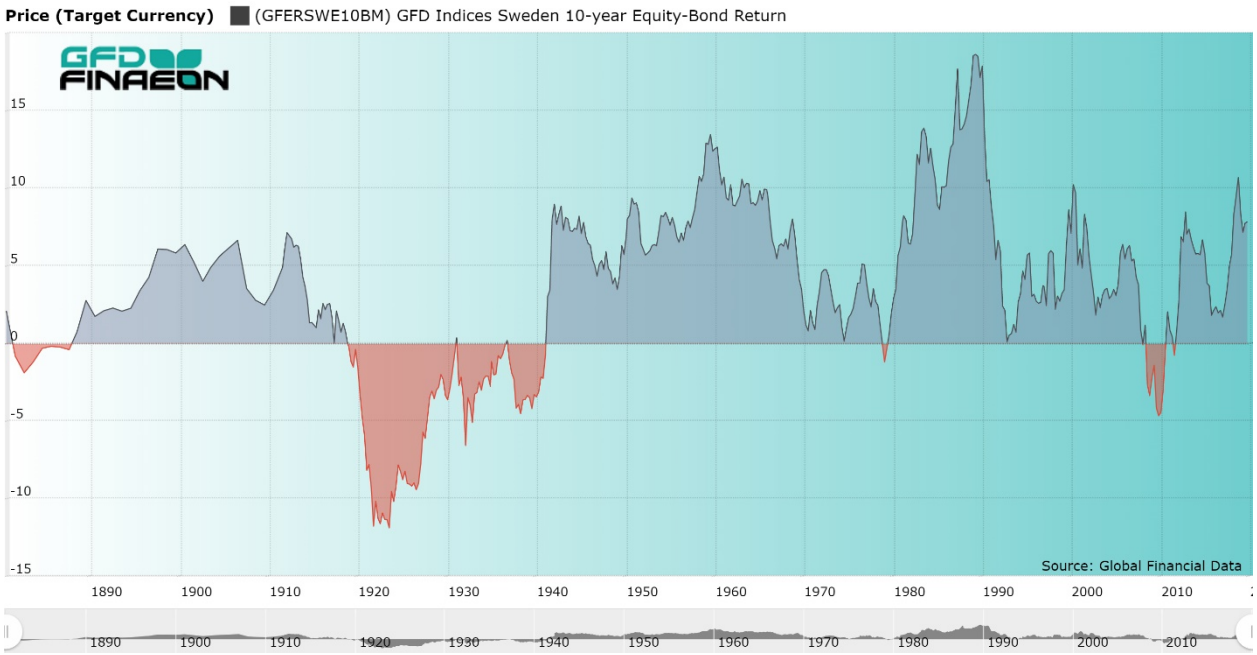


Figure 16.3. Sweden 10-year equity Risk Premium 1880 to 2019

4. Bull and Bear Markets

A history of bull and bear markets in Sweden is provided in Table 16.2. Sweden has generally endured shallow bear markets which has contributed to the consistency of the country's returns to investors. The stock market suffered severe downturns in 1917 and 1929. In both cases, the stock market declined by over 74% before it began its recovery. The 68% decline in 2000 occurred because the stock market had become severdly overvalued. Although there were a couple bear markets during which stocks declined by over 50% in 1989 and in 2007, most of the other declines in the stock market have been modest. There were several super bull markets in Sweden, the longest of which occurred between 1940 and 1965 when the stock market rose over 663%. The most dramatic gains occurred between 1980 and 1987 when the stock market climbed 1140%. The strength of the bull markets has contributed to the returns to Swedish stock over time.

Date	Bear Loss	Date	Bull Gain
12/31/1901		2/28/1907	153.93
12/31/1914	-28.65	4/30/1917	73.50
3/31/1922	-74.03	7/31/1929	183.14
5/31/1932	-75.40	3/31/1937	197.90
4/30/1940	-35.41	8/31/1965	663.01
12/31/1966	-25.98	5/31/1969	63.25
10/31/1970	-36.51	4/30/1976	112.17
11/30/1980	-33.17	10/8/1987	1140.77
11/11/1987	-38.97	8/16/1989	125.52
10/5/1992	-53.45	7/20/1998	517.07
10/8/1998	-39.03	3/6/2000	188.57
3/12/2003	-68.04	7/16/2007	226.81
11/21/2008	-59.04	1/3/2011	112.07

10/4/2011	-27.98	4/27/2015	109.56
2/11/2016	-22.84	2/20/2020	67.75
3/23/2020	-34.67		

Table 16.2. Sweden Bull and Bear Markets, 1901 to 2019

5. Fixed-Income Market

Swedish bonds traded in Amsterdam in the late 1700s, but Sweden defaulted on its debt during the Napoleonic wars. There was no record of prices in the years that followed, and by the time the 4% Provincial Mortgage bond was issued in 1853, fears of default had subsided and bonds yielded around 4% until the advent of World War I. Bond yields rose from 3.01% in 1945 to 14.32% in 1984 and remained in double digits for most of the next 10 years. Since then, bond yields have steadily declined and are now close to zero. As in the rest of Europe, bond yields will probably be under 1% for the rest of the decade.

Figure 16.4 Sweden 10-year Government Bond Yield, 1788 to 2019

The difference between the dividend yield and the yield on government bonds is illustrated in Figure 16.5. Although the dividend yield exceeded the government bond yield in the majority of the years up until the 1950s, there was a period in the late 1800s when government bonds paid a higher yield than stocks. Since the 1950s, Sweden has followed the typical pattern of rising bond yields up until the 1980s and declining bond yields since then. Low bond yields during the past ten years have meant that the stock dividend yield has exceeded the government bond yield. This pattern is likely to continue during the coming decade since government bond yields are likely to remain low.

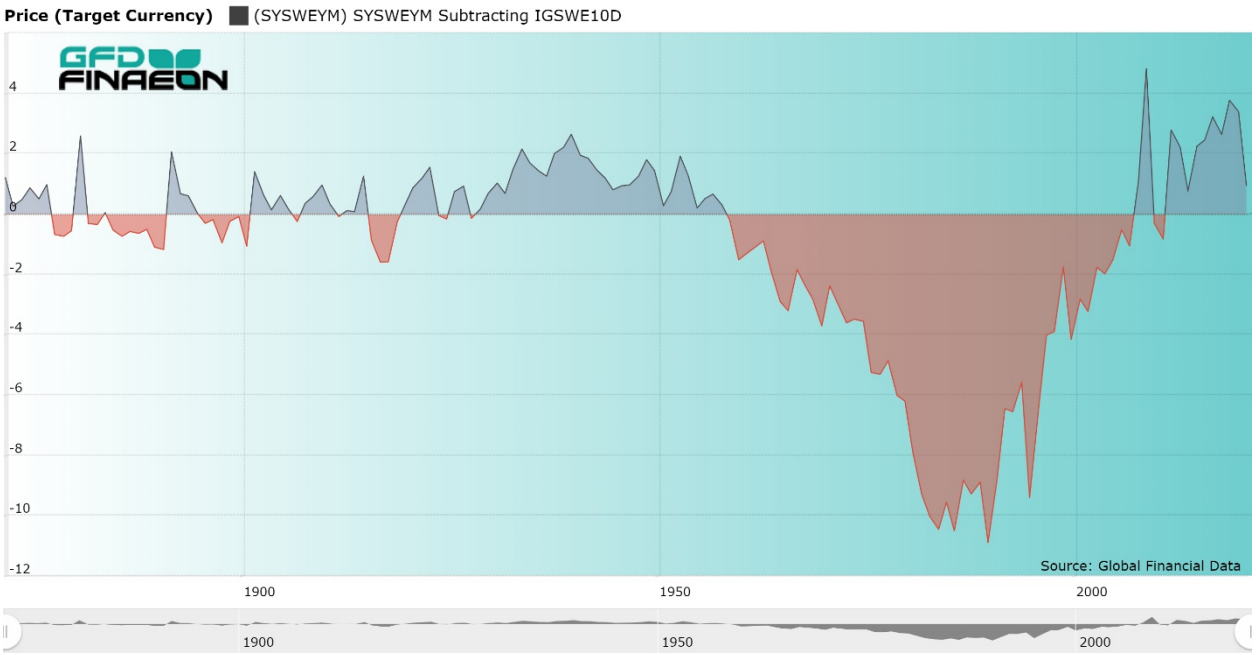


Figure 16.5. Sweden Stock Dividend Yield Minus Government Bond Yield, 1870 to 2020

6. Stock Market Capitalization and Government Debt Share of GDP

During most of the period between 1870 and 1980, the stock market's capitalization represented less than 20% of GDP. Between the 1980s and 1990s, the MCAP/GDP ratio rose from around 10% to over 150% of GDP. The ratio collapsed down to 60% in 2003, rose back to over 150% in 2007, then fell back down to 60% again, and has gradually advanced to back over 100% since then. This shows an abrupt change in the Swedish economy which was local until 1980, but has become more market-oriented and international since then.

Government debt as a share of GDP has been modest throughout most of Sweden's history, remaining below 50% during most of the country's history. Even today, government debt represents about 40% of GDP. The government has represented a large share of GDP, at one point representing over two-thirds of the economy, but with the exception of the 1980s Sweden has avoided running large debts to fund these expenditures.. Since so many services are provided through the government, the private sector has remained relatively small in Sweden. By keeping government debt low relative to GDP, this has aided the stock market in its strong performance over time.

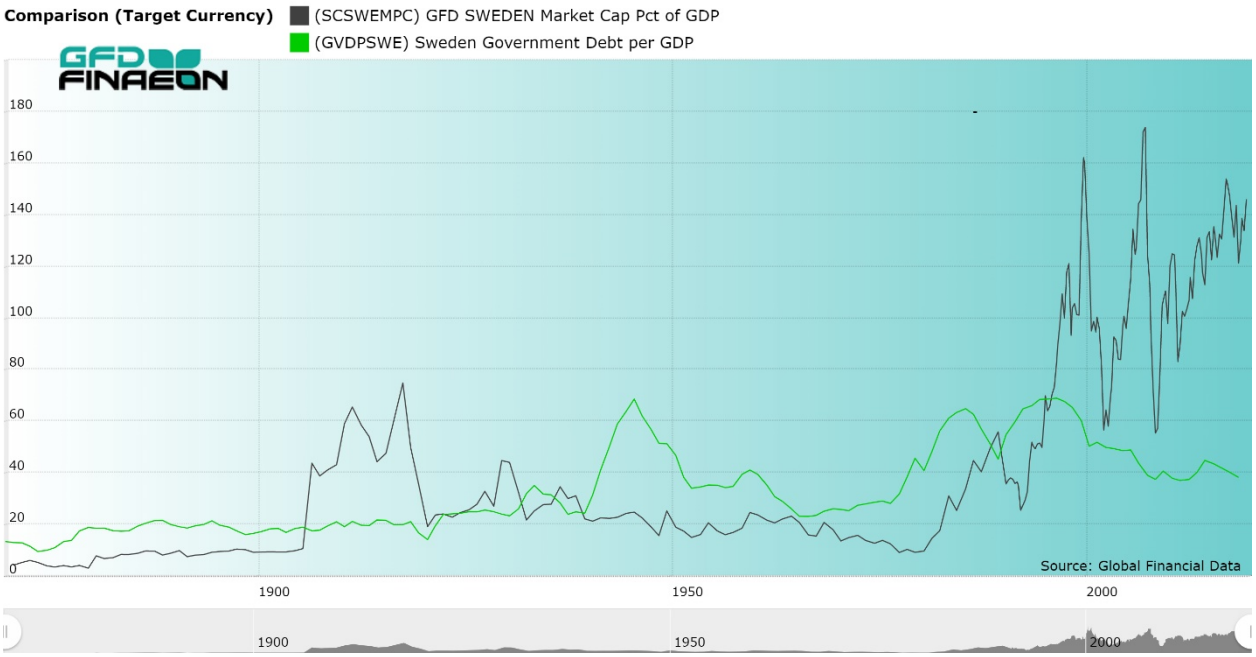


Figure 16.6. Sweden Market Cap and Government Debt as a Share of GDP, 1870-2019

7. Exchange Rate

The exchange rate between the Swedish Kroner and United States Dollar was slightly less than four-to-one until World War II. Because Sweden did not participate in World War I or II, Sweden didn't suffer from the inflation that occurred in most European countries between 1914 and 1949. During the past 40 years, the Kroner has depreciated relative to the United States Dollar. The exchange rate is now 10 Kroner to the United States Dollar and will probably continue to depreciate during the next few years.

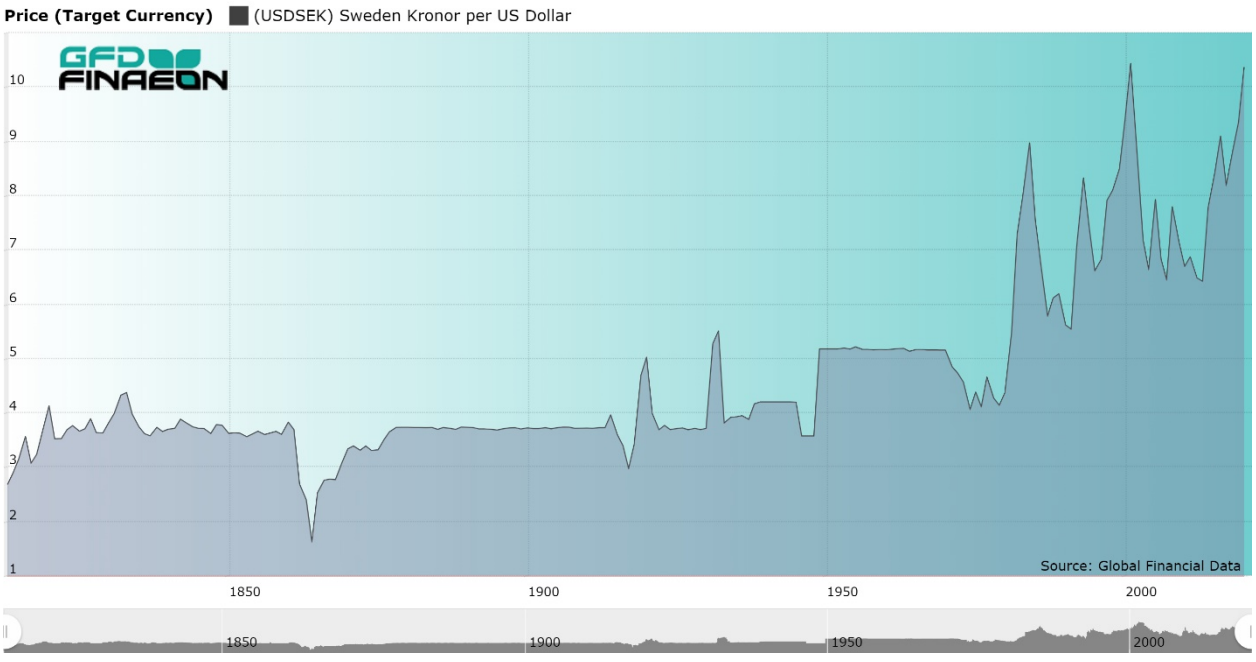


Figure 16.7. United States Dollar – Sweden Kroner Exchange Rate 1813 to 2019

8. Conclusion

Sweden remained neutral during World War I and II which provided a degree of stability to the Swedish economy that other European countries did not enjoy. This has provided Sweden with more consistent returns than other countries. During the past forty years, the Swedish economy has opened up to international trade providing high returns to investors and growth in the market capitalization of the stock market. Despite the government representing such a large portion of the Swedish economy, the government has kept its government debt low which has freed up funds to invest in Swedish companies. Although bond returns will likely be low in the coming decade, the stock market should continue to provide high returns to investors.

Switzerland

1. Sources

Switzerland had three regional exchange in the 1800s in Geneva (1850), Zurich (1873) and Basel (1876). Today they have been merged into a single, electronic Swiss exchange. Switzerland is home to a number of international companies that enables the Swiss stock market to be high relative to its GDP. Switzerland has had the lowest inflation of any country in the world during the past century, has had the strongest currency in the world, and has an international banking system that offers financial services to people throughout the world. Yet, Switzerland is one of the few countries in Europe that is not part of the Euro.

The Swiss National Bank published indices of Swiss stocks from 1914 until they were discontinued in 1988. The Vereinigung Schweizerischer Effektenborsen has calculated daily indices of Swiss stocks since 1987 and between these two sources, a complete picture of the performance of Swiss stocks is available. Because of Switzerland's federal organization, the country lacks a long history of government-issued bonds. Swiss Railroad bonds are used from 1899 to 1923 and Confederation bonds have been used since then. The Swiss National Bank's discount rate is used between 1895 and 1956, bank deposits are used between 1956 and 1979, and T-bills are used since 1980.

2. Returns to Stocks, Bonds and Bills

Swiss stocks have provided consistently high returns to investors as its international companies are able to generate profits from Europe and the rest of the world. The market cap of Swiss companies is over 200% of GDP with Nestle, Novartis and UBS among the Swiss companies that reach out to the rest of the world. There has never been a decade in which Swiss stocks generated a negative return after inflation in US Dollars. This has enabled Swiss stocks to return 6.72% per annum during the past 100 years. Stocks provided double-digit returns in the 1920s and 1980s. Unlike in many countries, because of Swiss neutrality, there was little difference between stock returns between 1914 and 1945 (3.83%) and 1945 and 1981 (3.93%). Switzerland generated double-digit returns in the 1990s and more modest, but positive returns during the twenty-first century.

Because Switzerland didn't have high inflation, relative to other countries, in the 1970s, government bond yields never hit double-digit levels, hitting a high of 7.44% in 1974. The 1981 and 1992 peaks were below the 1974 peak. While some countries have had four decades of bonds underperforming inflation since World War II, bonds provided negative returns only in the 1980s. Nevertheless, there was a large contrast between the return to bonds between 1945-1981 (1.55%) and 1981-2019 (8.49%). Swiss bond yields are the lowest in the world, in part, because Switzerland has some of the lowest inflation in the world. Inflation was under 1% per annum in the 2000s and deflation occurred in the 2010s.

Bill and bond returns are likely to be close to zero during the coming decade. Since Swiss companies are not dependent upon the Swiss economy alone for their growth, they should continue to grow in size during the coming decade. The Swiss tradition of high returns to investors is likely to continue.

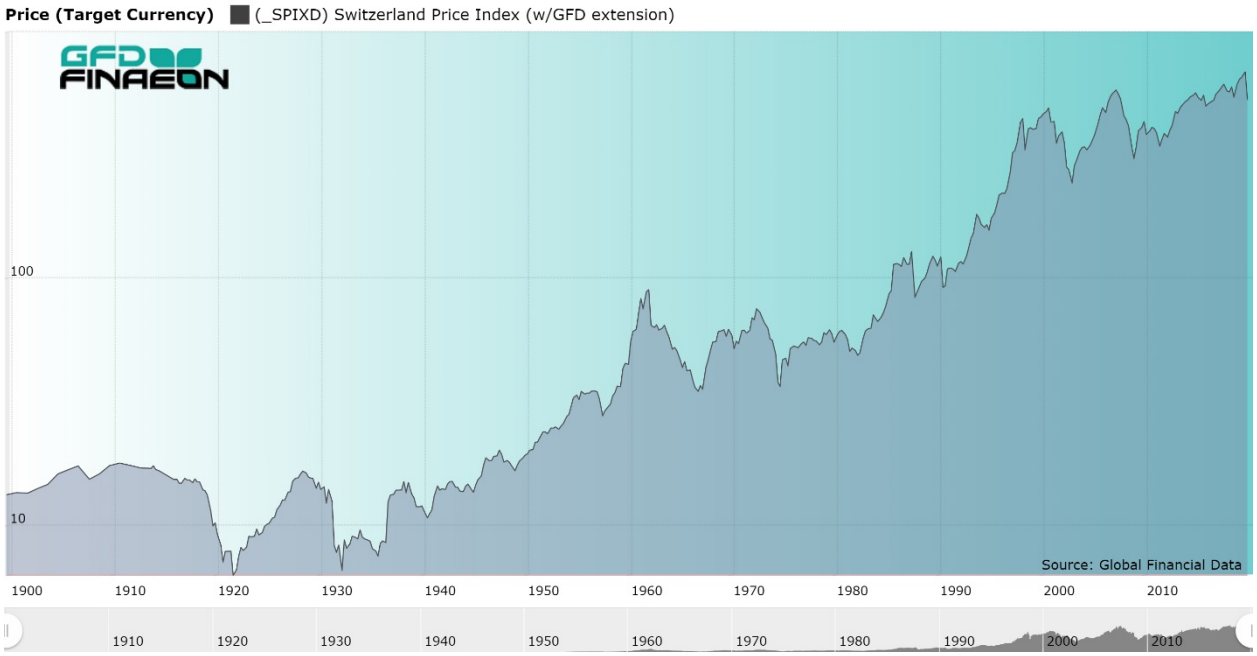


Figure 17.1. Switzerland Stock Price Index, 1900 to 2019

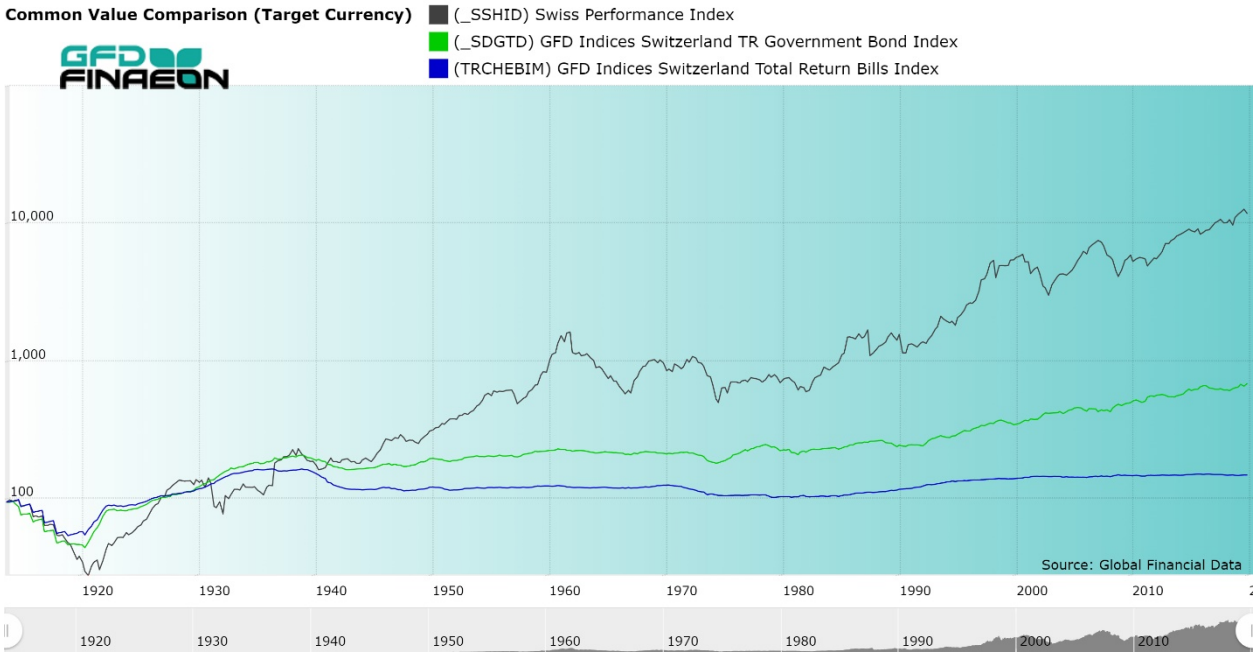


Figure 17.2. Switzerland Returns to Stocks, Bonds and Bills, 1914 to 2019

Years	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
By Decade						
1899-1909	0.37		1.14	1.79		1.16
1909-1919	-12.29		-5.78	-3.03		9.02
1919-1929	5.03	11.24	7.51	5.38	3.48	-3.2
1929-1939	1.77	6.29	7.88	5.69	-1.47	-1.28
1939-1949	-0.3	4.18	-0.85	-3.31	5.07	4.49
1949-1959	6.8	9.86	0.46	-0.65	9.36	1.23
1959-1969	0.7	2.71	0.42	0.76	2.27	3.22
1969-1979	2.46	5	8.89	5.95	-3.56	4.97
1979-1989	2.29	5.61	-0.75	-0.24	6.40	3.35
1989-1999	10.49	12.27	2.51	0.82	9.53	2.13
1999-2009	1.01	3.04	6.26	3.39	-3.03	0.92
2009-2019	4.21	7.45	1.76	-1.03	5.59	-0.05
By Era						
1914-1945	-1.41	3.83	3.33	1.69	0.49	2.35
1945-1981	1.19	3.93	1.55	0.55	2.34	3.09
1981-2019	3.98	5.92	8.49	3.29	-2.36	1.38
To Present						
1899-1999	1.57		2.05	1.27		2.46
1899-2019	1.74		2.37	1.25		2.12
1919-2019	3.4	6.72	3.35	1.63	3.27	1.55
1969-2019	4.04	6.63	3.68	1.75	2.85	2.25
1999-2019	2.6	5.22	3.99	1.16	1.19	1.55

Table 17.1. Switzerland Returns to Stocks, Bonds, Bills, ERP and Inflation, 1899 to 2019

3. Equity Risk Premium

The Equity-Risk Premium for Switzerland is illustrated in Figure 17.3. Although there have been periods when bonds outperformed stocks, in most years, equities have outperformed bonds. Nevertheless, the equity-risk premium has been small, averaging 3.27% during the past 100 years, though this has been dropping over time. The ERP was 2.34% between 1945 and 1981, but bonds beat stocks by 2.36% between 1981 and 2019. Bonds outperformed stocks in the early 1920s, late 1930s, 1970s and early 1980s and during the Great Recession of 2007. Because of the consistency of returns in Switzerland, the ERP has not gone through the wild swings that has occurred in other countries. The premium of stocks over bonds has never reach 14% and rarely exceeded 10%. With the yield on bonds and bills negative across the time spectrum, fixed-income investors are unlikely to receive a positive return in the coming decade. Whatever the return to equities is, that will probably determine the ERP for stocks in the coming decade.

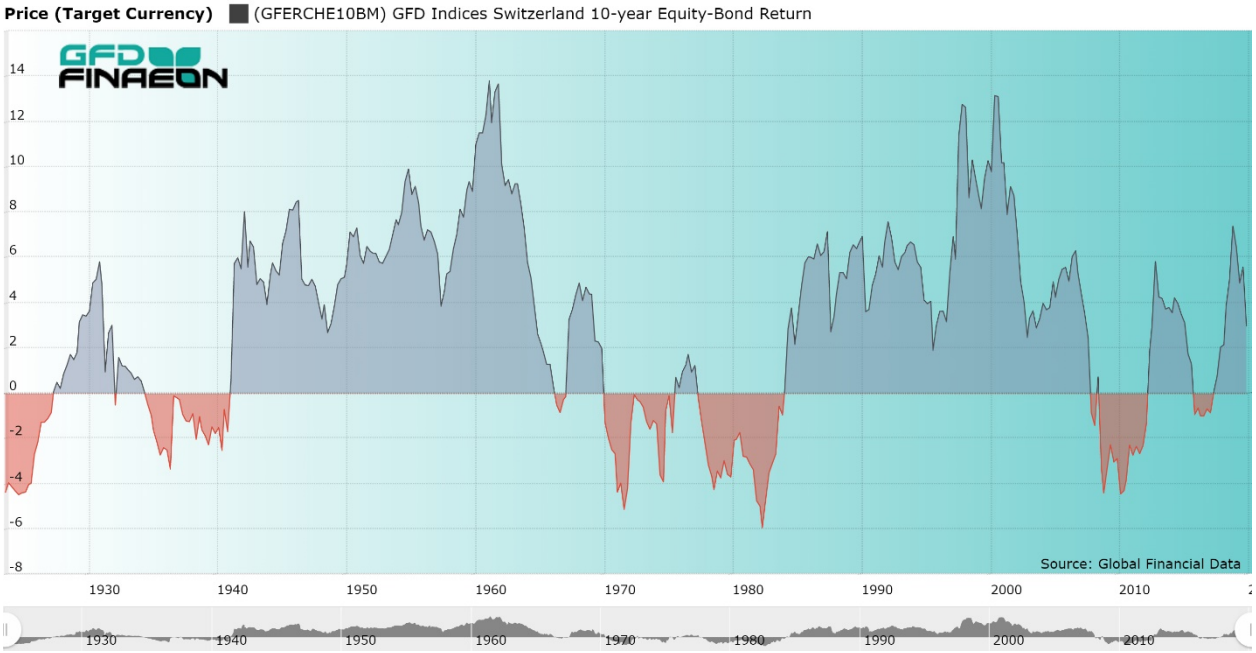


Figure 17.3. Switzerland 10-year Equity Risk Premium, 1924 to 2019

4. Bull and Bear Markets

A record of bull and bear markets in Switzerland is provided in Table 17.2. Compared to other countries, bear markets have been modest. Only four bear markets have provided drops over 50% in 1928, 1972, 2000 and 2007. The worst bear market was during the Great Depression between 1928 and 1932 when the market lost 61% of its value. Similarly, bull markets have been moderate in their increases when compared to other countries, in part because inflation has been modest. The largest bull market occurred between 1957 and 1962 when the stock market rose 258%. Although the bull markets have been modest, the majority have risen in price by over 100%. Because of Switzerland's ability to control inflation and the international integration of financial markets, this pattern of modest bulls and modest bears is likely to continue during the current decade.

Date	Bear Loss	Date	Bull Gain
12/31/1921		9/30/1928	165.11
5/31/1932	-61.19	7/31/1938	137.05
7/31/1940	-30.86	1/25/1957	240.24
10/18/1957	-26.32	3/9/1962	258.68
12/2/1966	-65.06	5/27/1969	108.08
5/26/1970	-30.16	9/11/1972	58.60
12/30/1974	-52.15	10/8/1979	72.16
7/8/1982	-24.69	10/5/1987	178.53
11/10/1987	-38.18	8/28/1989	57.48
1/14/1991	-31.85	1/31/1994	123.81
3/9/1995	-20.83	7/21/1998	204.61
10/5/1998	-36.78	8/23/2000	69.54
3/12/2003	-56.45	6/1/2007	172.24

3/9/2009	-54.99	4/15/2010	62.99
8/10/2011	-31.31	2/19/2020	140.71
3/12/2020	-24.97		

Table 17.2. Switzerland Bull and Bear Markets, 1921 to 2019

5. Fixed-Income Market

Switzerland has a federal government. The size of government remains small relative to other European governments, and this also means that the size of the government's debt has remained small. Switzerland has done an effective job of controlling inflation, and this has kept bond yields low. Yields barely breached 7% on three separate occasions in the 1910s,1970s and 1990s, but quick declined from there. Yields on government bonds have been negative for give years now, and Switzerland has the lowest bond yields in the world. There is no reason to believe that this will change in the near future, and negative bond yields are likely to continue for the following decade.

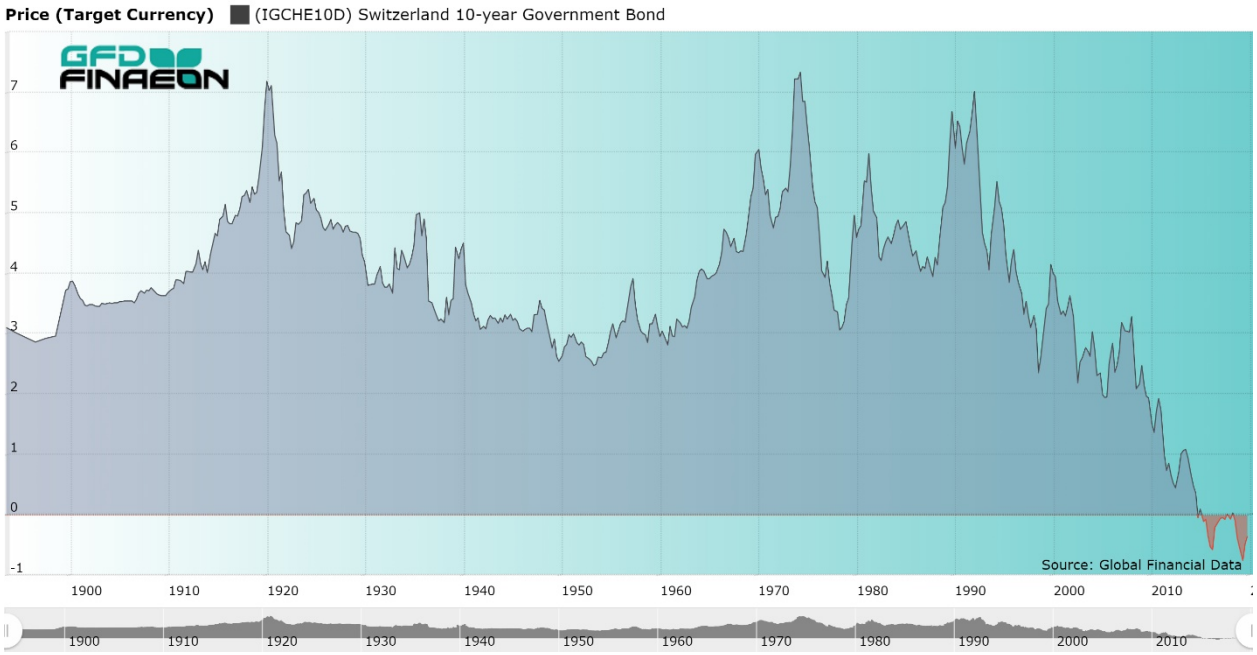


Figure 17.4. Switzerland 10-year Government Bond Yield, 1892 to 2019

Although the yield on government bonds exceeded the stock dividend yield between the 1960s and 2008, low inflation and low government bond yields kept the difference down relative to other countries during those fifty years. What is notable about Switzerland is the lack of large swings in the difference between the dividend yield and bond yield. In 2020, this difference is at its highest level in history, primarily because Switzerland has the lowest bond yield of any country in the world. Since the 2008 Financial Crisis, the dividend yield has exceeded the government bond yield, and this pattern looks likely for the rest of the decade.

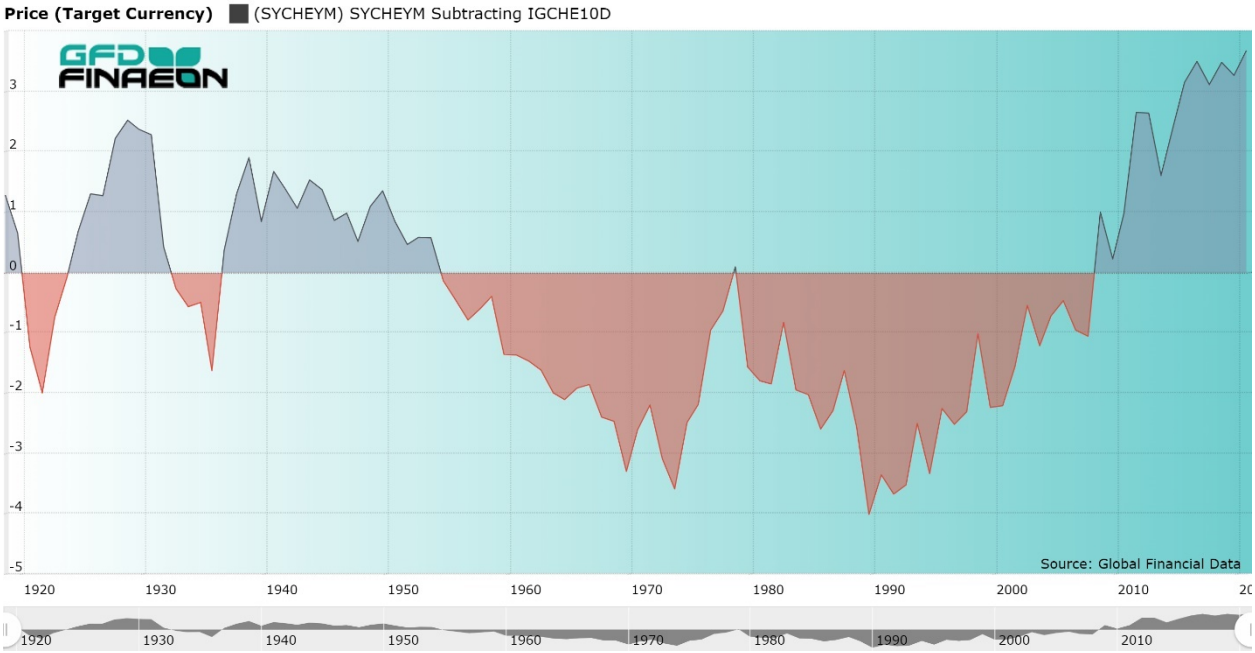


Figure 17.5. Switzerland Stock Dividend Yield Minus Government Bond Yield, 1920 to 2020

6. Stock Market Capitalization and Government Debt Share of GDP

Because of the federal nature of the Switzerland, government debt has been low compared to other countries. On the other hand, because a number of Swiss companies are international in scope, the MCAP/GDP ratio has been higher than almost any other country. The MCAP/GDP ratio was around 50% between the end of World War II and 1980. As in most countries, this ratio began a dramatic rise for the rest of the century, exceeding 250% by 1999. During the twenty-first century, this ratio has fluctuated between 150% and 250% of GDP, much higher than any other country in Europe. One of the few countries that has a higher ratio is Hong Kong because of the large number of Chinese companies that list in Hong Kong. Switzerland has an international economy, and the MCAP/GDP numbers fully reflect this fact.

The government debt/GDP ratio has never exceeded 100%, in part because the federal status of Switzerland has kept government debt to a minimum, and because Switzerland remained neutral during World War I and II. Even with the increase in government debt in the 1990s, the government debt/GDP ratio remains below 50%. There seems to be little prospect of this ratio increasing in the future. Switzerland's combination of low government debt and high MCAP/GDP seems likely to continue in the future to the benefit of shareholders, but not to the benefit of fixed-income investors who are likely to receive no return during the coming decade.

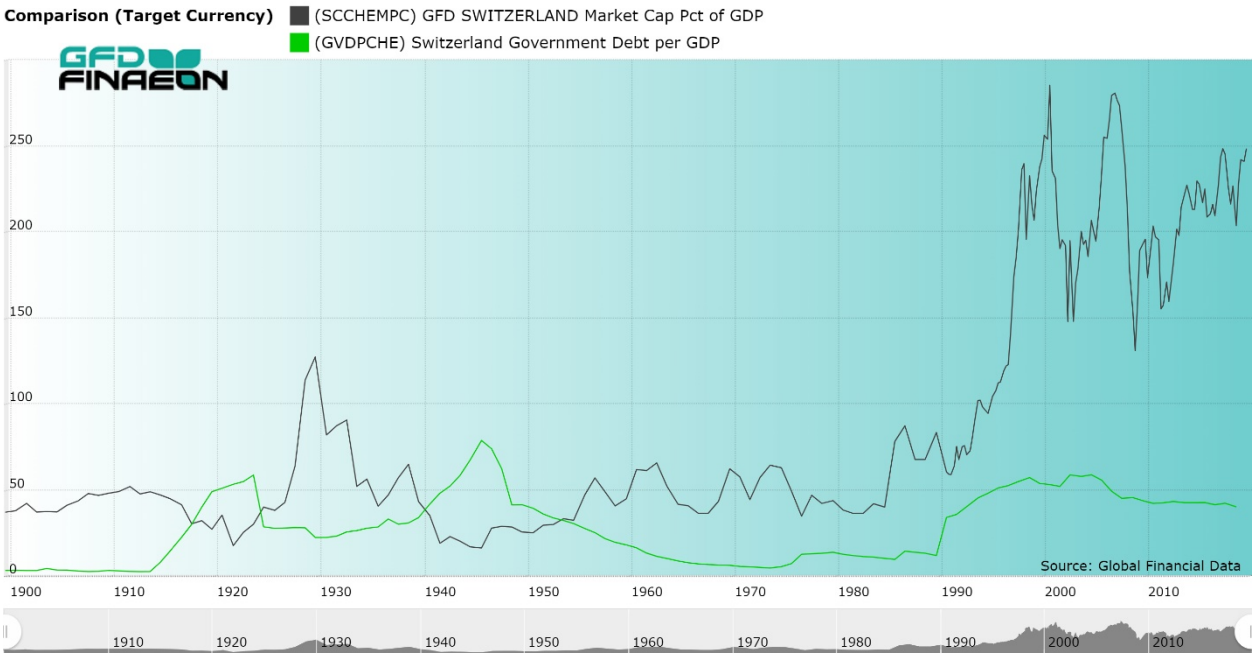


Figure 17.6. Switzerland Market Cap and Government Debt as a Share of GDP, 1900 to 2019

7. Exchange Rate

As Figure 17.6 illustrates, Switzerland has had the strongest currency in the world during the past century. Before World War I, the Swiss Franc was tied to the French Franc and there were about 5 Francs to the US Dollar. Today, the two currencies are at par with each other. Most of the appreciation in the Swiss Franc occurred after 1973 when the Franc began floating and lower inflation pushed the exchange rate from over 4:1 to about 1.5:1. Since then the exchange rate slowly declined to around 1 in 2010 and has stayed there since then. The appreciation in the Swiss Franc has aided investors since they get a higher return not only from equities and fixed-income investments but from the exchange rate appreciation as well. Most of this appreciation occurred in the 1970s when stocks provided a 5% annual return, a decade during which American investors lost money in equities. The Swiss Franc may continue to appreciate against the US Dollar in the coming decade, but any appreciation will probably be small.

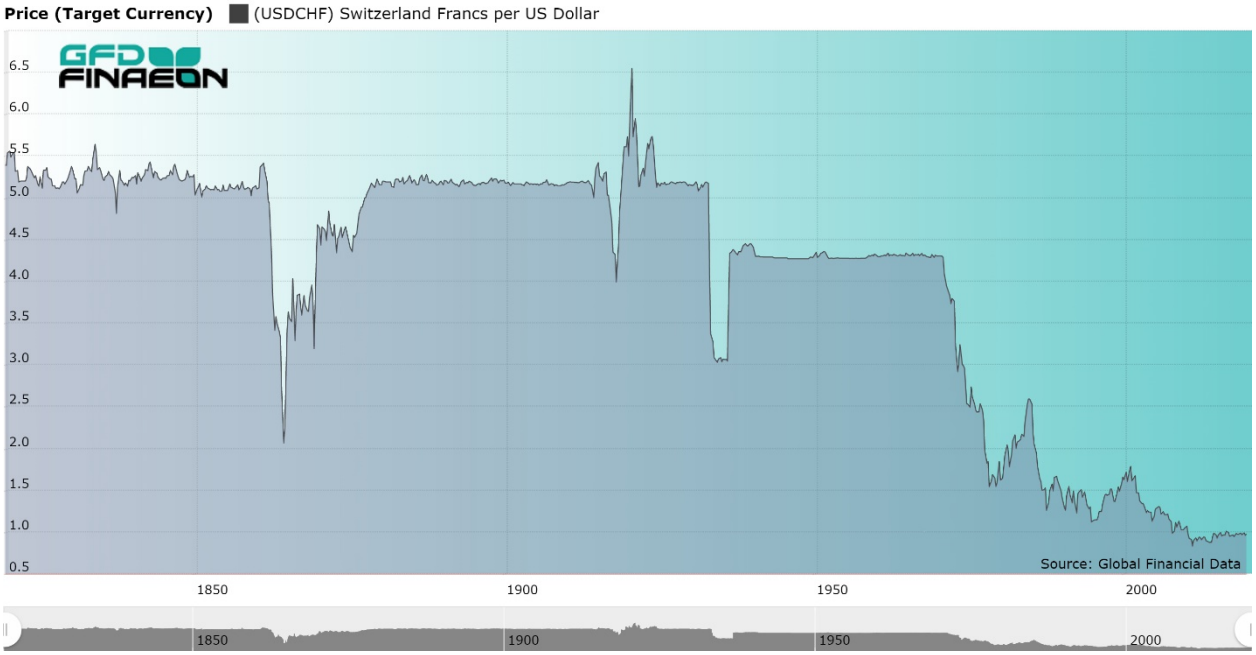


Figure 17.7. United States Dollar – Swiss Franc Exchange Rate, 1813 to 2019

8. Conclusion

Switzerland has a unique political and economic structure which has enabled it to produce high returns to investors in the country. The country's federal organization has kept government debt from increasing to levels that could impact the economy. Switzerland remained neutral during World War I and II and did not join the European Economic Community or the Euro. Switzerland also avoided the nationalizations and other government interventions that occurred in other European countries. Switzerland has created several companies with an international presence that has enabled the stock market to grow despite the country's small size. This combination of a large equity sector and small government debt has produced high returns to investors. Neither of these trends is likely to change in the near future. For the rest of the decade, shares should provide a high return while bonds and bills provide virtually no return.

United Kingdom

The United Kingdom has one of the longest histories for stock trading of any country in the world. Data for equities begins in 1692, data for short-term interest rates begins in 1694 when the Bank of England was founded, and in 1700 when for government bonds.

1. Sources

We use the GFD UK-100 Index to chart the changes in the United Kingdom since 1692. The UK-100 index (GFUK100MPD) provides a DAILY index of stocks from the London Stock Exchange that begins in 1692. The index has a base of 12/31/1983 = 1000 so the index can be linked up to the FTSE-100 index and provide over 325 years of daily data on British stocks. With over 87,000 data points, the UK/FTSE-100 index provides more stock market history than any other index on the planet. The Index is available not only as a price index, but as a return index as well.

Global Financial Data has spent the past 10 years organizing data from the *Course of the Exchange, The London Times, The Investor's Monthly Manual* and other publications to create a complete history of stocks that traded in London over the past 325 years.

2. Returns to Stocks, Bonds and Bills

Figure 18.1 provides a graph of the GFD UK-100 Index on a logarithmic scale from 1692 until 2018. Over those 327 years, the trend on the price Index has been upward with most of the increase coming after 1950, though this was primarily due to inflation.

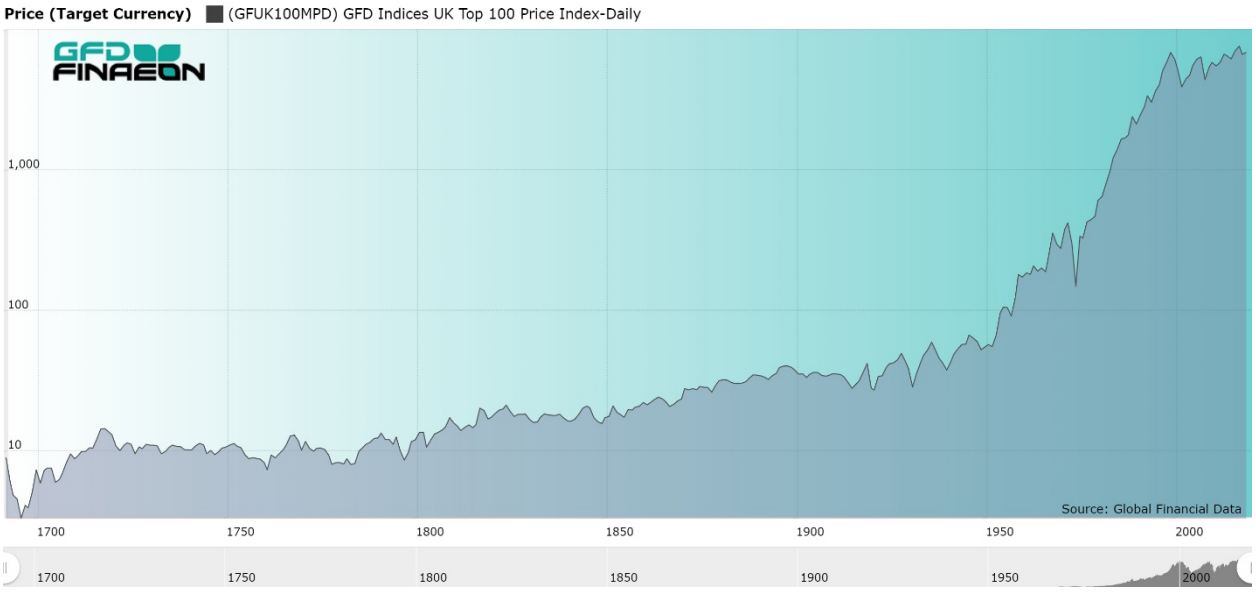


Figure 18.1. GFD UK-100 Price Index, 1692 to 2018

You can divide financial market history over the past 400 years into the six eras of Mercantilism (1602-1792), the Transportation Revolution (1792-1848) Globalization (1848-1914), World War (1914-1945), Keynesianism (1945-1981) and Globalization (1981-).

It is easy to make a case that one of the principle factors that has influenced the growth of the London stock market over the past 327 years has been the wars that Britain has fought. Wars forced the government to issue debt which crowded out capital that could have been reinvested in the economy. Britain fought a number of expensive wars in the 1700s and in the 1900s which withdrew capital from equity markets. The periods from 1815 to 1914 and since the 1970s were ones of general peace when market capitalization increased, but grew slowly during the 1700s and 1900s. Since 1975, bond yields have declined from 17% to around 1%, inflation rates have declined from 26% to 3% and the FTSE-100 has risen in value from 139 to over 7000

Real Returns to Stocks, Bonds and Bills

If you adjust for inflation, most of the return to stocks is wiped out as Table 18.1 shows.

Era	Years	Inflation	Stock Price	Stock Return	Bills	Bonds
Mercantilism	1694-1792	0.04	1	5.37	4.07	4.13
Transport Revolution	1792-1848	0.35	-0.01	4.49	4	3.96
Free Trade	1848-1914	0.04	0.79	5.39	3.14	2.64
World Wars	1914-1945	1.98	0.28	4.91	0.69	2.53
Keynesianism	1945-1981	6.81	0	4.68	-0.96	-3.27
Globalization	1981-2019	3.52	3	7.21	1.97	5.31
Pre-World War I	1692-1913	0.18	0.51	5.23	3.86	3.74
Post-World War I	1913-2018	4.1	0.94	5.42	0.66	1.45
All Years	1692-2018	1.48	0.66	5.3	2.8	2.98

Table 18.1. Annual Real Returns to Stocks, Bonds and Bills in the United Kingdom, 1692 to 2018

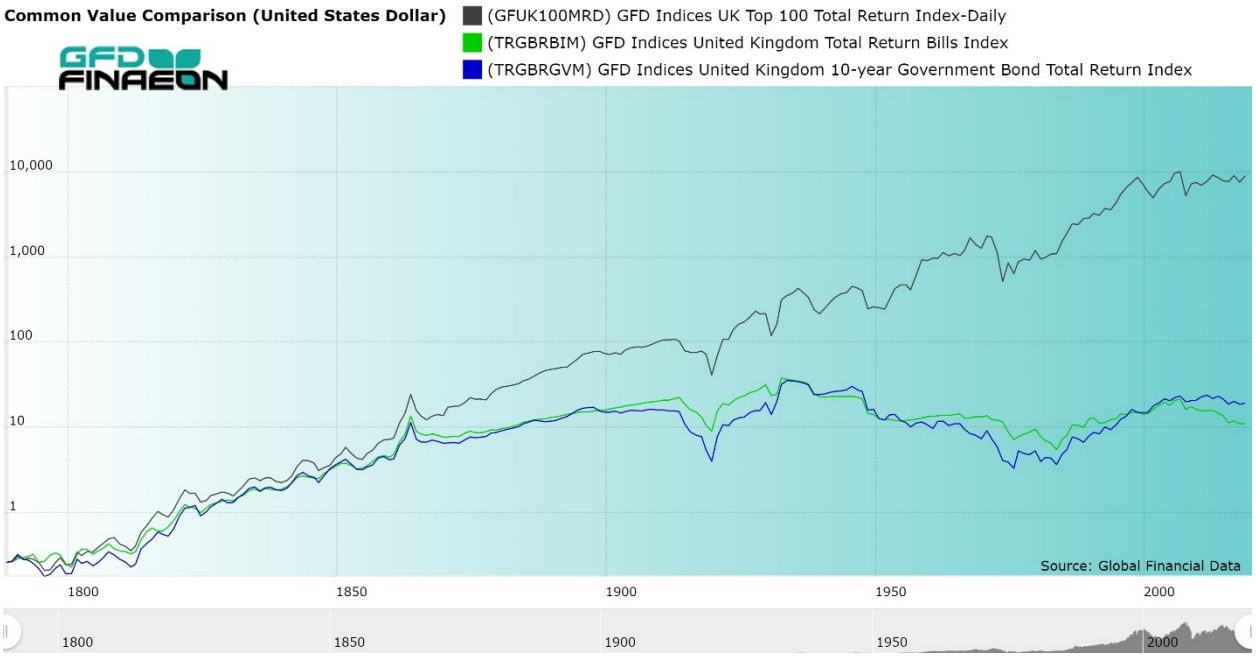


Figure 18.2. Real Returns to Stocks, Bonds and Bills in US Dollars, 1790 to 2020

After inflation, equities have returned on average 5.30% per annum over the 327 years that are covered, bonds 2.98% and cash 2.80%. Nevertheless, there is a high variance in the returns, especially to fixed income. Bonds on average lost 3.27% per annum between 1945 and 1981 but returned 5.43% after 1981. Cash was beat by inflation between 1945 and 1981, losing 0.95% annually during those 36 years. The returns to stocks, bonds and bills in US Dollars after adjusting for inflation is provided in Figure 18.2.

Years By Decade	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
1699-1709	7.28	14.03	6.6	5.42	6.96	-1.03
1709-1719	3.26	9.31	13.85	6.21	-3.99	-1.34
1719-1729	-0.63	4.13	1.81	3.18	2.28	1.12
1729-1739	1.36	5.59	5.91	6.38	-0.30	-2.17
1739-1749	-0.74	3.23	2.13	3.01	1.08	1.08
1749-1759	-2.75	0.86	0.5	3.04	0.37	1.00
1759-1769	2.36	6.77	3.17	3.42	3.50	0.64
1769-1779	-3.91	0.03	-0.04	4.21	0.07	0.53
1779-1789	3.96	9.03	6.91	4.77	1.99	0.33
1789-1799	-3.35	1.25	-0.68	1.96	1.94	2.71
1799-1809	3.96	9.11	6.12	5.12	2.82	3.32
1809-1819	-0.5	4.02	3.56	4.42	0.45	-0.81
1819-1829	2.73	6.97	10.45	7.14	-3.16	-2.24
1829-1839	-2.5	1.62	1.35	1.74	0.26	0.61
1839-1849	0.9	5.24	6.59	6.44	-1.26	-1.97
1849-1859	1.04	5.52	1.81	2.40	3.65	0.04
1859-1869	-1.63	3.31	0.53	1.92	2.77	0.54

1869-1879	2.58	7.87	4.22	3.39	3.52	-0.43
1879-1889	1.78	6.02	2.71	2.61	3.22	-0.33
1889-1899	1.34	5.2	2.83	2.30	2.29	0.00
1899-1909	-3.92	0.31	-1.15	0.61	1.47	0.77
1909-1919	-7.26	-2.37	-10.14	-5.82	8.66	7.69
1919-1929	4.15	9.19	8.99	8.11	0.18	-3.00
1929-1939	-0.37	3.86	7.06	1.22	-3.00	0.47
1939-1949	-7.25	-3.7	-7.79	-8.87	4.43	2.78
1949-1959	12.38	18	0.09	2.11	17.89	4.15
1959-1969	1.02	5.36	-2.43	1.48	7.98	3.66
1969-1979	-3.73	1	-0.04	0.98	1.04	13.10
1979-1989	8.29	13.83	5.2	3.11	8.20	6.95
1989-1999	7.97	12.47	9	4.71	3.19	3.48
1999-2009	-4.86	-1.64	3.37	1.74	-4.84	2.68
2009-2019	-0.39	3.48	0.71	-3.20	2.75	2.96
By Era						
1792-1848	0.61	5.14	4.61	4.65	0.51	0.35
1848-1914	-0.26	4.3	1.57	2.07	2.68	0.04
1914-1945	-0.26	4.33	1.97	0.14	2.32	1.98
1945-1981	-0.06	4.62	-3.33	-1.01	8.23	6.81
1981-2019	2.85	7.05	5.17	1.83	1.80	3.52
To Present						
1699-1799	0.47	5.06	3.62	3.70	1.35	0.13
1799-1899	0.95	5.47	3.98	3.73	1.43	-0.14
1899-1999	0.92	5.57	0.68	0.66	4.87	3.92
1699-2019	0.61	5.17	2.8	2.61	2.31	1.43
1799-2019	0.6	5.09	2.29	1.91	2.74	1.96
1899-2019	0.31	4.77	0.9	0.42	3.84	3.74
1919-2019	5.98	2.29	1.05	1.72	1.23	3.65
1949-2019	2.77	7.29	2.21	1.54	4.97	5.23
1999-2019	-2.65	0.89	2.03	-0.76	-1.13	2.82
1969-2019	5.65	3.6	1.43	-0.05	2.14	5.76

Table 18.2. United Kingdom Real Returns to Stocks, Bonds and Bills and the ERP by Decade

3. Equity Risk Premium

Data on the Equity Risk Premium in the United Kingdom is provided in the last column in Table 18.2. The overall ERP over the past 300 years is 2.29%. The decade with the highest ERP was the 1950s when the British economy recovered from World War II and rising interest rates provided negative returns to fixed income investors. There have been six decades in which the ERP was negative with the 2000s being the largest.

As Figure 18.3 shows, the 10-year ERP periodically becomes negative with bonds outperforming stocks, usually due to the poor performance of stocks. The 2000s were the last decade when bonds outperformed stocks. Before that, the 1930s and 1940s were decades when bonds outperformed stocks. Given the fact that there are often 50-year lapses between these periods when bonds outperform stocks, you wouldn't expect this pattern to repeat itself for another 50 years. With bonds paying low yields currently, you would infer that bonds will continue to pay low returns for decades to come and by default, stocks should outperform bonds during the next few decades.

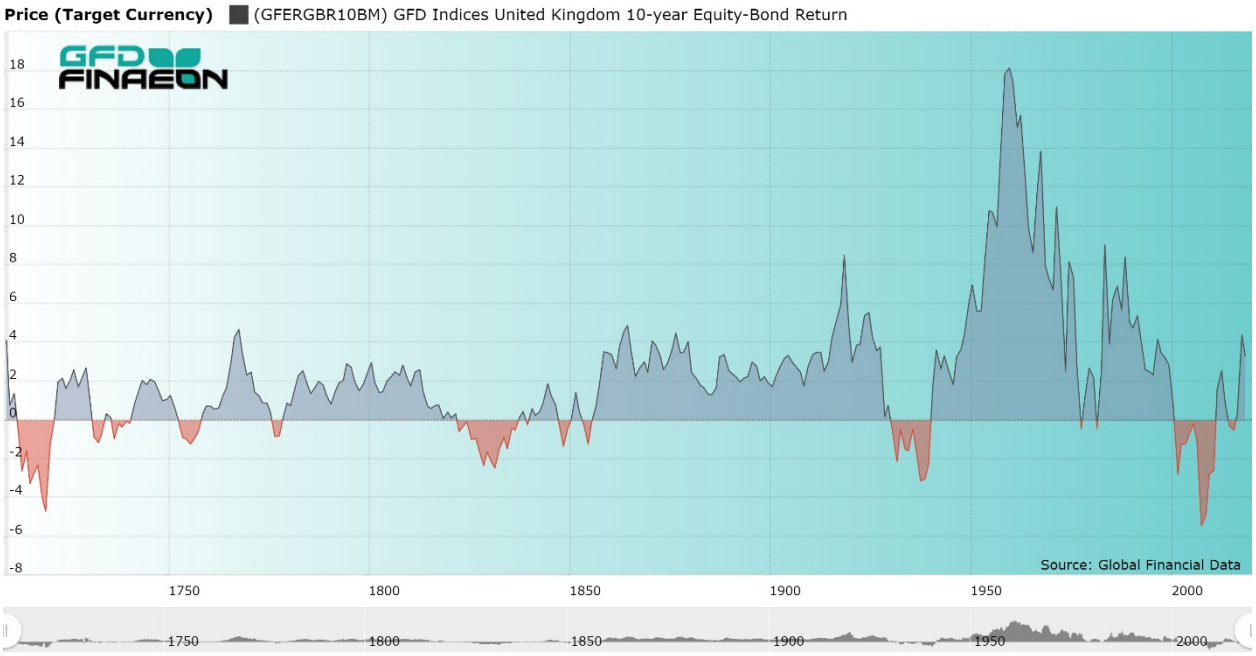


Figure 18.3. United Kingdom, 10-year Equity-Bond Premium 1700 to 2019

4. **Bull and Bear Equity Markets in the United Kingdom**

Because GFD has put together a daily index of stocks that traded on the London stock exchange between 1692 and 2018, we can measure exactly both the date of the market tops and market bottoms as well as the size of the bull and bear markets that existed in London during the past 327 years. By our count, there have been 25 bull and bear markets in London since 1692. We measure a bear market as a 20% decline in the stock market and a bull market as a 50% increase in the market. Every bull and bear market met these criteria except for the 1831-1845 railroad mania and the 1998-2000 bull market which failed to reach the 50% mark that we require.

The worst bear market in London's history was the decline from the 1720 bubble in South Sea Stock which produced a fall of 86% between 1720 and 1762. Although most of the decline occurred between 1720 and 1721, the market failed to bounce back for the next 40 years and continued to drift lower.

By comparison, the 1929-1931 bear market was relatively mild. Although the Dow Jones Industrial Average declined over 89% between 1929 and 1933, stocks in London declined only 45%. The 1937 bear market was worse than the 1929 bear market. Six other bear markets that began in 1692, 1700, 1720, 1937, 1972 and 2000 were more severe than the 1929-1931 bear market in Britain. The best

time to have invested in stocks over the past 327 years was at the end of 1974 when the index rose 127.68% during the next year.

Not surprisingly, the strongest bull market in British history culminated in the South Sea Bubble of 1720. Between 1705 and 1720, the British market rose 364%, then remained in a downward trajectory for the next 42 years. Overall, between 1981 and 2000, the British market rose in price by 1125%, an increase which may never be matched. A record of the bull and bear markets in London since 1692 is provided in Table 18.2.

Bear Markets		**Bull Markets**		
Date	**Decline**	**Date**	**Increase**	**Cause**
		01/02/1692		
10/09/1696	-58.90	4/15/1700	277.71	Nine Years War
3/7/1701	-46.13	05/28/1709	159.21	Death of Charles II
4/1/1712	-36.25	6/29/1720	706.00	War of the Spanish Succession
2/4/1762	-86.32	6/17/1768	94.33	South Sea Bubble
04/30/1778	-41.21	3/7/1792	94.27	American Revolutionary War
4/24/1798	-42.36	4/7/1802	73.26	French Revolution
8/1/1803	-32.11	11/7/1809	77.56	Napoleonic Victories
10/23/1812	-22.64	4/22/1824	54.95	Napoleonic Victories
4/16/1850	-38.91	5/24/1899	152.22	1825 Bubble, 1845 Railway Mania
10/30/1915	-37.94	1/28/1920	68.32	World War I
10/24/1921	-41.74	1/11/1929	106.44	Post WWI Recession
9/18/1931	-47.00	1/5/1937	116.64	Great Depression
6/26/1940	-52.17	5/15/1947	149.60	1937 Recession
6/20/1952	-26.89	7/21/1955	129.32	Post WWII Recession
2/25/1958	-26.92	5/15/1961	158.50	Suez Crisis
6/25/1962	-25.86	1/31/1969	132.35	Recession
5/27/1970	-36.35	5/19/1972	87.33	Devaluation
12/12/1974	-68.40	1/30/1976	168.16	OPEC, Three Day Week
10/27/1976	-30.30	5/4/1979	119.74	Recession
11/8/1979	-24.74	7/16/1987	427.00	Winter of Discontent
11/9/1987	-35.94	7/20/1998	294.77	1987 Crash
10/5/1998	-24.77	9/4/2000	46.24	Economic Slowdown
1/27/2003	-48.80	6/15/2007	93.42	Internet Bubble, 9/11
11/21/2008	-43.84	5/22/2018	128.74	Financial Recession

Table 18.2. Bull and Bear Markets on the London Stock Exchange 1692 to 2018

5. **Fixed Income Markets in the United Kingdom**

Figure 18.4. provides over 300 years of data on yields for the British Consol and 10-year government bond. The yield on Million Bank stock, which invested in government securities, is used from 1700 to 1729, the 3% annuity from 1729 to 1753, British Consols from 1753 until 1933, and 10-year bonds since 1933. Bond yields fluctuated during the 1700s, mainly in response to the wars that Britain fought. Bond yields declined continuously during the 1800s, reaching their nadir in 1897. After the

Napoleonic Wars ended in 1815, Britain was involved in no major wars until 1914. The British Consol was a safe, international bond that investors from all over the world invested in, and it had the lowest interest rate of any security in the world. During the 1900s, inflation drove the yield on British securities. Yields rose during the inflation that followed World War I and World War II with yields peaking in 1974. Bond yields have been in steady decline since then.

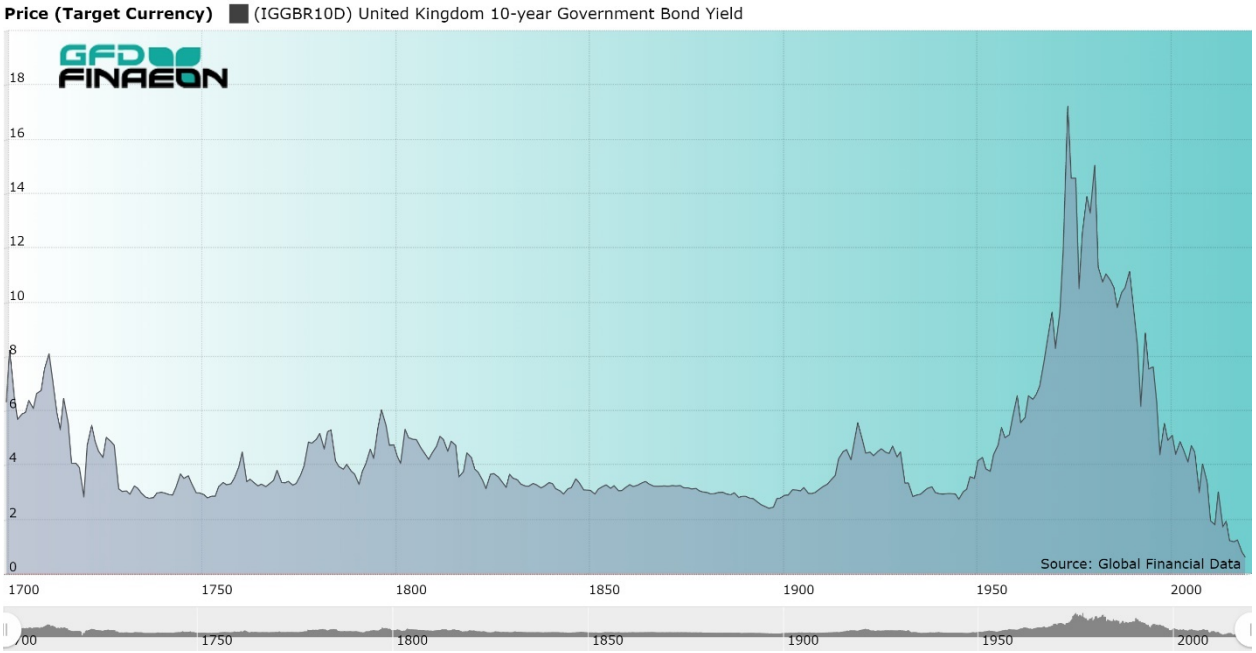


Figure 18.4 Yield on 10-year Government Bond and British Consol, 1700 to 2019

10. Stock Market Capitalization and Government Debt as a Share of GDP.

The contrast between the size of British government debt and the capitalization of the stock market illustrates these changes. In 1689, Britain's central government debt was £1.3 million and the market cap of its stock market was £2.27 million. Government debt peaked at £844 million in 1819 when stock market capitalization was only £80 million. By 1911, central government debt had shrunk to £733 million while the market cap of British shares had risen to £3.5 billion. A graph of Britain's debt as a share of GDP is provided in Figure 18.5.

When World War I closed down the London stock exchange in 1914. Sixty years of government regulation began which limited the growth of the equity market. According to Michie, British government debt grew from 11.5% of London capitalization in 1913 to 34.6% in 1920 and 57% in 1950 while foreign debt fell from 32.9% in 1913 to 18.6% in 1920 and 3.4% in 1950. Foreign equities and debt were sold and repatriated to help pay the war debts which Britain incurred during World War I and World War II. Equities' share of London capitalization fell from 55.6% in 1913 to 46.8% in 1920 and 39.6% in 1950. A comparison of the growth in central government debt and the stock market capitalization of British shares is provided in Figure 18.5.

The United Kingdom provides us with a longest history of stock dividend yields and government bond yields of any country in the world. As Figure 18.5 shows, with the exception of the period between 1960 and 2020, the dividend yield has consistently exceeded the yield on government bonds. There

were some periods in the early 1700s, late 1700 and early 1800s when Britain was at war with the United States or France and higher bond yields pushed the yield on government bonds above the yield on stocks, but during most of the 140 years between the end of the Napoleonic Wars in 1815 and the beginning of rising inflation in the late 1950s, the yield on stocks exceeded the yield on bonds. Rapidly rising inflation and bond yields between the 1950s and 1970s pushed the spread to over 8%, although this difference declined until the 2000s as bond yields fell. More than anything else, this graph shows that bond yields drive the difference between the dividend yield and bond yields. Government bond yields are likely to remain below 1%-2% during the coming decade and it seems unlikely that the dividend yield won't remain higher than the bond yield.

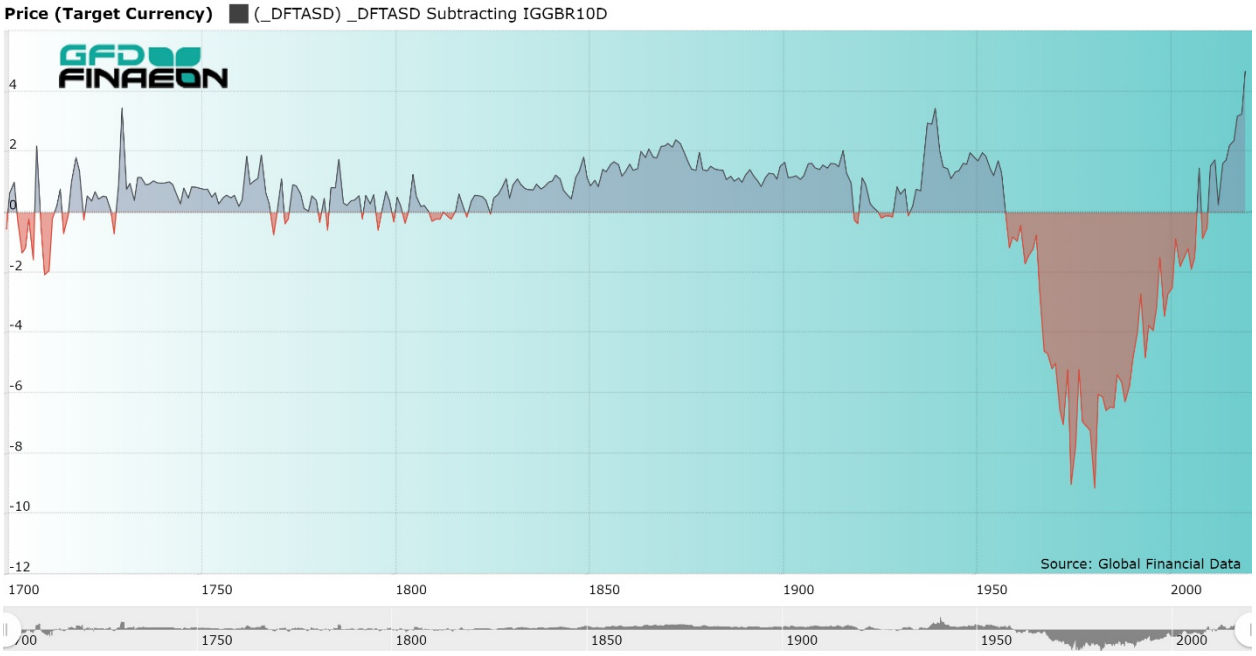


Figure 18.5. United Kingdom Stock Dividend Yield Minus Government Bond Yield, 1700 to 2020

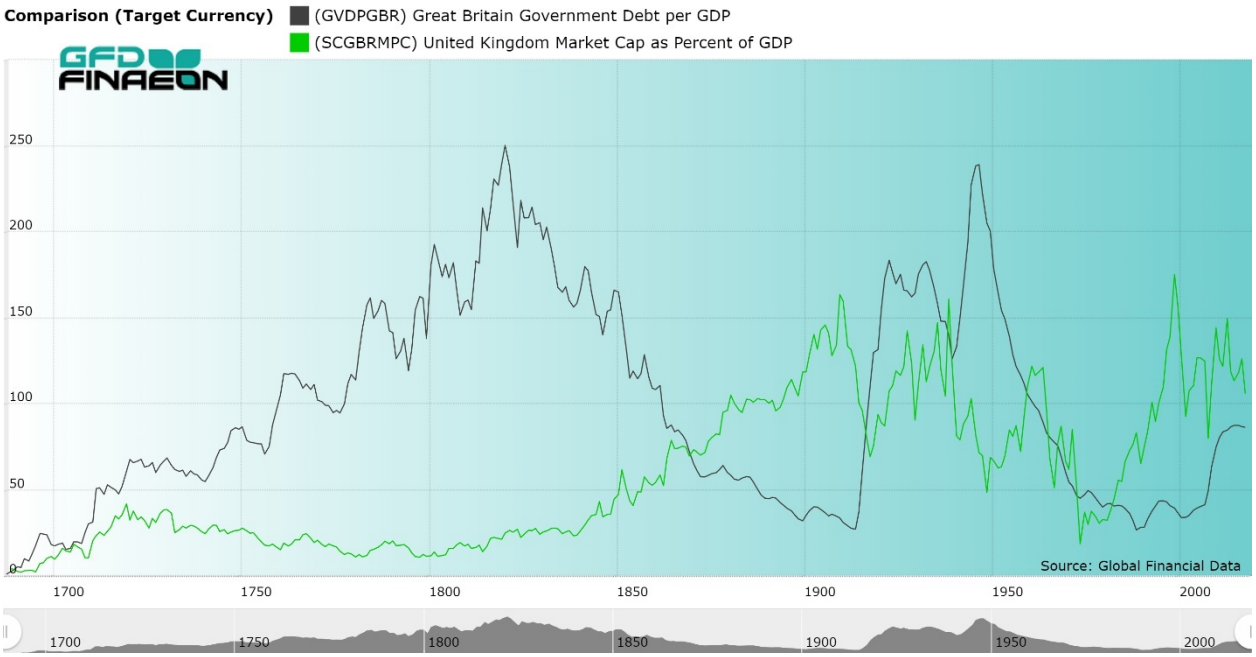


Figure 18.6. Central British Government Debt and Stock Market Capitalization to GDP 1689-2019

At the end of World War II, Britain's major industries were nationalized and by the 1950s, some members of Labour were questioning whether Britain even needed a stock exchange, but the gradual decline of the British economy in the 1970s made the importance of the private sector obvious. In 1975, Britain's inflation rate hit 26%, 10-year bond yields rose to 17%, the stock market hit bottom after a 77% decline in real terms between 1972 and 1975, and Margaret Thatcher was elected the leader of the Conservative Party. She became Prime Minister in 1979 and played an important role in getting Britain back on track as the financial center of the European economy.

London's Stock Market Capitalization

The changes in the London stock market are illustrated in Figure 18.6 which shows the capitalization of British stocks as a share of GDP. There was strong initial growth until 1720 when the Bubble Act was passed making it more difficult to incorporate companies in Britain. The growth in the capitalization of the stock market relative to GDP declined for the next 85 years. Beginning in the 1790s, the growth of canals and railroads as well as other industries led to a steady growth in the capitalization of the British market from 1790 to 1914. Market cap as a share of GDP grew from around 10% in 1805 to 150% by 1914. However, with the onset of World War I, the growth in London equity markets ground to a halt and there was a general decrease in the capitalization of the British stock market during the next 60 years. Stock market capitalization fell from around 150% of GDP in 1914 to 30% by 1974. After 1974, capitalization skyrocketed for the rest of the twentieth century, reaching 180% by 1999 as London regained its role as the financial center of Europe. The stock market, however, has failed to surpass the 1999 peak during the twenty-first century.

Exchange Rates

The exchange rate between the British Pound and the United States Dollar provides one of the most complete exchange rate histories available for any two currencies in the world. Britain was on the

gold standard from 1717 until 1931. The exchange rate was set at $4.84 = £1.00 until 1914. When Britain tried to return to this exchange rate in the 1920s, it nearly ruined the economy. The currency devalued to $2.80 in 1949 and $2.40 in 1967. Since then the British Pound has gradually depreciated as British inflation has exceeded inflation in the United States. The exchange rate is now approaching parity with $1.00 = £1.00. The Pound is likely to remain at a premium to the U.S. Dollar in the near future, though this premium will be small.

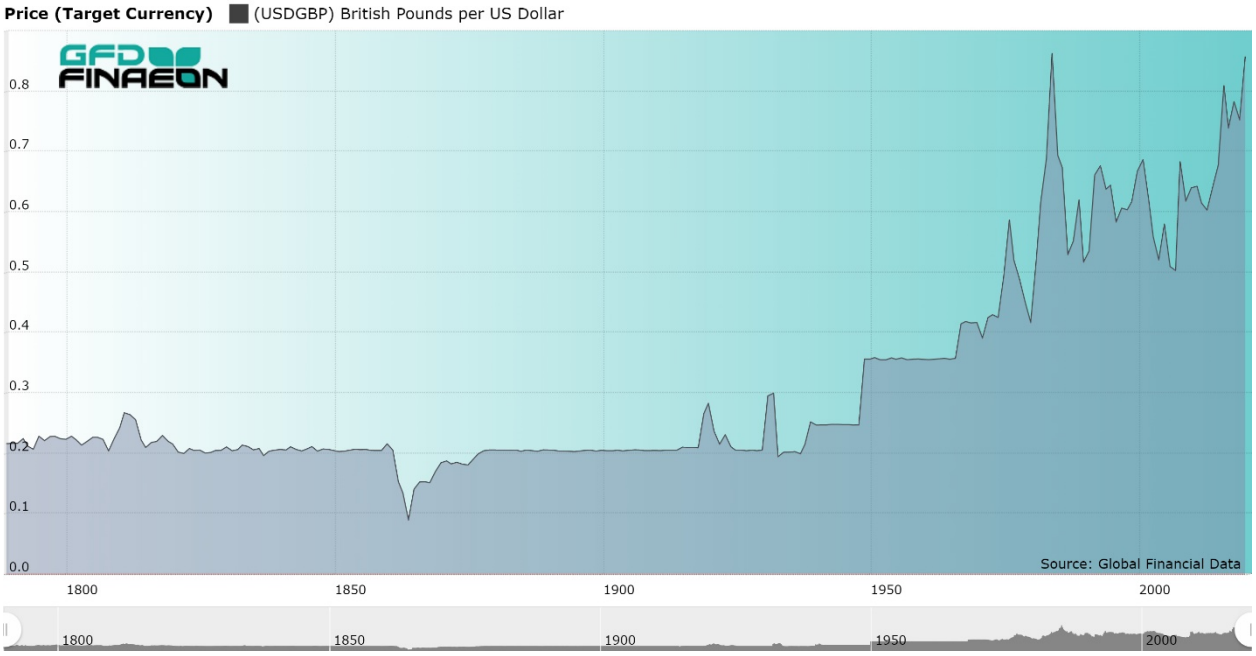


Figure 18.7. British Pounds per US Dollar, 1790 to 2020

Conclusion

Now that Brexit is complete and the United Kingdom has left the European Union, the country can chart its own future outside of Europe. Uncertainty over the future has constrained the stock market during the past few years. In March 2020, the FTSE-100 Index was below the level it was at on December 31, 1999 when the century began. Until the United Kingdom can determine its path for the future, its stock market is likely to remain in the trading range it has been in during the past twenty years for the next 10 years. Similarly, 10-year government bond yields have declined from around 5% at the beginning of the century to under 1% today. Neither bonds nor bills are likely to provide a return over 1-2% per annum for the rest of the decade. Unless the United Kingdom can find a new economic purpose during the 2020s, investors are likely to suffer.

United States

1. Sources

We use the GFD-100 Index to calculate returns to stock markets in the United States between 1792 and 2020. The GFD-100 is the most extensive index for United States stocks available anywhere. The GFD-100 index is revised in January of each year. It uses the largest stocks in the United States from 1792 until 1825, the 50 largest stocks from 1825 until 1850 and the 100 largest stocks from 1850 to date. The index is capitalization-weighted and only includes liquid stocks that trade on a regular basis. Stocks from all regional exchanges and the over-the-counter market are used. This gives the index broader coverage than other indices which ignore the financial sector up to 1976.

We use the GFD Indices for Bonds and Bills to calculate fixed-income returns. The GFD Index for Bonds is based upon the returns to the Federal Government's 10-year bond. Before World War I, individual bonds with a maturity of 10-years or more are used to calculate the total return. 3-month Treasury Bills are used for the Bill index. Before 1920, there is no data on the yield for Treasury bills since they did not exist. Therefore, we use the minimum of the Federal government bond that is closest to maturity or the yield on commercial paper in New York City. Since commercial paper was not risk free, using commercial paper to calculate the return to cash yields a higher return than bonds receive, which is in contradiction to the risk-free concept of lower returns resulting from lower risk.

2. Real Stock Returns to Stocks, Bonds and Bills

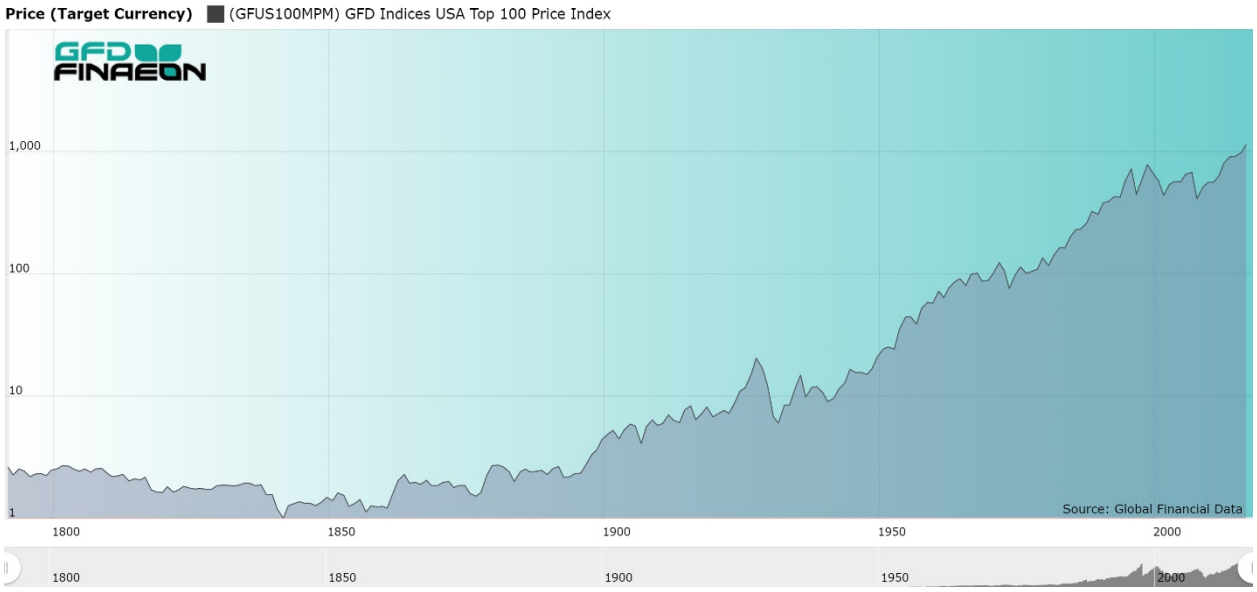


Figure 19.1. GFD US-100 Price Index, 1792 to 2019

Figure 19.1 provides information on nominal returns to stocks in the United States between 1792 and 2019. There was little change in stock prices in the 1800s. During the 1800s, most of the return to equities came through dividends, which were consistently 5% or more until World War II.

Table 19.1 looks at returns after adjusting for inflation. It also provides a measure of the Equity Risk Premium (ERP) and the inflation rate. The return to bonds differed significantly between the 1800s and the 1900s. In the 1800s, bonds provided a positive return every decade, but in the 1900s, bonds provided a negative return after inflation in six of the ten decades. The reason for this is the combination of inflation and Fed intervention. The Fed has not been the best friend of fixed-income investors.

Bondholders received negative real returns for four decades in a row, the 1940s, 1950s, 1960s, and 1970s as rising bond yields reduced bond prices. Because of this, fixed-income investors were little better off after inflation in 1980 than they had been in 1900. Since 1980, however, bondholders have received a positive return, though cash has seen a net loss after inflation. With yields on both bonds and bills currently under 2%, there seems little reason to believe that either bonds or bills will beat inflation in the decade to come. On the other hand, declining bond yields in the 1980s to 2010s generated positive returns to bondholders. Now that the yield on bonds is under 2%, fixed-income investors will no longer be able to benefit from falling interest rates to generate continued positive returns. Instead, fixed-income investors should expect low returns over the coming decade.

Interestingly enough, bonds have outperformed stocks so far during the twenty-first century. This is because bondholders have benefitted from the capital gains produced by falling interest rates. With bond yields under 2%, this is unlikely to continue. Although the bond yield can provide an accurate measure of the return to fixed-income investors over the next decade, no similar measure exists for shareholders. The return to equities will depend upon the business cycle. Since the equity risk premium has been around 3% historically, you would expect no more than a 5% return to equities over the next ten years. Since equities have provided double-digit returns after inflation in three of the last four decades, it will take time for investors to adjust to the prospect of lower returns.

Years By Decade	**Stock Price**	**Stock Return**	**Bond Return**	**Bill Return**	**ERP**	**Inflation**
1791-1799	-6.15	-0.65	-1.62	2.03	0.98	3.04
1799-1809	1.5	8.93	9.76	5.75	-0.68	0
1809-1819	-5.15	1.17	6.54	5.26	-4.54	0.34
1819-1829	2.78	8.79	8.66	6.53	0.11	-1.94
1829-1839	-3.3	3.17	0.11	2.45	2.75	2.04
1839-1849	1.45	9.35	12.02	8.86	-2.14	-2.7
1849-1859	-2.68	5.21	4.06	3.86	1.01	1.55
1859-1869	-0.11	8.21	2.96	0.91	4.59	4.19
1869-1879	4.87	12.76	9.57	7.24	2.62	-2.24
1879-1889	0.99	6.62	6.13	3.38	0.42	0
1889-1899	4.23	10.24	3.68	2.44	5.68	0.13
1899-1909	3.7	9.02	-0.82	0.71	8.88	2.39
1909-1919	-5.03	0.51	-5.23	-4.76	5.44	7.34
1919-1929	9.65	15.56	7.41	5.42	6.81	-0.94

1929-1939	-1.58	3.96	7	2.97	-2.55	-2.04
1939-1949	-2	3.68	-2.91	-5.13	6.1	5.36
1949-1959	12.06	17.98	-1.99	-0.22	18.16	2.22
1959-1969	1.71	5.3	-0.17	1.67	4.91	2.52
1969-1979	-4.83	-0.61	-1.32	-0.91	0.65	7.36
1979-1989	8.47	12.72	8.15	4.27	3.79	5.1
1989-1999	17.57	18.44	5.47	2.19	11.01	2.93
1999-2009	-7.3	-5.26	4.21	0.23	-8.21	2.52
2009-2019	10	12.77	2.57	-1.29	8.91	1.75
By Era						
1792-1848	0.41	5.53	5.42	4.89	0.10	-0.07
1848-1914	0.83	5.33	4.23	2.6	1.06	1.11
1914-1945	-0.24	4.7	0.38	7.66	4.30	1.92
1945-1981	1.16	5.35	-1.96	-0.37	7.46	4.67
1981-2019	5.1	7.55	5.28	1.13	2.15	2.68
To Present						
1791-1899	-0.19	6.07	5.07	4.03	0.95	0.36
1899-1999	3.34	7.57	1.3	0.51	6.18	3.18
1791-2019	1.58	7.09	3.54	2.27	3.43	1.74
1899-2019	2.93	6.8	1.59	0.34	5.12	3.01
1949-2019	4.52	7.55	2.12	0.75	5.32	3.47
1999-2019	0.88	3.02	3.04	-0.48	-0.03	2.14
1919-2019	3.66	7.33	2.48	0.79	4.72	2.64
1969-2019	3.91	6.48	3.38	0.79	3	3.91

Table 19.2. United States Real Returns to Stocks, Bonds and Bills, ERP and Inflation by Decade

The stock market has been moving in 30-year Cycles since the 1890s. Now that the 2010s have finished, we can examine the data and see if this pattern has continued. And it has! Table 19.1 provides the real returns to stocks, bonds and bills in each decade since the 1890s. As you can see, the stock market has provided double-digit returns every 30 years, in the 1890s, 1920s, 1950s, 1980s and 2010s. Each of those decades was preceded by a decade in which there were inferior returns, the 1880s, 1910s, 1940s, 1970s and 2000s. In fact, both the 1970s and 2000s provided investors with negative real returns over the course of the decade.

Bond returns have shown a declining pattern over the past four decades and this is likely to continue in the 2020s. The 10-year bond is yielding less than 2% today and the return to bonds is likely to be less than 2% in the coming decade. It seems unlikely that returns would turn negative because interest rates would need to rise during the 2020s to give a negative return.

3. The Equity-Risk Premium

Figure 19.4 shows the 10-year rolling Equity Risk Premium from 1792 until the present. There were significant periods in the 1800s where the ERP was negative and bonds outperformed stocks; however, this occurred less often during the 1900s. The periods when the ERP was negative reflected more on the poor performance of stocks during those years than the strong performance of bonds. For

the most part, the ERP was consistently positive during the 1900s. The only exceptions were the 1930s and 1970s. The 1950s provided the highest ERPs in history. Because of the bear markets of 2000 and 2008 and the strong performance of bonds, the ERP reached its lowest levels in history during the 2000s and 2010s. The ERP has bounced back and with little chance of fixed-income investors receiving high returns, the ERP should remain positive for the rest of the decade. The ERP will be negative only if stocks produce negative returns in the decade to come.

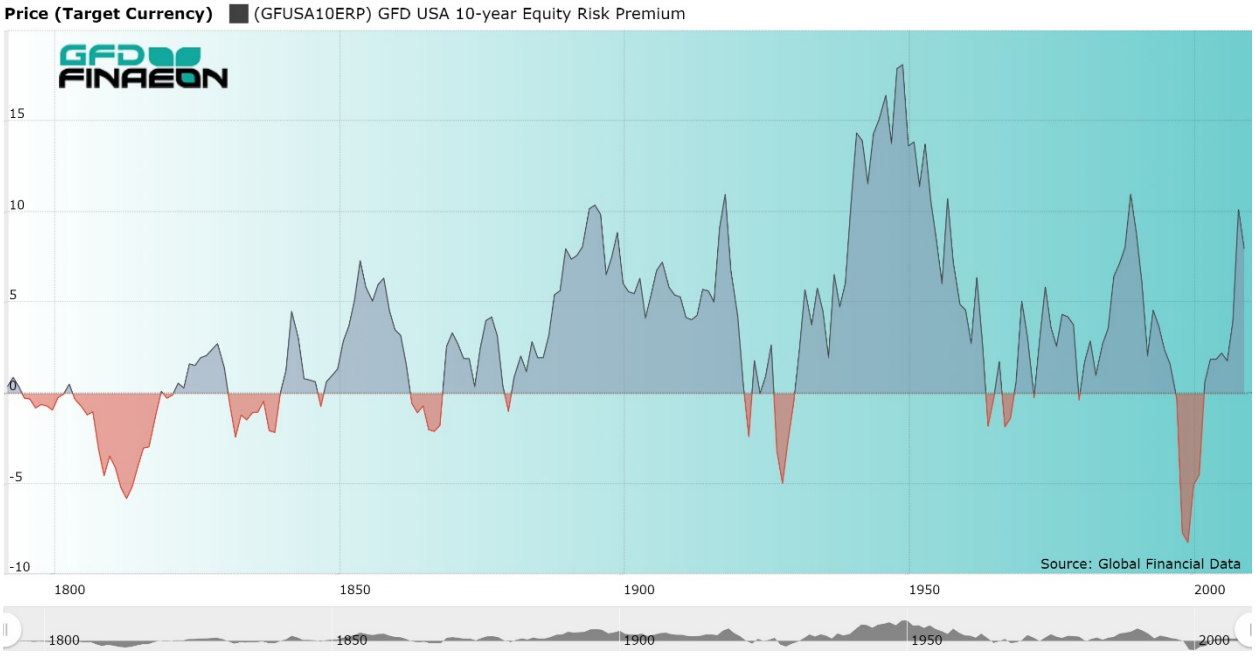


Figure 19.2. United States 10-year Equity Risk Premium

4. Bull and Bear Equity Markets

Using the GFD-100 Index, by our calculation, there have been 24 bull-bear market cycles in the United States since 1792. The longest bear market was the first which lasted from 1792 until 1843, a 50-year bear market. The worst bear market was the 1929-1932 bear in which the market declined by 86%. There have been three bull markets in which prices rose by over 400% in 1921-1929, 1974-1987 and 1990-2000.

Date	Value	Change	Date	Value	Change	Cause
			01/02/1792	4.516		
01/31/1843	1.497	-66.85	08/31/1853	2.584	72.61	Panic of 1837
10/31/1857	1.712	-33.75	07/30/1864	4.092	139.02	Panic of 1857
10/31/1873	2.682	-34.46	05/31/1881	5.189	93.48	End of Civil War, Panic of 1873
01/31/1885	3.394	-34.59	6/17/1901	8.53	123.88	Long Depression
11/9/1903	5.85	-31.42	10/9/1906	10.23	74.87	Rich Man's Panic
11/15/1907	6.10	-40.37	11/19/1909	10.6	73.77	San Francisco
10/31/1914	6.63	-37.45	11/20/1916	10.55	59.13	World War I
12/19/1917	6.00	-43.13	7/16/1919	9.64	60.67	Fear of Entering War

8/24/1921	6.26	-35.06	9/7/1929	31.86	408.95	Post-WW I Recession
7/8/1932	4.41	-86.16	9/7/1932	9.31	111.11	Great Depression
2/27/1933	5.53	-40.60	7/18/1933	12.2	120.61	Bank Holidays
3/14/1935	8.06	-33.93	3/10/1937	18.68	131.76	Depression Fears
3/31/1938	8.5	-54.50	11/9/1938	13.79	62.24	Recession of 1937
4/28/1942	7.47	-45.83	5/29/1946	19.25	157.70	World War II approaches
6/13/1949	13.55	-29.61	8/2/1956	49.75	267.16	Post-WWII Recession
10/22/1957	38.98	-21.65	12/12/1961	72.64	86.35	Sputnik
6/26/1962	52.32	-27.97	2/9/1966	94.06	79.78	Steel Strike, Kennedy Panic
10/7/1966	73.2	-22.18	1/5/1973	119.87	63.76	Viet Nam
10/3/1974	62.28	-48.04	8/25/1987	337.89	442.53	OPEC Embargo
12/4/1987	221.24	-34.52	7/16/1990	369.78	67.14	1987 Crash
10/17/1990	294.51	-20.36	3/24/2000	1527.46	418.64	Iraq War
10/9/2002	776.77	-49.15	10/9/2007	1565.15	101.49	Internet Bubble, 9/11
3/9/2009	676.53	-56.78	2/19/2020	3386.15	400.52	Financial Recession
3/16/2020	2397.38	-29.20				Coronavirus

Table 19.2. Bull and Bear Stock Markets in the United States, 1792 to 2019

5. Government Bond Yields

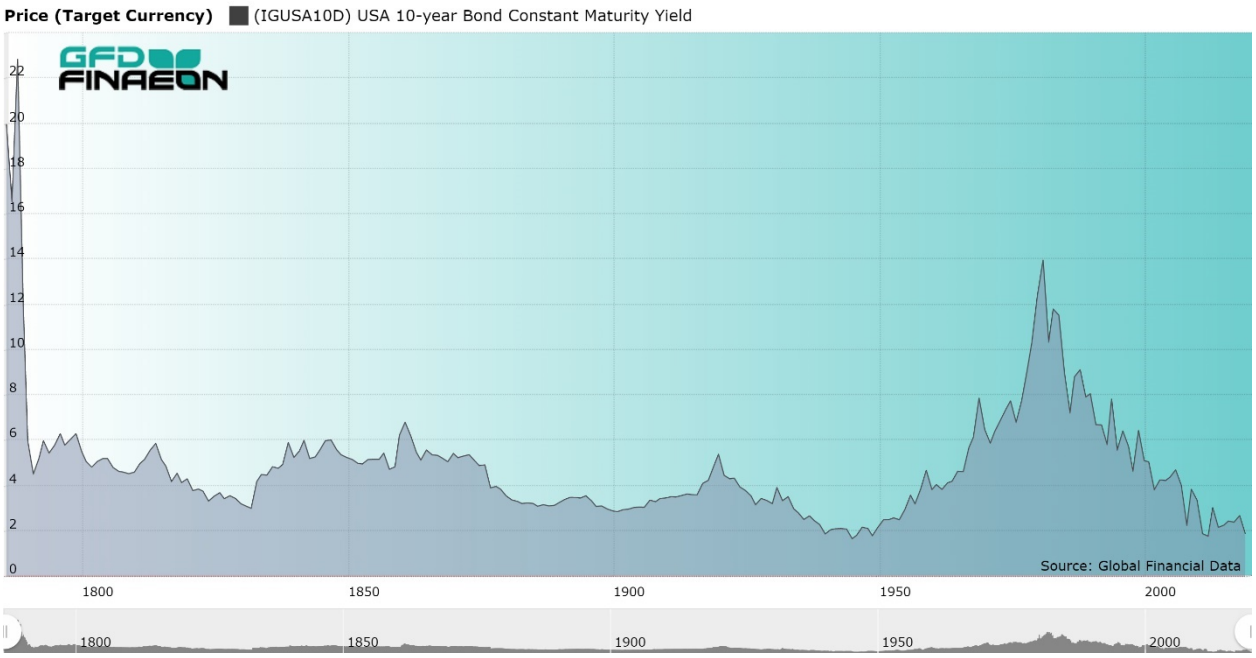


Figure 19.3. United States 10-year Bond Yield, 1786 to 2020

Figure 19.3 shows the yield on the 10-year Government bond from 1786 to 2020. During the 1780s, the United States was in default on its bonds. Alexander Hamilton reorganized the debt in 1791 and bond yields showed a declining pattern until World War II. After the war was over with, rising inflation drove bond yields up between 1941 and 1981 when yields reached 15.84%. Since 1981, yields have steadily declined, hitting a low of 0.318% on March 9, 2020. Although yields are unlikely to go much below that level, they will likely remain in the 0.5-2% range for the rest of the decade. In real terms, government bond yields are likely to remain negative.

The stock dividend yield and the yield on government bonds are compared in Figure 19.4 which provides over 200 years of history. With one small exception in the early 1800s, the dividend yield exceeded the government bond yield from the 1790s until the 1950s. After 1957, rising bond yields pushed the spread upward until interest rates peaked in 1981. The spread declined from 1981 to the present as bond yields declined. The dividend yield now exceeds the government bond yield by the greatest amount since the 1950s. The yield on government bonds is likely to remain below 1%-2% over the next decade, and if this remains true, the dividend yield will continue to exceed the government bond yield.

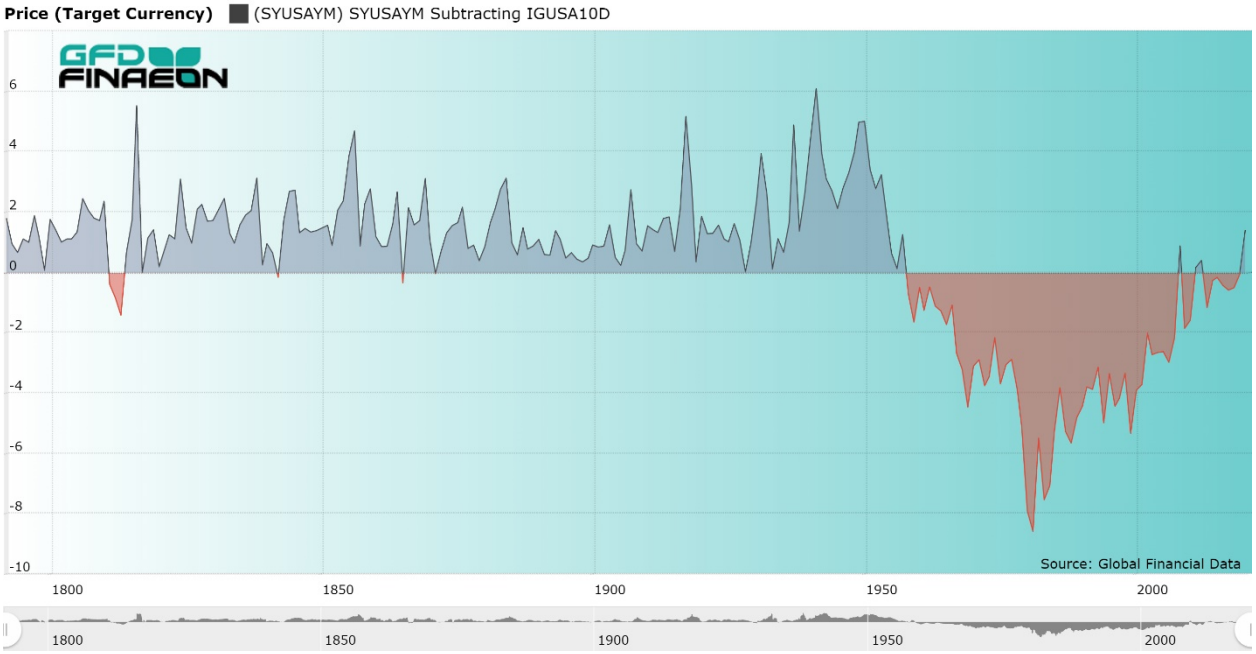


Figure 19.4. United States Stock Dividend Yield Minus Government Bond Yield

Stock Market Capitalization and Government Debt as a Share of GDP.

Government debt is now about 100% of GDP and has generally been climbing since the 1970s. During the 1800s and 1900s, government debt was driven by war. Government debt increased during the Revolutionary War, Civil War, World War I and World War II, then declined after each war. As GDP grew, nominal government debt declined as a share of GDP.

On the positive side, the stock market's capitalization exceeds the government's debt. As Figure 19.5 shows, the government's deficit and stock market capitalization were inversely related during most of the 1800s and 1900s. The declines in Federal debt after the Civil War, World War I and World War II were accompanied by growth in the stock market's capitalization. Since the 1970s, however, both the government's deficit and stock market capitalization have grown, though stock market capitalization has grown faster.

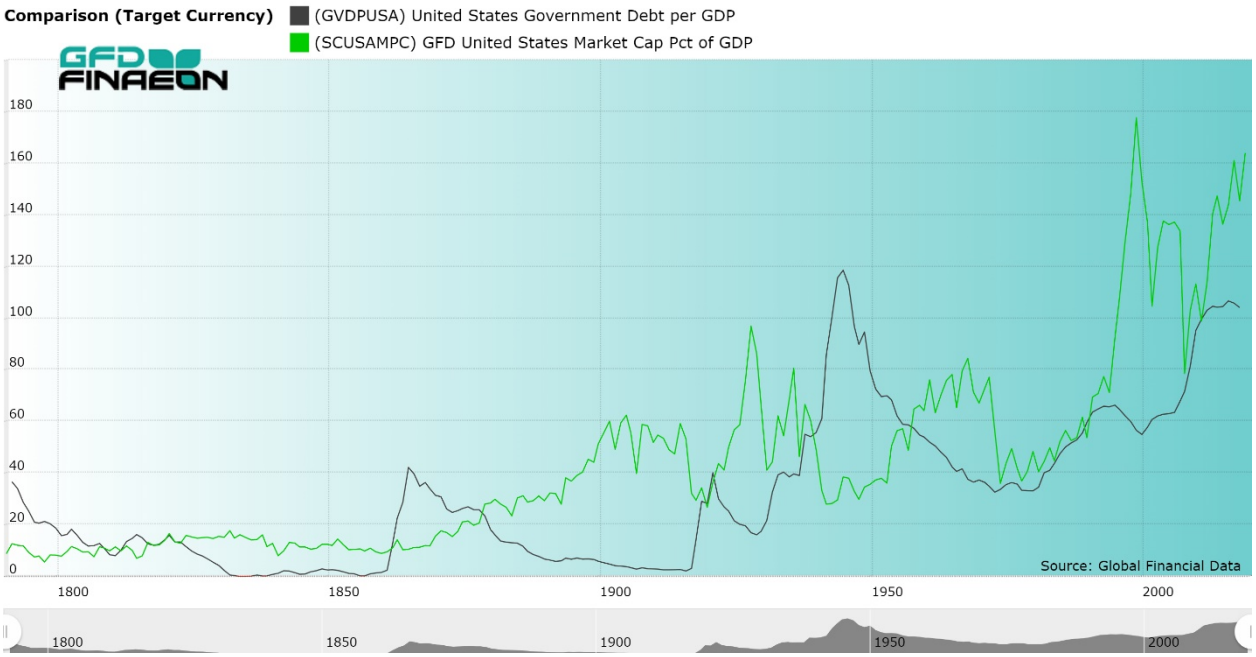


Figure 19.5. United States Stock Market Cap and Government Debt Relative to GDP, 1792 to 2019

14. Conclusion

The United States is entering a new decade and it will be interesting to see how the stock market performs in the 2020s relative to the 2010s. Declining bond yields have produced capital gains for fixed-income investors for almost 40 years now, providing them with high returns. With yields under 1%, this trend must come to an end. Returns have fallen from 12% in the 1980s to 8% in the 1990s to 6% in the 2000s and 4% in the 2010s. The returns in the 2020s are likely to be around 2%. Returns to bills is likely to be even less.

This means that returns to equities will depend upon the behavior of the stock market. With the historical equity risk premium around 3-4%, returns of around 5% are likely in the coming decade. Returns were negative in the 2000s, but double-digit in the 2010s. With all measures of the stock market at historical highs, it seems unlikely that double-digit returns are likely in the 2020s. As long as interest rates remain low, and this seems likely, the stock market should continue to grow.

World

1. Sources

Global Financial Data's World Index extends from the beginning of stock markets in Amsterdam in 1602 to the present day. Until now, no one has calculated a World Index that precedes 1900 and no one has calculated an index which is reweighted on a regular basis. Now, an index that provides a complete history of global equity markets is available. GFD also provides world bond indices that can be compared to the global equity indices, and calculates global sub-indices that include the World excluding the United States, the World excluding the US and UK, a European Index, and an index for Emerging Markets. Without these global composites, it is impossible to understand the behavior of stocks, bonds and bills over the past 400 years.

The Six Eras

Global Financial Data divides the past four centuries of the stock market into six eras: Mercantilism (1602-1792), the Transportation Revolution (1792-1848), Free Trade (1848-1914), World War (1914-1945), Keynesianism (1945-1981) and Globalization (1981-). The stock market and fixed-income markets were fundamentally different during each of those eras affecting equity and bond returns, the dividend yield and the equity risk premium.

Data from 1601 to 1815 is market-cap weighted by company. The index includes 38 companies from the United Kingdom, 3 from France, 3 from the Netherlands and 29 from the United States. We have data on the price, dividends and shares outstanding for each of the 73 companies. If any of those three variables was unavailable, we excluded the company from the index.

Beginning in 1815, we use indices from each country as the basis for the index and weight each country according to actual or estimated market caps for that country. The market caps are revised every five years, and these are used to weight each country in the index for the next five years. We use the market caps on December 31, 1914 for the weights between 1915 and 1919, the market cap on December 31, 1919 for the weights between 1920 and 1925, etc. Price and return indices are monthly in periodicity using end-of-month values. All values were converted to British Pounds for the data through 1815, and all data after 1815 were converted to United States Dollars. Data for the price indices, return indices, and stock market capitalization that were used to calculate these indices are available from Global Financial Data.

Twenty-four countries are included in the developed indices: Australia (1825-), Austria (1925-), Belgium (1900-), Canada (1825-), Denmark (1875-), Finland (1915-), France (1718-1793, 1801-), Germany (1835-), Hong Kong (1965-), Ireland (1800-), Italy (1925-), Japan (1915-), Luxembourg (1930-), Netherlands (1601-1794, 1915-), New Zealand (1865-), Norway (1915-), Portugal (1980-), Russia (1865-1928), Singapore (1965-), Spain (1915-), Sweden (1870-), Switzerland (1915-), United Kingdom (1692-) and the United States (1792-). All other countries were treated as emerging markets and excluded from the index. Tsarist Russia before 1918 is treated as a developed market and data for the Russian Federation after 1991 is treated as an emerging market. Twenty-six countries are used in the emerging market indices increasing the total number of countries that are included in the All-World index to fifty.

A graph of the index for the twenty-four developed markets is provided in Figure 20.1. Since these are market-cap weighted indices, a few countries figure prominently in the calculation of the index. Figure 20.1 shows the market cap of countries between 1900 and 2000. The United States clearly represents the largest portion of the market cap. Britain represented a large portion of the market cap until the 1950s and between those two countries, the United States and the United Kingdom represented 60% to 70% of the market cap during most of the twentieth century.

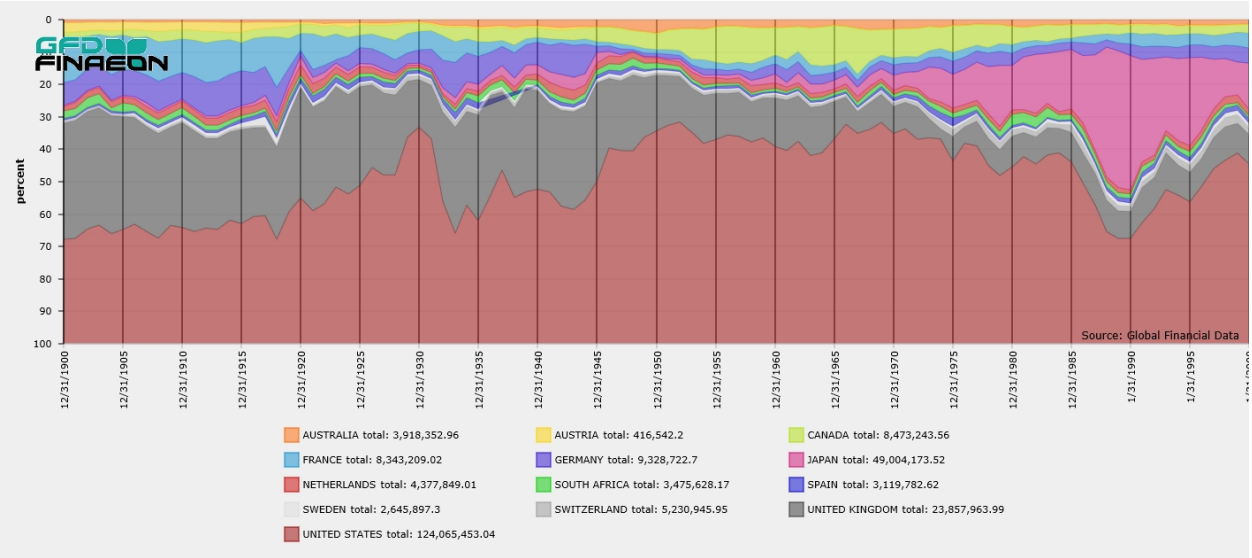


Figure 20.1. Market Capitalization Weights by Country 1900 to 2018

Total Returns

Table 20.1 presents the returns to stocks and bonds over the past 400 years during different periods of time. Data are available for equities beginning in 1602 and for bonds beginning in 1700.

Period	Stock Price	Dividends	Stock Return	Bonds	Equity Premium
1602-1792	1.20	5.85	7.12		
1792-1848	0.32	5.12	5.45	5.52	-0.06
1848-1914	1.87	4.54	6.50	3.50	2.90
1914-1945	1.62	5.01	6.71	4.02	2.59
1945-1981	5.69	4.33	10.26	1.74	8.38
1981-2019	7.35	2.88	10.43	6.87	3.33
1700-1800	0.28	4.92	5.21	5.93	-0.67
1800-1900	1.33	4.81	6.21	4.59	1.54
1900-2019	4.51	4.06	8.75	3.98	4.59
1602-2019	2.15	5.08	7.33		
1700-2019	2.17	4.56	6.83	4.78	1.96
1792-2019	2.94	4.43	7.51	4.35	3.02
1914-2019	5.06	4.00	9.26	4.27	4.79

Table 20.1. Global Returns to Stocks and Bonds, 1602-2019

Between 1602 and 2019, stocks had capital gains of 2.15% per year, paid dividends of 5.08% and provided a total return of 7.33%. Between 1700 and 2019, stocks had annual capital gains of 2.17%, dividends of 4.56% and a total return of 6.83%. Bonds returned 4.78% per annum which makes the equity risk premium 1.96% over the past 319 years. The equity risk premium has risen over time and peaked during the period of rising interest rates between 1945 and 1981. It has dropped back to 3.33% since then.

Changes in the Equity Risk Premium can be explained by changes in the relative risk of stocks and bonds over time. During the 1700s both government bonds and the mercantilist monopolies were managed by the government, so there was little difference in the risk profile of stocks and bonds. Consequently, the equity risk premium was lowest in the period of mercantilism. The equity risk premium was at its highest during the period of rising bond yields between 1945 and 1981 when Keynesian policies influenced interest rates and markets through regulation and nationalization. Since 1981, declining interest rates have generated high returns to bonds and closed the gap between the returns to stocks and bonds. Since financial repression has pushed down interest rates in Europe and the United States over the past ten years, bond returns are likely to remain low, and the equity risk premium will depend upon changes in the return to equities.

Returns varied greatly during the six eras. The period of Globalization since 1981 has provided the highest capital gains of any period in history. The worst performing period was the period of the Transportation Revolution when Finance and Transportation stocks dominated stock markets. Although stocks have provided double-digit returns over the past 75 years, such high returns seem unlikely in the future. Similarly, although bonds have consistently provided returns over 4% during the past 300 years, returns closer to 2% are likely in the future.

2. Real Returns to Stocks, Bonds, Bills, ERP

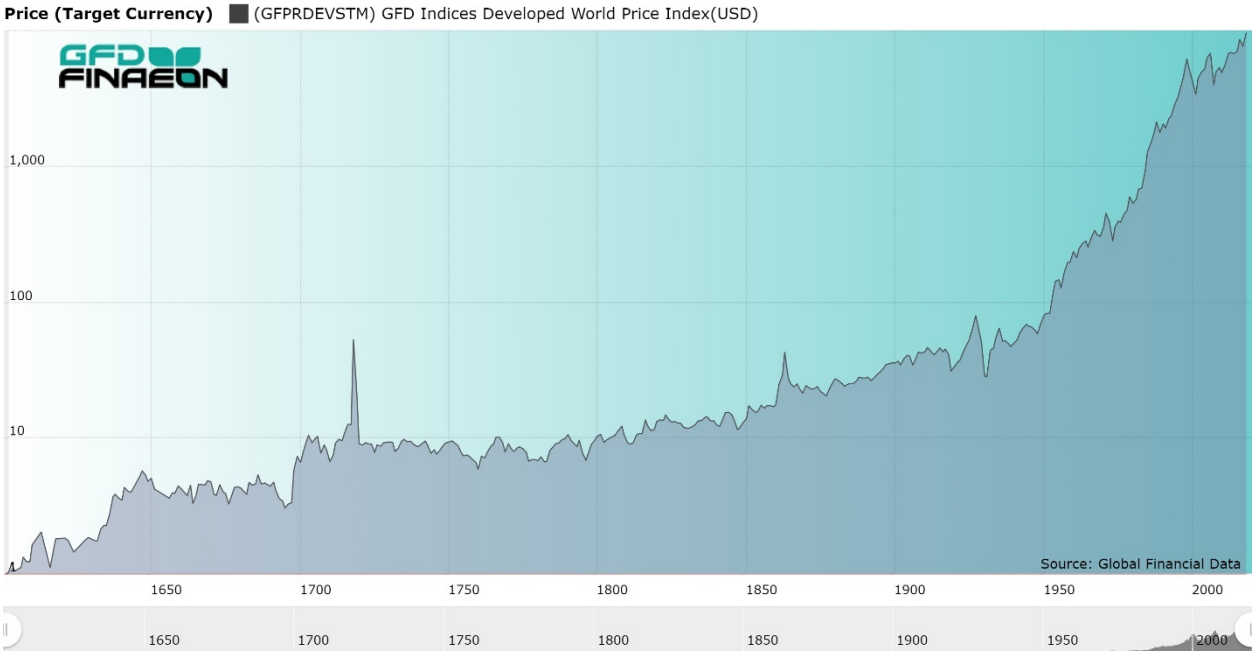


Figure 20.2. GFD Developed World Price Index in USD, 1602 to 2019

Although the first stock markets were established in 1600, stock markets as we know them today weren't really established until the 1800s when shares in hundreds of corporations became available to investors. In the early 1800s, the number of companies that traded in the United Kingdom and the United States grew, quickly reaching over 100 companies. When railroads went public in the 1830s and 1840s, not only did the number of listed companies increase, but the market capitalization of the companies grew dramatically. By the 1850s, railroads represented over half of the total market capitalization in both countries.

The price index for the Developed World is provided in Figure 20.2 and the price index for the Developed World excluding the United States is provided in Figure 21.2. The two graphs are very similar, showing that global stock markets have been integrated since the late 1600s. As the telegraph was introduced in the 1860s, telephones in the late 1800s and communication satellites in the 1970s, global financial markets have become more integrated and today an event in one market can trigger a response in another market within minutes.

Total Returns to Stocks Bonds and Bills in US Dollars by decade after adjusting for inflation is provided in Table 20.2. The 1720s was the worst performing decade of the past three centuries, primarily because the South Sea Bubble occurred in 1719. After adjusting for dividends, only two other decades provided a negative real return to shareholders, the 1910s and the 2000s, so negative returns in a decade occur about once in a century.

There appears to be a 30-year cycle in the returns to equities. The best performing decades during the past century were the 1920s, 1950s, 1980s and 2010s. Returns in the decades that followed those four were positive, but below the returns in the previous decades. The worst performing decades were the decades that preceded the best performing decades, the 1910s, 1940s, 1970s and 2000s.

Using this evidence, we would expect that the 2020s will provide a lower return than the 2010s, but the returns will still be positive and probably greater than the returns to either bonds or bills.

Fixed-income instruments perform the best in decades of falling inflation and interest rates, and worse in decades of rising inflation and interest rates. This has been true for the past 300 years, and there is no reason why this should change. Information on the Equity Risk Premium (ERP) is provided in the final column. The ERP has been negative in 9 of the 30 decades that are covered. The 2000s produced the lowest ERP in almost 300 years.

Years	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
By Decade						
1699-1709	5.44	13.14	4.96	5.43	7.79	-1.03
1709-1719	21.15	27.78	13.85	6.21	12.23	-1.34
1719-1729	-16.95	-12.89	1.81	3.18	-14.43	1.12
1729-1739	2.02	6.87	5.91	6.38	0.91	-2.17
1739-1749	-1.32	2.94	2.13	3.01	0.79	1.08
1749-1759	-3.34	0.4	0.5	3.04	-0.09	1.00
1759-1769	2.17	6.66	3.17	3.42	3.39	0.64
1769-1779	-3.27	1.19	-0.04	4.21	1.22	0.53
1779-1789	3.12	8.05	6.4	4.77	1.55	0.33
1791-1799	-3.41	1.28	-1.12	2.34	2.43	2.71
1799-1809	3.1	8.7	8.91	5.16	-0.19	0.00
1809-1819	-1.09	3.48	5.87	4.72	-2.25	0.34
1819-1829	3.32	7.68	11.41	5.86	-3.34	-1.94
1829-1839	-1.65	4.83	2.32	2.20	2.45	2.04
1839-1849	1.62	5.76	9.35	7.94	-3.28	-2.70
1849-1859	2.24	5.16	4.07	3.47	1.05	1.55
1859-1869	-1.22	4.68	0.91	0.81	3.73	4.19
1869-1879	2.33	8.06	8.57	6.50	-0.47	-2.24
1879-1889	1.89	6.46	5.78	3.04	0.64	0.00
1889-1899	2.19	6.71	3.92	2.19	2.68	0.13
1899-1909	-0.42	4.02	0.75	0.63	3.24	2.39
1909-1919	-7.26	-3.06	-8.83	-4.29	6.34	7.34
1919-1929	6.08	11.94	5.59	4.87	6.00	-0.94
1929-1939	-0.94	3.68	6.35	2.67	-2.51	-2.04
1939-1949	-3.52	0.69	-3.92	-4.63	4.80	5.36
1949-1959	10.44	15.68	-1.76	-0.20	17.76	2.22
1959-1969	2.22	5.49	-0.15	1.50	5.66	2.52
1969-1979	-2.89	0.9	-1.1	-0.82	2.02	7.36
1979-1989	10.5	13.91	7.31	3.83	6.15	5.10
1989-1999	8.08	9.86	4.99	1.97	4.65	2.93
1999-2009	-4.55	-2.37	3.91	0.21	-6.04	2.52
2009-2019	5.05	7.96	2.18	-1.17	5.65	1.77
By Era						
1792-1848	0.41	5.53	5.42	4.89	0.10	-0.07

1848-1914	0.83	5.33	4.23	2.60	1.06	1.11
1914-1945	-0.24	4.7	0.38	7.66	4.30	1.92
1945-1981	1.16	5.35	-1.96	-0.37	7.46	4.67
1981-2019	5.1	7.55	5.28	1.13	2.15	2.69
To Present						
1699-1799	0.16	5.09	3.68	4.19	0.20	0.28
1799-1899	1.26	6.14	6.06	4.17	0.88	0.12
1899-1999	2.06	6.15	0.8	0.51	4.60	3.18
1699-2019	1.09	5.59	3.46	2.72	1.66	1.24
1799-2019	1.52	5.82	3.37	2.06	2.34	1.68
1899-2019	1.73	5.56	1.17	0.34	3.56	3.01
1919-2019	2.9	6.62	2.27	0.79	3.91	3.92
1949-2019	3.97	7.17	2.15	0.75	3.37	2.65
1969-2019	3.07	5.89	3.42	0.79	1.25	2.15
1999-2019	0.14	2.67	3.04	-0.48	-1.55	3.47

Table 20.2. Global Real Returns to Stocks, Bonds, Bills and ERP in USD, 1719-2019

What does this mean for investors in the 2020s? If the cycle were to continue in the next decade, you would expect two things. First you would expect positive returns to equities in the coming decade, though lower returns than in the 2010s. Each of the decades following a double-digit return in the 1900s, 1930s, 1960s and 1990s provided positive returns. Although double-digit returns seem unlikely in the 2020s, it is possible.

On the other hand, if you look at returns to the World Excluding the United States, you get distinctly different results. The only two decades with double-digit returns were the 1950s and 1980s. During both of those decades the Equity Risk Premium exceeded 10%.

Bond returns have shown a declining pattern over the past four decades and this is likely to continue in the 2020s. The 10-year bond is yielding less than 2% today and the return to bonds is likely to be less than 2% in the coming decade. It seems unlikely that returns would turn negative because interest rates would need to rise during the 2020s to produce a negative return.

3. Equity Risk Premium and Inflation

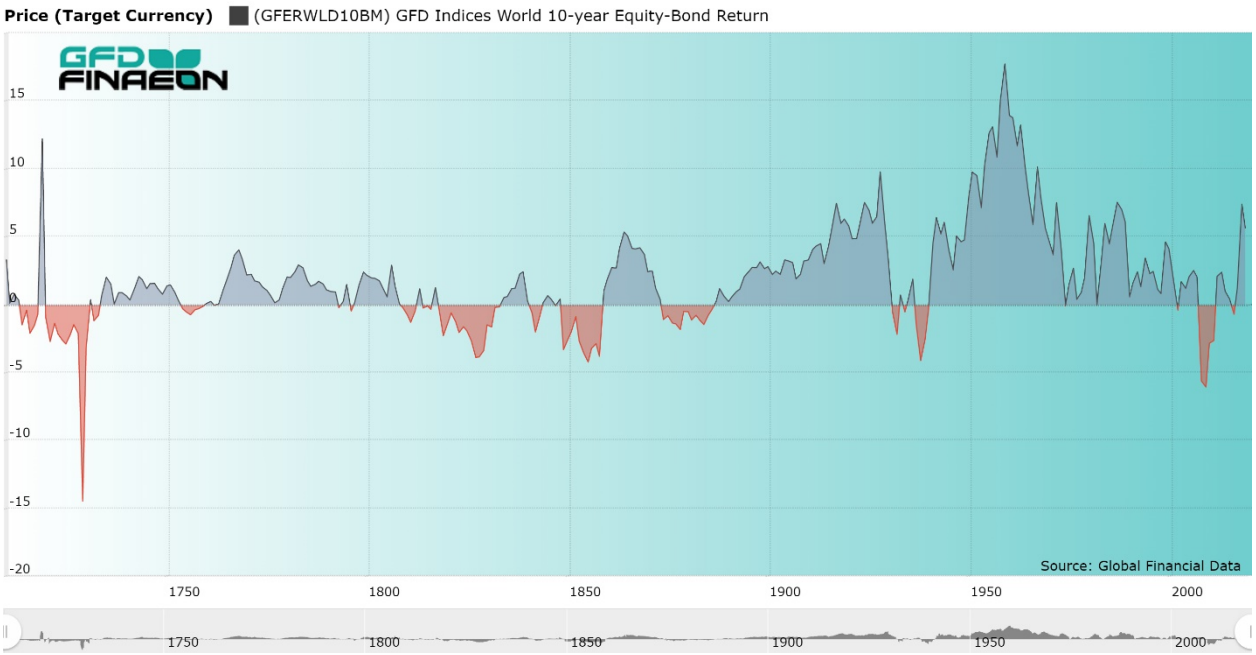


Figure 20.3. GFD World Index Equity Index – US 10-year Bond Equity Risk Premium

The equity risk premium is the difference between the return to risky stocks and the return to risk-free bonds. These returns are illustrated in Figure 21.3 which shows the difference between returns to GFD's World Index and the return to the GDP-weighted GFD Bond Return Index. 10-year periods during which bonds outperformed stocks (in red) are clearly the exception to the rule. Equities have outperformed bonds over 10-year periods over 75% of the time.

During the past 100 years, there were two main periods when bonds outperformed stocks, in the 1930s and in the 2010s. Bonds outperforming equities was more common in the 1800s, especially between the 1810s and the 1860s when bonds outperformed stocks about half of the time, but since 1900, this has been rare.

It is interesting to see that the return to equities increased relative to the return to bonds between the 1880s and 1920s. There was a pause during the 1930s, an up-cycle between 1940 and 1960 and a down cycle between 1960 and 1980. Since the 1980s, there has been no pattern in the equity risk premium.

4. Bull and Bear Equity Markets

Table 20.2 provides a list of the global bull and bear markets that have occurred in world stock markets between 1600 and 2018. GFD defines a bull market as a 50% increase in the price of equities and a bear market as a 20% decline in the price of equities. It should be remembered that the data from the 1600s represents the behavior of only one stock, the Dutch East India Co. Overall, there were six bear markets in the 1600s, five bear markets in the 1700s, only two bear markets in the 1800s, seven bear markets in the 1900s and so far, only three bear markets in the 2000s. The correlation in the performance of the underlying markets has increased over time.

Month	Change	Month	Change	Cause

12/31/1602		04/30/1607	65.15	Spanish State Bankruptcy
07/31/1607	-31.76	06/30/1614	82.24	Failure of Genoese Banks
12/31/1617	-45.39	11/30/1622	65.34	30-years War
11/08/1625	-21.12	08/31/1649	301.56	30-years War
08/31/1665	-44.37	08/31/1671	68.63	Second Anglo-Dutch War
06/30/1672	-47.3	02/28/1688	93.26	Third Anglo-Dutch War
10/09/1696	-46.71	02/28/1700	175.66	Nine Years War
02/28/1701	-36.25	04/29/1704	106.66	Death of Charles II
03/31/1712	-39.95	12/31/1719	721.74	War of the Spanish Succession
01/29/1762	-89.28	05/31/1768	85.53	South Sea Bubble
10/31/1784	-37.35	03/31/1792	74.04	French Revolution
05/31/1797	-41.37	12/31/1809	81.63	Napoleonic War
07/31/1812	-35.11	07/31/1845	102.06	Railroad Mania
11/30/1848	-32.47	8/31/1912	126.28	World War I
7/31/1921	-39.44	8/31/1929	203.83	Great Depression
6/30/1932	-75.42	2/28/1937	197.55	1937 Recession
5/31/1940	-39.75	5/31/1946	81.71	Post WWII Recession
9/30/1949	-26.41	1/31/1969	503.60	Vietnam War
6/30/1970	-24.63	2/28/1973	64.73	OPEC
9/30/1974	-43.39	4/27/1981	116.51	Second Oil Crisis
8/12/1982	-26.56	8/27/1987	318.87	1987 Crash
10/26/1987	-23.70	1/4/1990	50.92	Iraq War
9/28/1990	-25.90	7/20/1998	170.11	Asian Crisis
10/8/1998	-20.05	3/27/2000	58.49	Internet Bubble, 9/11
10/9/2002	-51.41	10/31/2007	139.07	Real Estate Bubble
3/9/2009	-59.07	2/12/2020	253.61	Coronavirus
3/18/2020	-30.91			

Table 20.2. Global Bull and Bear Markets, 1602 to 2019

It is interesting to note that the market bottom in 1932 was 35% below the market top in 1719. The longest and deepest bear market in world history followed the 1719 Mississippi-South Sea Bubble when the market declined by 89% between 1719 and 1762. The longest bull market occurred between 1791 and 1845, which ended in the railway mania of the 1840s. The 1929 to 1932 decline was the second worst bear market in history, during which the market declined by 75%, primarily because of the large decline in the stock market in the United States. Surprisingly, the bear market in 2007 to 2009 was the third worst bear market in the past 400 years. This also emphasizes how severe the 2008 bear market was and the fact that global bear markets with a decline over 50% are rare events.

The bull market leading up to the 1719 peak was the strongest bull market in history with prices rising 721% between 1712 and 1719. The market rose 702% between the market bottom of 1974 and the market top in 1989; however, if you use data from MSCI for their Developed World Index, the market declined 23.7% between August 27, 1987 and October 26, 1987, then rose 50.92% by January 4, 1990, barely qualifying the 1987 to 1990 rise as a separate bull market. If you adjust for inflation, you get different results as well. Inflation reduces the 1949 to 1968 increase from 495% to 302% and reduces the 1974 to 1989 rise from 702% to 222%. Definitions count.

And the prediction for the coming decade?

The 2020s have begun with the Coronavirus Bear Market. The bear markets that began in 2018 in emerging markets and Europe has spread to the rest of the world. How long and how deep the bear market of 2020 will be remains to be seen.

Our prediction is that the stock market still hasn't fully incorporated low government bond yields into the market. With little prospect of inflation, there is no reason for bond yields to rise. Instead, bond yields are likely to continue their decline in the 2020s.

5. Fixed Income Markets

Since there is no global currency that global bonds are issued in, we use the yield on US government bonds as a proxy for fixed income because the World stock market index is calculated in US Dollars. One way of measuring bull and bear markets in fixed income is to compare the return on short-term bills or 2-year Notes with the yield on the 10-year government bond. Figure 21.4 shows the path of bond yields over the past 700 years using data from Italy (1311-1508), Spain (1509-1598), the Netherlands (1599-1702), Britain (1703-1907), Germany (1908-1913), Britain (1914-1918) and the United States (1919-). This graph uses the yield on the lowest yielding bonds at each point in history over the past 700 years to illustrate the long-term trend in bond yields throughout the world.

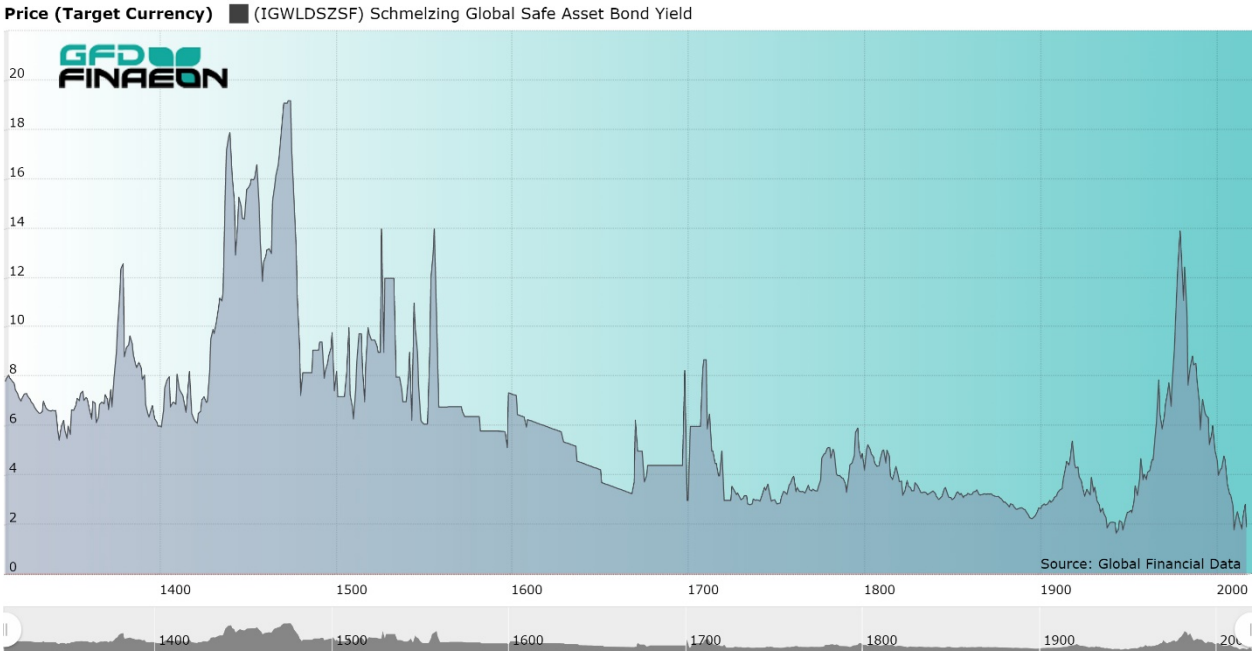


Figure 20.4 Long-term Bond Yields, 1311 to 2019

The spread between the dividend yield on developed world stocks and the U.S. 10-year bond is illustrated in Figure 20.5. The graph looks very similar to the graph for the United States because the U.S. represents such a large portion of stocks traded in the developed world. The dividend yield exceeded the yield on government bonds until around 1957. The bond yield was greater until the 2008 Financial Crisis, and since then the spread has fluctuated depending upon the yield on government bonds. This pattern is likely to continue for the rest of the decade.

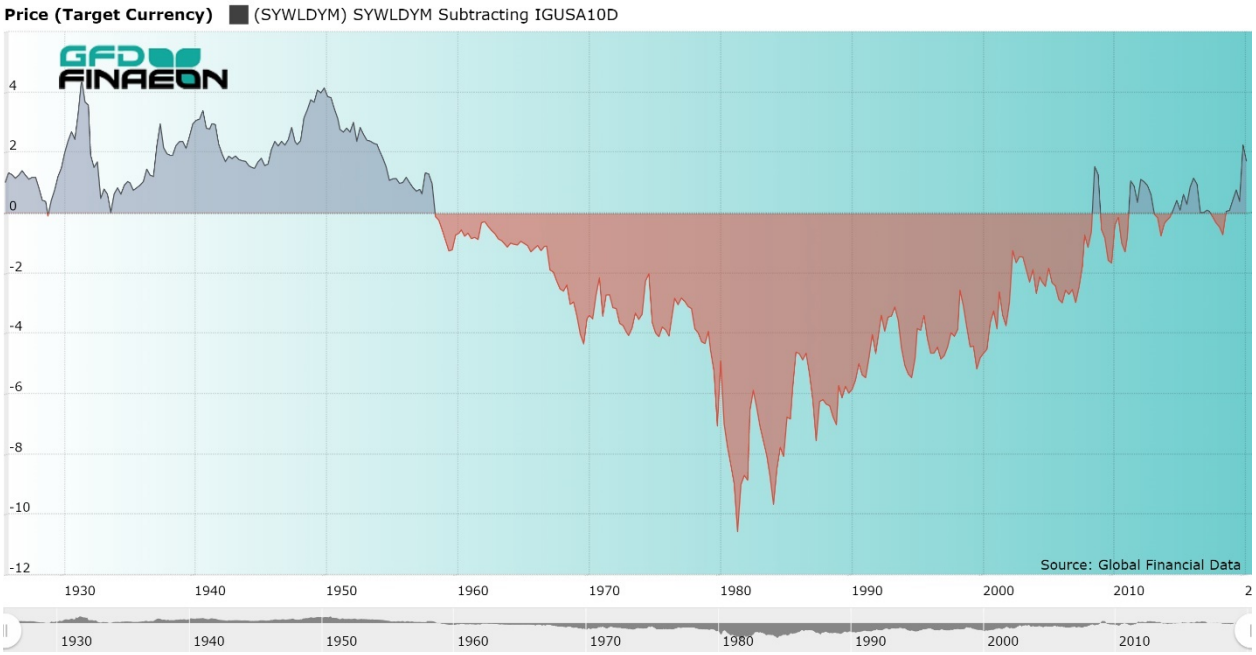


Figure 20.5. World Stock Dividend Yield Minus US Government 10-year Bond 1925 to 2020

6. Stock Market Capitalization and Government Debt

Global Stock market capitalization increased dramatically between 1980 and 2000, rising from around 30% of global GDP to over 100% during the Dot.com bubble that culminated in 1999. During most of the twentieth century, market capitalization was around 30% of world GDP. It declined during World War I when governments redirected capital to government bonds and many stock markets, such as Germany's and Russia's closed down during the war. There was a rally during the bull market of the 1920s, mainly driven by growth in the American stock market which grew to equal America's GDP by 1929, but this was followed by a steady decline in the 1930s and 1940s. The S&P 500 fell over 85% between 1929 and 1932, wiping out the growth in the 1920s. Capitalization grew until the 1937 recession hit, then declined throughout the 1940s.

Government officials learned from World War I when stock markets closed worldwide. Two things differed when World War II began. First, global stock markets and forex markets were not as integrated in 1939 as they were in 1914. The fear that people in other countries would sell securities and redeem the capital in another country was unfounded. Governments also learned to control pricing to limit the decline in the price of securities. What this did, however, was to freeze trading and some stock exchanges, such as Berlin, just froze up as the value of shares fell below the minimum price they were allowed to trade at. As during World War I, resources were redirected to government bonds as governments controlled industry, few consumer goods were produced and new companies did not list on the exchanges.

Stock market capitalization as a share of GDP fell to its lowest levels in the twentieth century after World War II ended in 1945. Either the war reduced the value of many industries which were destroyed during the war, or European governments nationalized utilities, steel, banks and other "essential" industries leaving fewer firms available for public investment. Governments rationalized that they had effectively controlled these firms during World War II, so there was no reason why they shouldn't control them to help the economy grow after the war. Reality soon proved them wrong and as world trade grew after the war, private companies grew in number and in size as well. By the end of the 1960s, market capitalization as a share of GDP grew to 50%, twice what it had been at the end of World War II. Stock market capitalization in countries like France fell below 10% of GDP.

Market capitalization declined once again in the 1970s as inflation, OPEC and slower growth reduced the capitalization of the stock market in Europe, Japan and the United States. The nadir was reached in 1981 when interest rates hit double-digit levels in the United States. The failure of Keynesian policies was recognized and the world began to move toward more open markets. By the end of the 1980s, Communism had fallen and countries in Europe, China and the rest of the world began privatizing their economy. Japan's bubble made the first push to raise capitalization to over 50% of GDP and the privatization of the former Communist governments and the internet bubble pushed stock market capitalization to over 100% of GDP by 1999, a quadrupling of the capitalization/GDP ratio since 1981.

During the twenty-first century, capitalization has varied depending upon the behavior of the market, plummeting after the dot.com bubble crashed, rising again during the housing bubble, falling again when the housing bubble crashed, and rising since then to bring the Market cap/GDP ratio back over 100%. Whether this market cap/GDP can maintain its position at 100% of GDP during the 2020s, or it crashes once again remains to be seen.

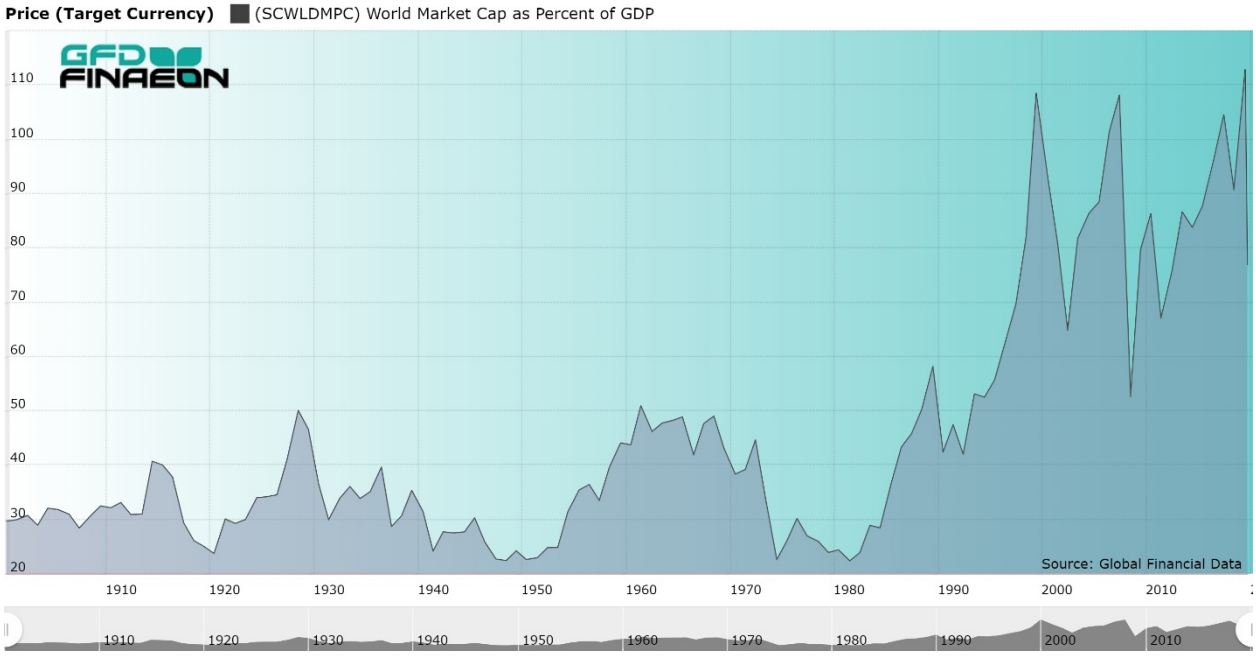


Figure 20.6. World Market Capitalization as a Percent of World GDP

7. Conclusion

This report has taken an unprecedented look at financial markets over the past 400 years to study the patterns not only in the world stock market index, but in the factors that contribute to changes in the world stock market. This coverage not only enables us to have a better understanding of what factors drove the global stock market in the past, but what could drive the stock market in the decade to come.

Part of our goal is to look at the relative returns of stocks and bonds to see which is likely to provide the higher return during the coming decade. In many countries in the world, bonds have outperformed stocks during the first 20 years of this century, and it is important to know whether this trend will continue.

Our analysis has concluded that returns to fixed income in the 2020s is likely to be low. The current yield on the 10-year bond provides a good prediction of the return that investors are likely to receive in the next 10 years. The return to bonds has been declining during the past 40 years. With bond yields negative in nominal terms in much of Europe and in Japan, and positive in nominal terms, but negative in real terms in the United States and other Anglo countries, it seems unlikely that bonds will return much more than 2% per annum in the coming decade. Unless the world sinks into a bear market during the coming decade, stocks are likely to outperform bonds.

Financial markets have been driven by the Federal Reserve and other central banks since the collapse of financial markets in 2007-2009. Although a prediction of declining bond yields is consistent with the trend in interest rates during the past 700 years, interest rates have been driven down to historic lows by the Federal Reserve and European Central Bank which continue to intervene in markets whenever it looks like there could be a recession. How long the Federal Reserve, European Central Bank and Bank of Japan can continue to keep financial markets on their current path is uncertain. Historically, the goal of the Federal Reserve has been to promote growth while limiting unemployment and inflation. The Fed has been very successful in doing this during the past ten years. Unemployment and inflation both remain low, so the Fed has been able to focus more on managing financial markets as a symbol of the future health of the economy. It remains to be seen how well the Fed will handle the coronavirus crisis.

Given this, the question is by how much will equity markets rise or fall in price during the coming decade? Can the Fed continue to achieve the steady growth in the economy and financial markets that prevailed in the 2010s? The bull markets in the 1990s and 2000s ended in bubbles. How successfully will the markets recover from the impact of the coronavirus?

The World Index plunged over 50% in 2000-2002 and 2007-2009. The current bear market began in 2018 in Europe and Emerging Markets and spread to the rest of the world during the coronavirus pandemic of 2020. One of the key questions is how leadership in global markets will change once the current bear market is over with. Will leadership remain in the United States, or will it shift to Europe or Asia or the Emerging Markets? The market cap of Apple, Microsoft, Alphabet, Amazon and Facebook is worth more than every stock exchange in the world except for the United States and Japan. The World x/USA and Emerging Market indices are still below their levels in 2008. This leaves room for growth in world stock markets in the years to come.

Overall, the evidence for a continued bull market once the coronavirus collapse has passed remains strong. Although bonds are unlikely to return much more than 2% in the coming decade, stock market returns of at least 5%-6% seem likely during the coming decade. The forecast for the global stock market in the next few years is for good, but not spectacular, returns.

World x/USA

1. Sources

Global Financial Data's World Index extends from the beginning of stock markets in Amsterdam in 1602 to the present day. Until now, no one has calculated a World Index that precedes 1900 and no one has calculated an index which is reweighted on a regular basis. Now, an index that provides a complete history of global equity markets excluding the United States is available. GFD also provides world bond indices that can be compared to the global equity indices. It is impossible to understand the behavior of stocks, bonds and bills over the past 400 years.

The Six Eras

Global Financial Data divides the past four centuries of the stock market into six eras: Mercantilism (1602-1792), the Transportation Revolution (1792-1848), Free Trade (1848-1914), World War (1914-1945), Keynesianism (1945-1981) and Globalization (1981-). The stock market and fixed-income markets were fundamentally different during each of those eras affecting equity and bond returns, the dividend yield and the equity risk premium.

Data from 1601 to 1815 is market-cap weighted by company. The index includes 38 companies from the United Kingdom, 3 from France, 3 from the Netherlands and 29 from the United States. We have data on the price, dividends and shares outstanding for each of the 73 companies. If any of those three variables was unavailable, we excluded the company from the index.

Beginning in 1815, we use indices from each country as the basis for the index and weight each country according to actual or estimated market caps for that country. The market caps are revised every five years, and these are used to weight each country in the index for the next five years. We use the market caps on December 31, 1914 for the weights between 1915 and 1919, the market cap on December 31, 1919 for the weights between 1920 and 1925, etc. Price and return indices are monthly in periodicity using end-of-month values. All values were converted to British Pounds for the data through 1815, and all data after 1815 were converted to United States Dollars. Data for the price indices, return indices, and stock market capitalization that were used to calculate these indices are available from Global Financial Data.

Twenty-three countries are included in the World x/USA index: Australia (1825-), Austria (1925-), Belgium (1900-), Canada (1825-), Denmark (1875-), Finland (1915-), France (1718-1793, 1801-), Germany (1835-), Hong Kong (1965-), Ireland (1800-), Italy (1925-), Japan (1915-), Luxembourg (1930-), Netherlands (1601-1794, 1915-), New Zealand (1865-), Norway (1915-), Portugal (1980-), Russia (1865-1928), Singapore (1965-), Spain (1915-), Sweden (1870-), Switzerland (1915-), and the United Kingdom (1692-). All other countries were treated as emerging markets and excluded from the index. Tsarist Russia before 1918 is treated as a developed market and data for the Russian Federation after 1991 is treated as an emerging market. Twenty-six countries are used in the emerging market indices increasing

the total number of countries that are included in the All-World index to fifty. A graph of the index for the twenty-three developed markets excluding the United States is provided in Figure 22.1.

2. Returns to Stocks, Bonds and Bills

The United States represented anywhere from 50-70% of world stock market capitalization during the 1900s. US Stocks outperformed the rest of the world, especially during the period of the World Wars (1914-1945) because the United States didn't suffer from the destruction of the war, but was able to produce goods that were used in the war. Between 1914 and 1945, the World x/USA Index returned 3.01% per annum in real USD, and the European index produced a 2.69% return but US Stocks returned 4.70%. The World x/USA index made no progress between 1900 and 1950. Half a century was lost to war and government intervention in the economy. The second half of the twentieth century made up for this as stocks showed dramatic returns. The World x/USA index provided double-digit returns in the 1950s and 1980s, and a 6.68% overall return between 1950 and 2019. However, the World x/USA index has underperformed the United States during the current century with the US returning 3.02% and the World x/USA index returning 1.72%.

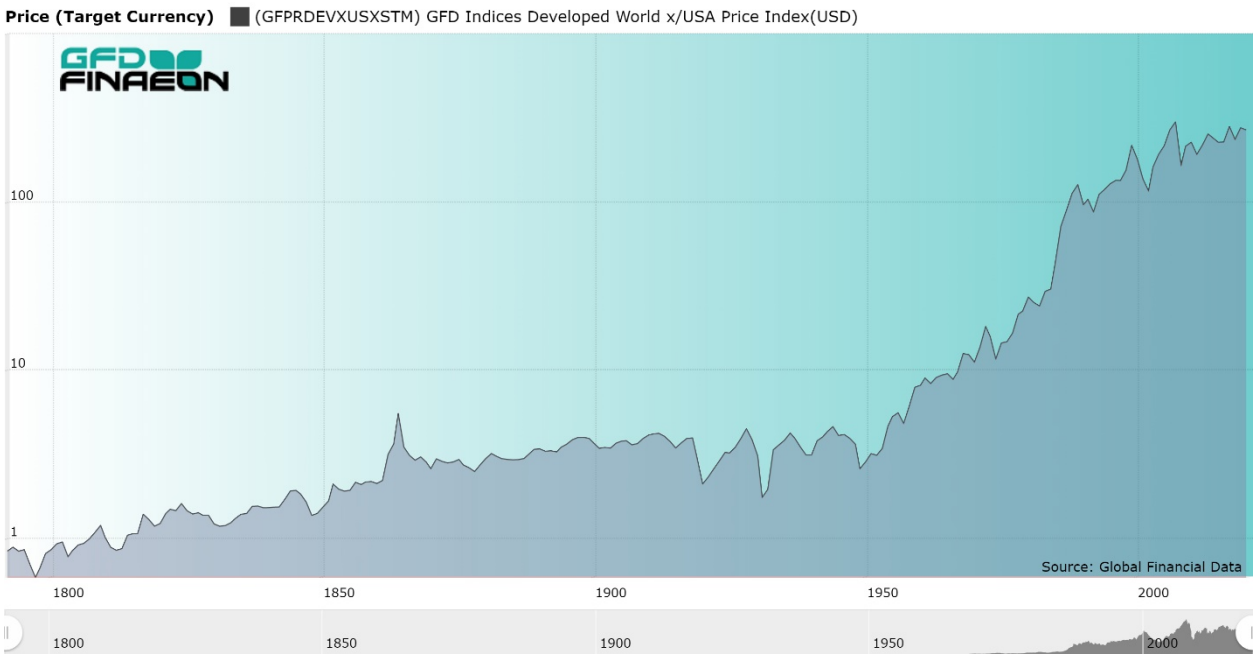


Figure 21.1. Developed World Index Excluding the United States, 1792 to 2019

On the other hand, bonds and bills both provided negative returns in real USD between 1914-1945 and between 1945-1981. This can be seen in Figure 21.2 which compares the returns to stocks, bonds and bills. Post-war inflations and currency devaluations contributed to the decline in returns to bonds. The bond index was at the same level in 1950 as it had been in 1850! The equity-risk premium has been around 3-4% in Europe, but only because the performance of fixed income has been so poor. The ERP was 4.60% in the 1900s, but so far has been -1.55% in the 2000s. With bond yields throughout

Europe at zero or even negative, it seems unlikely that fixed-income investors will receive any return in the decade to come.

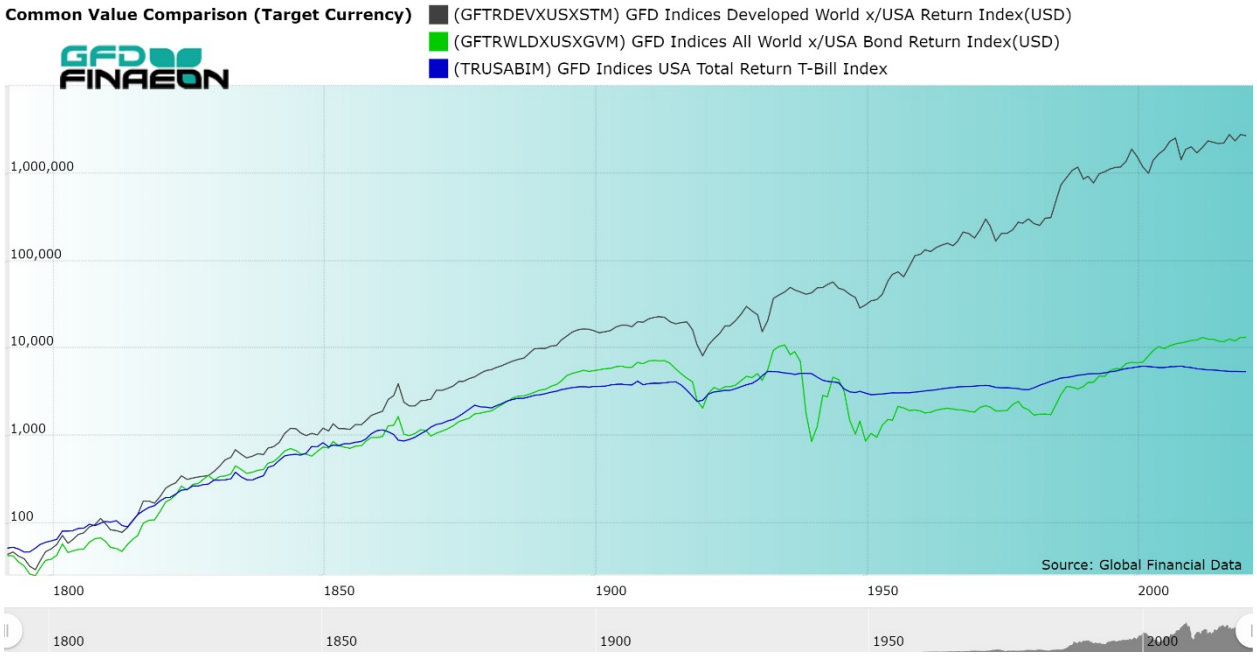


Figure 21.2. World Excluding the United States Returns to Stocks, Bonds and Bills, 1792-2019

A record of the return to stocks, bonds, bills, the equity-risk premium and inflation in Europe by decade are provided in Table 21.1. The best and worst decades for equities are paired together in the 1710s and 1720s when the Mississippi/South Sea Bubble blew up and collapsed. The only other time that stocks provided a double digit return in a decade was the 1950s and the 1980s. The ERP has a dramatic range, rising into double digits in the 1930s, 1950s and 1980s and turning negative in the 1940s, 1990s and 2000s. Stocks provided a negative return during the World Wars, but have provided a high return since 1981. Both bonds and bills provided a negative return between 1914 and 1981 which allowed the ERP to rise to very high levels. Since 1981, the ERP has been small, and during the 21st century, it has been negative so far.

Years By Decade	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
1699-1709	5.44	13.14	4.96	5.43	7.79	-1.03
1709-1719	21.15	27.78	13.85	6.21	12.23	-1.34
1719-1729	-16.95	-12.89	4.72	3.18	-16.82	1.12
1729-1739	2.02	6.87	5.27	6.38	1.52	-2.17
1739-1749	-1.32	2.94	5	3.01	-1.96	1.08
1749-1759	-3.34	0.4	0.28	3.04	0.12	1.00
1759-1769	2.17	6.66	9.3	3.42	-2.42	0.64
1769-1779	-3.27	1.19	0.16	4.21	1.02	0.53
1779-1789	3.12	8.05	7.13	4.77	0.86	0.33

1791-1799	-3.41	1.28	-0.98	2.34	2.29	2.71
1799-1809	3.93	9.14	6.12	5.16	2.85	0.00
1809-1819	-0.44	4.09	4.81	4.72	-0.68	0.34
1819-1829	3.52	7.57	12.44	5.86	-4.33	-1.94
1829-1839	-1	5.64	1.57	2.20	4.01	2.04
1839-1849	1.98	5.34	4.87	7.94	0.45	-2.70
1849-1859	2.86	5.26	3.75	3.47	1.44	1.55
1859-1869	-1.46	4.11	1.76	0.81	2.30	4.19
1869-1879	1.93	7.29	4.74	6.50	2.43	-2.24
1879-1889	2.14	6.63	5.62	3.04	0.96	0.00
1889-1899	1.36	5.3	5.67	2.19	-0.35	0.13
1899-1909	-2.35	1.88	2.05	0.63	-0.17	2.39
1909-1919	-9.27	-5.72	-9.15	-4.29	3.77	7.34
1919-1929	3.48	9.28	6.14	4.87	2.95	-0.94
1929-1939	-0.02	4.5	-8.85	2.67	14.65	-2.04
1939-1949	-6.86	-3.59	-2.17	-4.63	-1.45	5.36
1949-1959	9.36	14.79	2.98	-0.20	11.47	2.22
1959-1969	1.99	5.99	-0.34	1.50	6.35	2.52
1969-1979	-1.12	2.76	1.09	-0.82	1.66	7.36
1979-1989	13.1	15.92	4.92	3.83	10.48	5.10
1989-1999	2.52	4.86	7.27	1.97	-2.25	2.93
1999-2009	-2.58	-0.1	5.48	0.21	-5.30	2.52
2009-2019	0.45	3.58	1.22	-1.17	2.33	1.77
By Era						
1792-1848	0.95	5.86	4.79	4.89	1.03	-0.07
1848-1914	0.43	4.55	3.77	2.60	0.75	1.11
1914-1945	-1.62	3.01	-1.37	-0.05	4.45	1.92
1945-1981	0.49	4.73	-2.57	-0.37	7.49	4.67
1981-2019	3.62	6.25	5.53	5.89	0.68	2.69
To Present						
1699-1799	0.16	5.09	4.88	4.19	0.20	0.28
1799-1899	1.47	6.03	5.1	4.17	0.88	0.12
1899-1999	0.88	4.86	0.24	0.51	4.60	3.18
1699-2019	0.71	5.1	3.38	3.29	1.66	1.24
1799-2019	0.97	5.1	2.7	2.88	2.34	1.68
1899-2019	0.55	4.33	0.75	1.81	3.56	3.01
1919-2019	1.89	5.64	1.67	2.56	3.91	3.92
1949-2019	3.26	6.68	3.2	3.29	3.37	2.65
1969-2019	2.33	5.27	3.97	4.37	1.25	2.15
1999-2019	-1.07	1.72	3.33	8.60	-1.55	3.47

Table 21.1. Returns to Stocks, Bonds, Bills, ERP and Inflation, 1699 to 2019

3. Bull and Bear Markets

The record of bull and bear markets in the World x/USA Index since 1792 is provided in Table 21.2. The worst bear market occurred between 1929 and 1932. Note that the bear market began in January of 1929 in the World x/USA index, not in September as in the United States. Also note that the World x/USA index declined by only 63% between 1929 and 1932 as opposed to an 86% decline in the United States. The second worst decline occurred between 2007 and 2009 when the index fell by 62%, only slightly worse than the decline during the Great Depression. Two other bear markets in 1912-1921 and 2000-2003 showed 50% declines.

The greatest bull market in the World x/USA index occurred during the recovery from World War II. Between 1949 and 1973, the World x/USA index rose by 686%. The index also made dramatic progress during the 1980s when Europe and other countries privatized many of the industries they had nationalized after World War II. The Index rose 543% between 1982 and 1989. The only other time the index showed an increase of more than 200% was between 1848 and 1912, a 64-year stretch in which the market rose 235%. The index rose by only 125% between 1921 and 1929, much less than the 409% that stocks rose by in the United States.

During the twenty-first century, the World x/USA index had two bear markets that didn't even occur in the United States, in 2011 and in 2014-2016. The current bear market began in 2018 while the bear market didn't begin in the United States until 2020. Over the past 100 years, the World x/USA index has been weaker than the returns in the United States. The exceptions to this rule were the recovery from World War II and the privatization of the economy that occurred in the 1980s.

Date	Bear Loss	Date	Bull Gain
		03/31/1792	
04/30/1798	-42.55	04/30/1802	66.52
10/31/1803	-27.71	10/31/1824	108.25
11/30/1831	-25.98	05/31/1845	72.02
11/30/1848	-35.02	9/30/1912	235.10
11/30/1921	-53.00	1/31/1929	125.73
6/30/1932	-63.18	3/31/1937	150.33
6/30/1940	-42.65	7/31/1944	85.33
9/30/1949	-46.16	2/28/1973	686.86
09/30/1974	-44.50	10/31/1980	143.43
10/29/1982	-23.46	12/27/1989	543.56
4/9/1992	-32.44	6/6/2000	140.58
3/12/2003	-51.89	10/31/2007	190.07
3/9/2009	-62.40	5/2/2011	101.47
10/4/2011	-27.60	7/3/2014	52.30
2/12/2016	-25.21	1/25/2018	46.52
3/23/2020	-38.07		

Table 21.2. World Excluding the USA Bull and Bear Markets

The spread between the stock dividend yield for the World x/USA index and the yield on 10-year U.S. government bonds is illustrated in Figure 22.3. As is true of the World Index, the dividend yield was greater than the U.S. government bond yield until 1958. As interest rates rose until 1981, the spread

between the dividend yield on World x/USA stocks grew, then declined from 1981 until the Financial Crisis of 2008. The stock yield has exceeded the yield on government bonds during the 2010s because bond yields in Europe and Japan were so low. This pattern is likely to continue in the future.

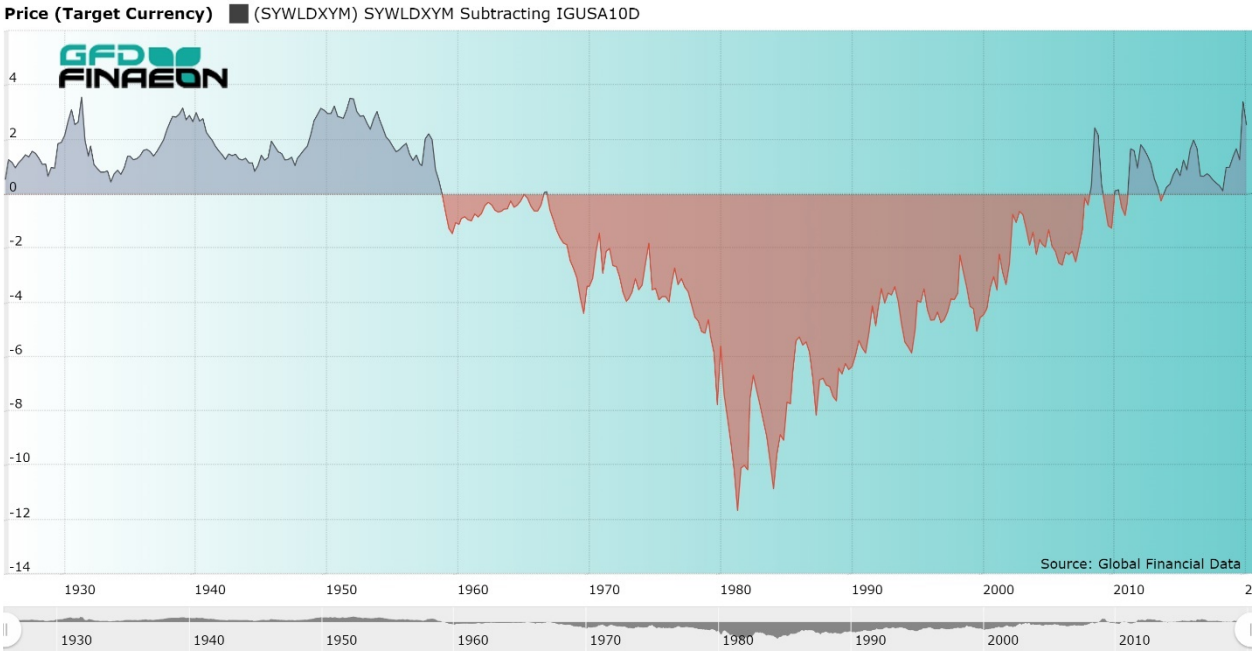


Figure 21.4. World x/USA Dividend Yield Minus U.S. Government Bond Yield

4. Conclusion

Removing the United States from the World index makes dramatic changes in the returns. The United States has represented over half of global stock market capitalization during most of the past century. The United States was able to avoid the destruction of World Wars I and II and the nationalizations that occurred after World War II. Anglo countries have always had more of a market orientation than continental Europe and this is reflected in the differences in the returns to the World index and the World x/USA index. The United States has consistently outperformed the rest of the world. The United States has been the engine of economic growth since the American Civil War ended. There have been periods, such as the 1950s and 1980s when the World x/USA outperformed the United States, but these periods have been the exceptions rather than the rule. Today, Europe and Japan face declining populations, low or no growth in GDP, bond yields of less than 1% and governments that often represent half of GDP. Europe has not been able to take the lead in the internet and information technology during the current century. In technology, China has been more successful than Europe. Given these conditions, there is little prospect for the World x/USA index outperforming returns in the United States.

Europe

1. Sources

Data from 1601 to 1815 is market-cap weighted by company. The index includes 38 companies from the United Kingdom, 3 from France, 3 from the Netherlands and 29 from the United States. We have data on the price, dividends and shares outstanding for each of the 73 companies. If any of those three variables was unavailable, we excluded the company from the index.

Beginning in 1815, we use indices from each country as the basis for the index and weight each country according to actual or estimated market caps for that country. The market caps are revised every five years, and these are used to weight each country in the index for the next five years. We use the market caps on December 31, 1914 for the weights between 1915 and 1919, the market cap on December 31, 1919 for the weights between 1920 and 1925, etc. Price and return indices are monthly in periodicity using end-of-month values. All values were converted to British Pounds for the data through 1815, and all data after 1815 were converted to United States Dollars. Data for the price indices, return indices, and stock market capitalization that were used to calculate these indices are available from Global Financial Data.

Seventeen countries are included in the European indices: Austria (1925-), Belgium (1900-), Denmark (1875-), Finland (1915-), France (1718-1793, 1801-), Germany (1835-), Ireland (1800-), Italy (1925-), Luxembourg (1930-), Netherlands (1601-1794, 1915-), Norway (1915-), Portugal (1980-), Russia (1865-1928), Spain (1915-), Sweden (1870-), Switzerland (1915-), and the United Kingdom (1692-). All other countries were treated as emerging markets and excluded from the index. Tsarist Russia before 1918 is treated as a developed market and data for the Russian Federation after 1991 is treated as an emerging market.

Bond data for Europe begins in 1700 when data for England is available. Although GFD has data on government bond yields for several European countries before 1700, the data are annual and sporadic. Bond data begins in Britain in 1700, in France in 1746, and in many other countries in 1788 when data on bonds traded in Amsterdam becomes available. Countries are weighted by their GDP rather than by the value of bonds outstanding since data on GDP are readily available for most countries, but data on the amount of bonds outstanding is not available for each country for which we have data available. Returns are converted into US Dollars to make the data comparable. A constant value is used prior to the introduction of the US Dollar in 1792. Since there are no Europe-wide Treasury Bills, an index for US Treasury Bills is used as a substitute.

2. Returns to Stocks, Bonds and Bills

An index of the performance of European stocks is provided in Figure 23.1. Data before 1692 represents the performance of only one stock, the Dutch East India Co. As can be seen, the South Sea-Mississippi Co. bubble of 1720 raised the price of stocks to a point that wouldn't be achieved again for another 200 years. Most of the increase in the value of stocks occurred after 1950. The World Wars

(1914-1945) and rising interest rates (1945-1981), lowered the return to stocks to 2.69% and 3.67% respectively. Between 1981 and 2019, European stocks returned 7.88% after inflation in real USD. Stocks achieved double-digit returns in the 1950s, 1980s and 1990; however, during the twenty-first century, stocks have returned only 2.02%. The introduction of the Euro in 1999 clearly did not benefit individual investors. Although there have been powerhouses in Europe, such as Germany, Sweden and Switzerland, more closed economies, such as Greece, Italy and Spain have performed poorly during the past two decades. The European economy needs to open up to more trade and more exports.

The poor returns to bonds have been driven by the defaults that occurred in Russia, Germany, Spain and other countries, as well as capital-destroying inflations like the one that occurred in France after World War II. This led to a -15% return in the 1910s, no return in the 1920s, and -18% return in the 1940s. This led to returns of -5.51% between 1914 and 1945 and -3.82% between 1945 and 1982. This is illustrated in the dramatic drops in the bond index between 1914 and 1950. Bonds showed no increase in value between 1950 and 1980, but has provided positive returns since then with an average annual return in USD after inflation of 6.39%.

Since 1700, stocks have returned an average of 4.99%, bonds 2.80% and bills 2.72%. This gives an ERP during the past 320 years of 2.34%. These values are below the returns to the United States because of poor returns in Germany and France in particular. Detailed information on the returns to stocks, bonds and bills over different time periods is provided in Table 22.1.

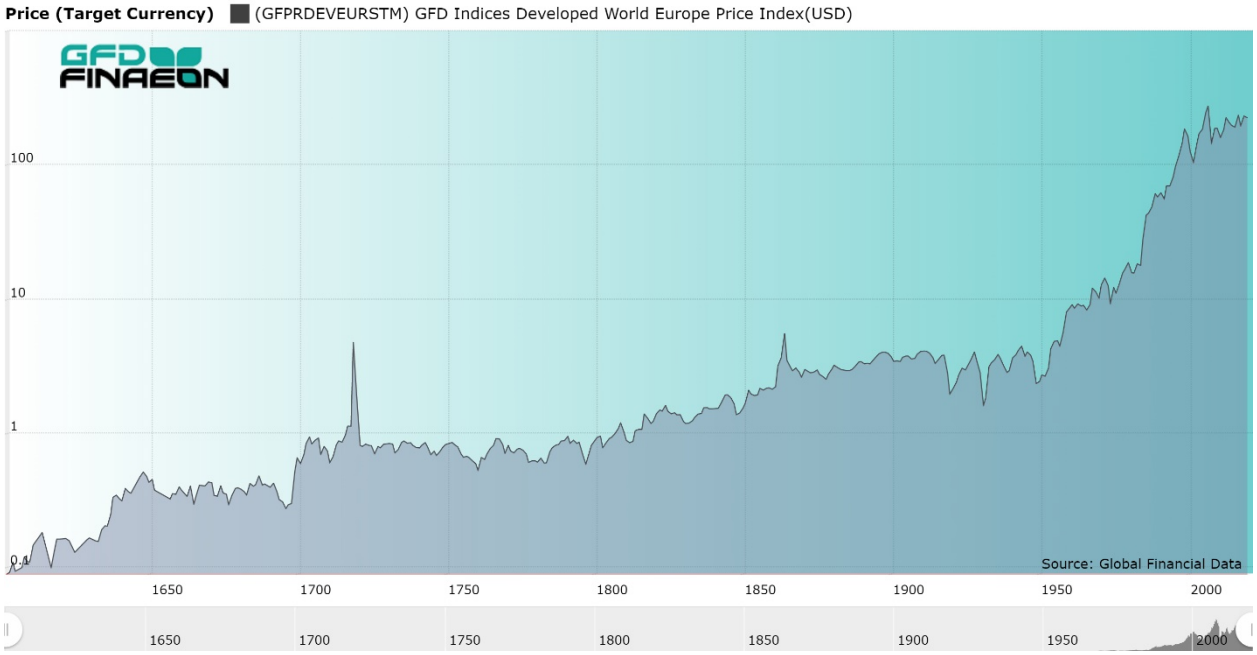


Figure 22.1. European Stock Price Index, 1601 to 2019

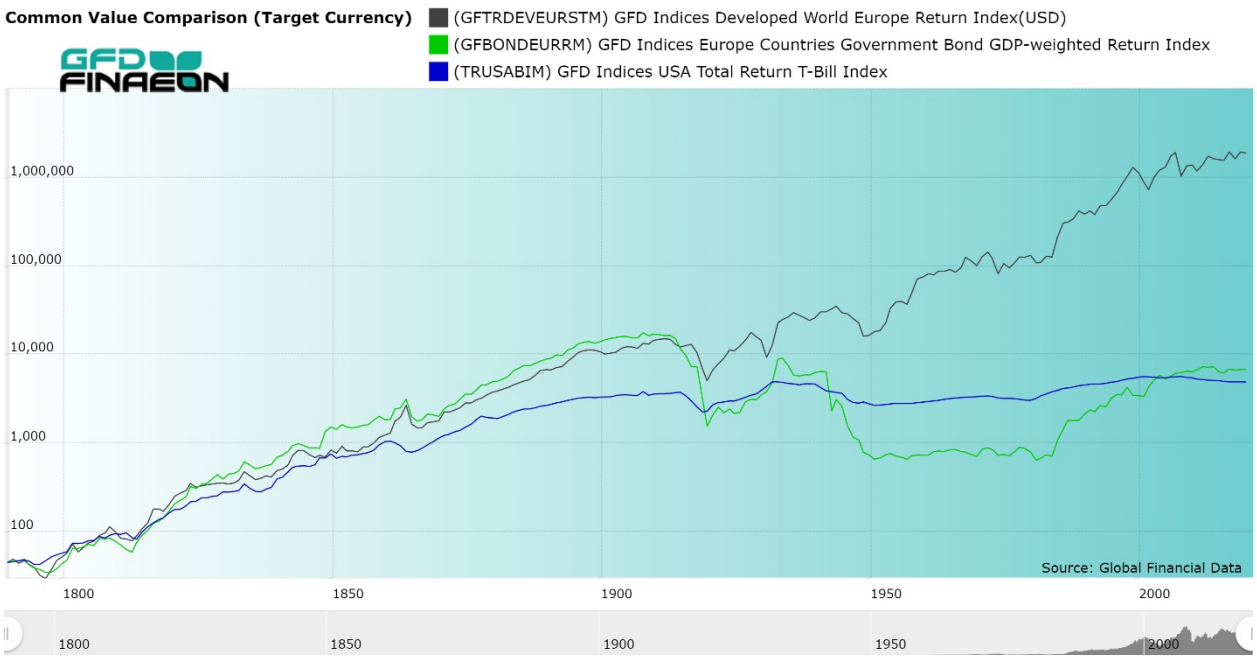


Figure 22.2. Europe Returns to Stocks, Bonds and Bills, 1792 to 2019

Years By Decade	Stock Price	Stock Return	Bond Return	Bill Return	ERP	Inflation
1699-1709	5.44	13.14	4.96	5.43	7.79	-1.03
1709-1719	21.15	27.78	13.85	6.21	12.23	-1.34
1719-1729	-16.95	-12.89	1.81	3.18	-14.43	1.12
1729-1739	2.02	6.87	5.91	6.38	0.91	-2.17
1739-1749	-1.32	2.94	2.13	3.01	0.79	1.08
1749-1759	-3.34	0.4	0.5	3.04	-0.09	1.00
1759-1769	2.17	6.66	3.17	3.42	3.39	0.64
1769-1779	-3.27	1.19	-0.04	4.21	1.22	0.53
1779-1789	3.12	8.05	6.64	4.77	1.32	0.33
1791-1799	-3.41	1.28	-0.85	2.34	2.16	2.71
1799-1809	3.93	9.14	8.36	5.16	0.72	0.00
1809-1819	-0.44	4.09	5.39	4.72	-1.24	0.34
1819-1829	3.52	7.57	11.84	5.86	-3.81	-1.94
1829-1839	-1.02	1.65	2.68	2.20	-1.00	2.04
1839-1849	2.04	5.34	8.91	7.94	-3.27	-2.70
1849-1859	2.84	5.19	4.09	3.47	1.05	1.55
1859-1869	-1.42	4.15	0.35	0.81	3.79	4.19
1869-1879	1.94	7.29	8.23	6.50	-0.87	-2.24
1879-1889	2.11	6.58	6.32	3.04	0.24	0.00
1889-1899	1.41	5.32	4.7	2.19	0.60	0.13
1899-1909	-2.54	1.64	1.95	0.63	-0.29	2.39
1909-1919	-9.75	-6.34	-15.27	-4.29	10.53	7.34
1919-1929	3.07	8.74	0	4.87	8.74	-0.94

1929-1939	0.04	4.4	6.57	2.67	-2.04	-2.04
1939-1949	-6.88	-4.01	-18.16	-4.63	17.30	5.36
1949-1959	10.62	16.03	-0.72	-0.20	16.86	2.22
1959-1969	0.97	4.84	0.11	1.50	4.73	2.52
1969-1979	-3.18	0.95	1.57	-0.82	-0.61	7.36
1979-1989	8.33	12.79	7.56	3.83	4.86	5.10
1989-1999	8.57	12.01	6.8	1.97	4.88	2.93
1999-2009	-2.34	0.37	6.4	0.21	-5.67	2.52
2009-2019	0.35	3.69	0.43	-1.21	3.25	1.77
By Era						
1792-1848	0.96	5.14	5.37	4.89	1.03	-0.07
1848-1914	0.38	4.47	4.42	2.60	0.75	1.11
1914-1945	-1.81	2.69	-5.51	-0.05	4.45	1.92
1945-1981	-0.57	3.67	-3.82	-0.37	7.49	4.67
1981-2019	4.53	7.88	6.39	1.12	0.68	2.69
To Present						
1699-1799	0.16	5.09	3.73	4.19	0.20	0.28
1799-1899	1.47	5.61	6.04	4.17	0.88	0.12
1899-1999	0.72	4.87	-1.34	0.51	4.60	3.18
1699-2019	0.67	4.99	2.8	2.72	1.66	1.24
1799-2019	0.9	4.95	2.38	2.06	2.34	1.68
1899-2019	0.43	4.39	-0.57	0.34	3.56	3.01
1919-2019	1.81	5.81	0.78	0.79	3.37	2.65
1949-2019	3.2	7.08	3.11	0.74	-1.55	3.47
1969-2019	2.22	5.83	4.51	0.78	3.91	3.92
1999-2019	-1.01	2.02	3.37	-0.50	1.25	2.15

Table 22.1. Europe Returns to Stocks, Bonds, Bills, ERP and Inflation, 1699 to 2019

3. Equity Risk Premium

The Equity-Risk Premium for Europe from 1710 until 2019 is illustrated in Figure 23.3. With the exception of the periods after the World Wars in the 1920s and 1950s, the equity-risk premium has remained fairly restrained. Outside of those two eras, the ERP never exceeded 5%. On the other hand, there were numerous periods where bonds outperformed stocks in the early 1700s, between 1820 and 1860, before World War I, in the 1920s and in the 2000s. The ERP between 1700 and 2019 was only 1.66%, but 3.56% between 1900 and 2019. This ERP was 7.49% between 1945 and 1981, but only 0.68% between 1981 and 2019. The low value for the ERP is likely to continue in the decades to come. Anyone who believes it can return to the 7% level will be severely disappointed.

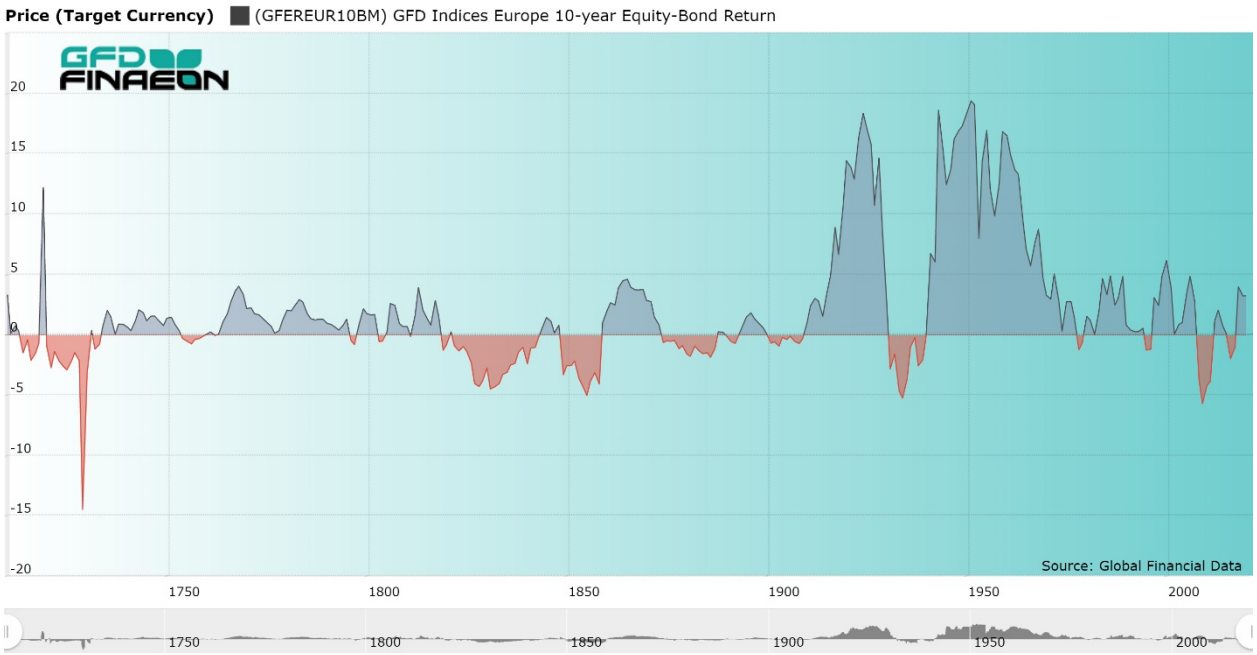


Figure 22.3. Europe 10-year Equity Risk Premium, 1700 to 2019

Unfortunately, the data we have on Europe only goes back to 1970. High yields on government bonds had pushed bond yields above dividend yields around 1958, and this occurred between 1970 and 2012. Since 2012, low bond yields in Europe have enabled the dividend yield to exceed the bond yield.

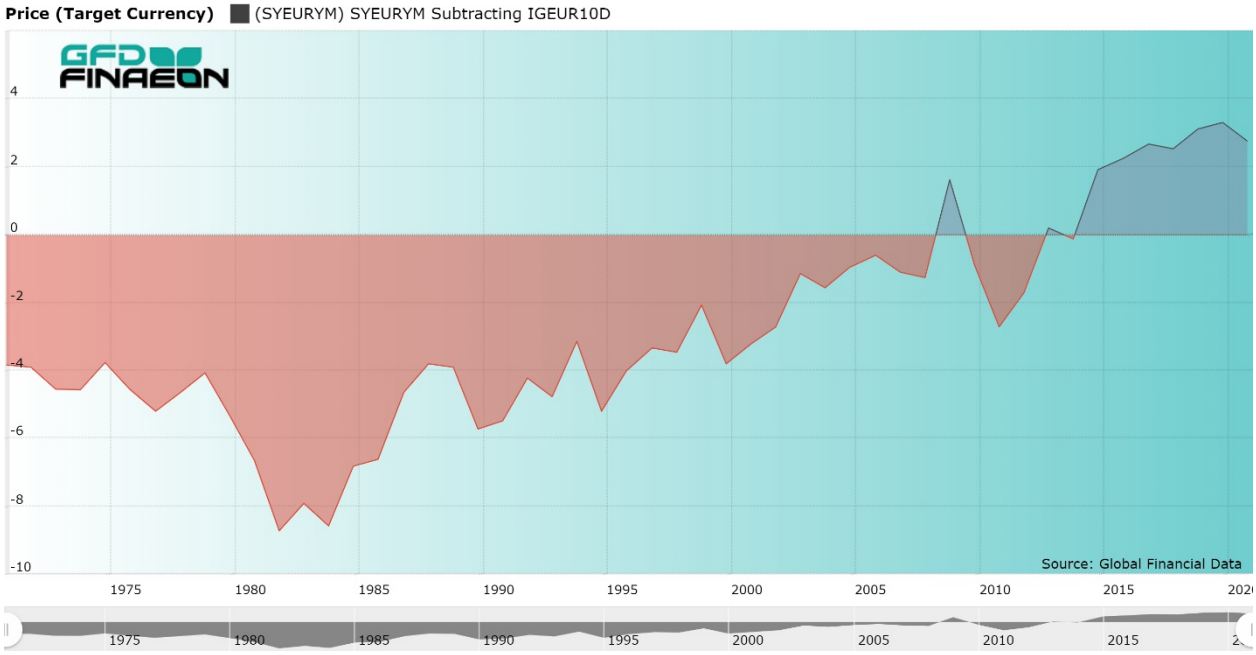


Figure 22.4. Europe Stock Dividend Yield Minus European 10-year Government Bond Yield

4. Bull and Bear Markets

Table 22.2 provides a history of bull and bear markets in Europe from 1602 until 2019. Data from the 1600s represents the ups and downs of only one company, the Dutch East India Co. Beginning in 1692, the data represents the performance of six companies and beginning in 1800, the data represents the performance of a number of different European stock markets.

The largest bear market occurred as a result of the South Sea Bubble when the market fell 89% over a 43-year period before a new bull market began. The 1792-1799 bear market declined 86% because the French East India Co., Dutch East India Co. and Dutch West India Co. all went bankrupt. The third worst decline occurred during the 2007-2009 bear market when the index declined 64%. There were four cases in the 1900s when European stocks declined by over 50% in value. Although there were only two bear markets in Europe in the 1800s, there were nine bear markets in the 1900s. Interestingly enough, there have already been five bear markets in Europe during the twenty-first century, and there are still 80 years to go!

The greatest bull market occurred in 1719 when stocks rose 721% as a result of the huge gains in the Mississippi Co. in France and the South Sea Bubble in England. Mississippi Co. stock rose from 250 livres to 10,000 livres, a 40-fold increase in price. South Sea Co. stock rose 10-fold from 100 Pounds to 1000 Pounds. Other stocks in London rose in price, though not as much as South Sea Co. stock. The second greatest bull market was the recovery from World War II between 1949 and 1973 when the market rose in value over 622%. This was a recovery from 30 years of poorly performing markets between the 1914 and 1949. The longest bull market occurred between the Revolutions of 1848 and the onset of World War I. The European stock market dis not suffer a bear market between 1848 and 1912, a 64-year period. European stocks rose 301% between 1982 and 1987 and 217% between 1990 and 1998.

Has the nature of the European market changed so there are more bear markets than there were in the past? European stocks may respond more quickly in the integrated, international equity markets that exist today. You can only look at how quickly global stock markets responded to the Covid crisis in 2020 to see that this is true. Expect more bear markets than in any century during the 2000s.

Date	Bear Loss	Date	Bull Gain
12/31/1602		04/30/1607	65.15
07/31/1607	-31.76	06/30/1614	82.24
12/31/1617	-45.39	11/30/1622	65.34
11/08/1625	-21.12	08/31/1649	301.56
08/31/1665	-44.37	08/31/1671	68.63
06/30/1672	-47.30	02/28/1688	93.26
10/31/1696	-46.52	08/31/1700	175.82
02/28/1701	-36.51	04/29/1704	106.66
03/31/1712	-39.95	12/31/1719	721.74
01/31/1762	-89.28	05/31/1768	85.53
10/31/1784	-37.35	03/31/1792	71.14
05/31/1797	-86.86	12/31/1809	102.36
05/31/1815	-20.83	8/31/1845	96.48
11/30/1848	-35.77	9/30/1912	222.27
11/30/1921	-54.65	8/31/1929	102.53

5/31/1932	-58.49	1/31/1937	143.02
6/30/1940	-41.98	7/31/1944	100.63
10/31/1949	-50.26	6/30/1973	622.23
9/30/1974	-45.90	10/31/1980	117.55
8/12/1982	-30.79	10/6/1987	301.82
11/11/1987	-27.74	7/31/1990	73.15
9/28/1990	-20.93	7/20/1998	217.69
10/5/1998	-26.18	3/24/2000	50.40
10/8/2002	-51.71	10/31/2007	193.63
3/9/2009	-64.47	5/2/2011	109.49
6/1/2012	-31.33	5/21/2015	53.45
6/27/2016	-25.53	1/25/2018	47.52
3/23/2020	-40.16		

Table 22.2. Europe Bull and Bear Markets, 1700 to 2019

5. Exchange Rate

Although the Euro was only introduced in 1999 as a common currency for eleven countries, now expanded to 19, there were various measures of a common European currency before 1999. The European Composite Unit was introduced in 1961 and set at par to the United States Dollar. It was replaced by the European Monetary Unit in 1970, the European Unit of Account in 1972, which was set equal to the SDR in 1974, and the European Currency Unit (ECU) in 1979. This was the standard against which European currencies were valued for the next 20 years. The Euro replaced the ECU in 1999 and Euro paper money was introduced in 2001. The Euro has now completely replaced the legacy currencies in each of the 19 countries that are members of the Euro. The Euro strengthened against the Dollar between 2001 and 2007, and has weakened against the Dollar since 2007. Currently this trend appears that it will continue.

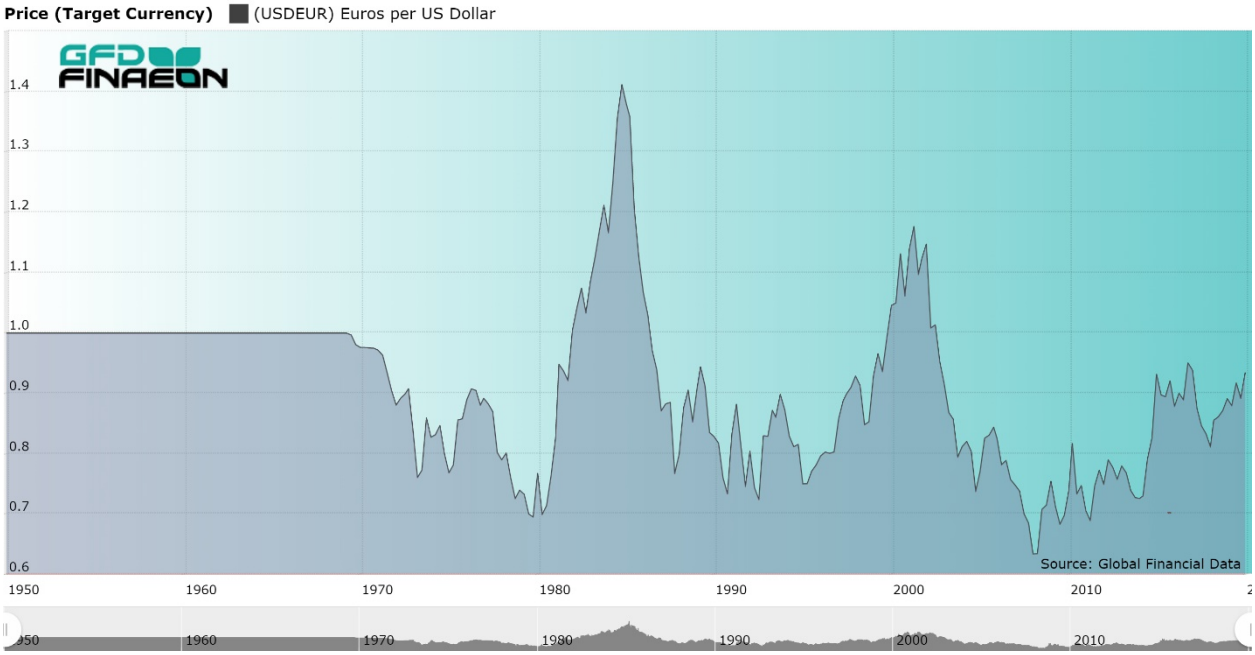


Figure 22.5. Euro-United States Dollar Exchange Rate, 1950 to 2019

6. Conclusion

If you compare the performance of stocks in Europe with those in the United States, you will find that European stocks have underperformed shares from the Anglo countries (United Kingdom, United States, Canada, Australia and New Zealand). Part of the reason for this is the fact that all of these countries, except the United Kingdom were able to avoid the destruction of World War I and II. The other reason is the fact that the Anglo countries are more market-oriented than continental European countries. Governments intervene in the economy more on continental Europe than in the Anglo countries, and are more inclined to nationalize industries. This was particularly true after World War II. Continental European countries also suffered from more inflation after both World Wars I and II which significantly reduced the returns to fixed-income investors.

European stocks bounced back after World War II during the 1950s, and performed well in the 1980s when Europe privatized many of the companies that had been nationalized during the intervening 30 years. European stocks have underperformed the United States during the twenty-first century, as has the rest of the world, as American companies have been able to more successfully seize on the spread of the internet around the world. Europe has very few information technology companies that have been successful. European biotech firms have done better, but still often lag behind America.

Europe has few prospects for high growth in the coming decade. Population growth is slow, and inflation is low. This means that bond yields and interest rates will remain close to zero providing little if any return to fixed-income investors in Europe. Slow growth and a large role for government means that there is little prospect for growth in Europe which will translate into low returns on equities. If the ERP remains positive, it will be mainly because returns on bonds and bills are so low. Unless there are political changes in Europe that encourage economic growth, Europe will probably continue to lag behind the United States.