Morningstar® Andex® Guide
Getting Started

Morningstar Markets Research
2016

Contents

The Morningstar® Andex® Chart highlights key investment principles such as risk and return, diversification, downturns and recoveries, life expectancy, and inflation, all concepts that help outline the benefits of a long-term investment approach.

Quick Facts

- U.S. small and large stocks have provided the highest return and largest increase in wealth over the past 66 and a half years.
- Canadian stocks have provided the highest return, but have also exhibited the highest risk among Canadian asset classes since 1950.
- The balanced portfolio provided a return comparable to that of Canadian stocks, but at a risk level closer to that of Canadian bonds since 1950.
- The worst 5-year return of the balanced portfolio since 1950 was positive.
- The most recent stock market decline (of 16.5%) occurred between April 2011 and September 2011. As of June 2016, the stock market has experienced a full recovery and grown an additional 14%.
- Over the past 10 years, investments in Treasury bills have barely been able to keep pace with inflation.
- Today, a 65-year old may need to plan for a 20-year (or more) retirement because life expectancies have increased since the 1950s.

Investment Growth

The 2016 Canadian Morningstar® Andex® Chart illustrates the growth of $100 invested in six major asset classes, a balanced portfolio, and inflation from January 1950 through June 2016. The line chart illustrates the ending wealth values and the compound annual returns over this time period. These values are summarized in the table below.

Exhibit 1 Growth of $100 (January 1950–June 2016)

	Ending Wealth Value ($)	Compound Annual Return (%)
U.S. Small Stocks (CAD)	535,027	13.8
U.S. Large Stocks (CAD)	142,595	11.5
S&P/TSX Composite	49,866	9.8
Balanced Portfolio (60% Equity, 40% Fixed Income)	42,805	9.5
FTSE TMX (formerly DEX) Long Bond	12,729	7.6
5-Year Guaranteed Investment Certificates	6,026	6.4
91-day Canada Treasury Bills	3,185	5.3
Inflation	1,058	3.6

Source: Morningstar, Inc.

The chart provides historical insight into the performance characteristics of various asset classes. U.S. small stocks provided the highest return (13.8%) and largest increase in wealth ($535,027) since 1950. As illustrated, fixed-income investments provided only a fraction of the growth provided by stocks. However, the higher returns achieved by stocks are associated with much greater risk, which can be identified by the volatility or fluctuation of the graph lines. The balanced portfolio provided a return comparable to that of Canadian stocks (9.5%), but at a risk level closer to that of Canadian bonds (10.2%) since 1950.

Compound Annual Returns by Decade

The most successful decade for U.S. large stocks was the 1990s (20.8%), while the worst-performing one happened during the 2000s (–4.0%). Canadian stocks, on the other hand, experienced the most successful decade in the 1950s (12.7%) and the worst performing one in the 2000s (5.6%). The best 10-year period for bonds was in the 1980s, with a compound annual return of 13.7%. During the 2000s, bonds provided the highest return, 7.8%. It is interesting to note that Treasury bills had the best decade in the 1980s with a return of 11.9%.

Percentage Returns

The Percentage Returns table displays the risk and return characteristics of the six major asset classes, balanced portfolio, inflation, and World ex-U.S. stocks over varying time periods. As expected in an efficient market, asset classes exhibiting higher returns are associated with higher risk.

Small stocks have had the highest return but have also exhibited the highest risk (24.5%) of the asset classes shown since 1950. Though stocks are often considered to be risky investments, long-term gains have been demonstrated to offset short-term losses for the long-term investor. As illustrated by the percentage returns table, all asset classes have seen positive returns over all time periods analyzed, except 1 year. Short-term losses can sometimes be expected, even for fixed income investments, though they are generally considered less risky than stocks. With a long investment horizon, however, losses could potentially be recouped.

All assets contain some degree of risk; however, some assets are considered more volatile (riskier) than others.

If you desire high potential long-term returns, you must be willing to accept the high levels of volatility associated with the types of asset classes that produce such returns.

Downturns and Recoveries

The chart highlights Canadian and U.S. recessions. The dark gray shaded areas represent Canadian recessions, and the light blue bars at the top represent U.S. recessions as per the National Bureau of Economic Research. There have been 6 recessions (U.S. and Canada) since 1950. The S&P/TSX lost 43% of its value during the recent global financial crisis. However, history reveals that recoveries usually follow contractions. This is evident from the rebound in asset class returns during 1967, 1982, 1991, and 2003. A disciplined investment approach is still the best strategy for handling market downturns. Staying focused on a long-term investment plan may enable investors to participate in recoveries.

Gross Domestic Product

GDP measures the value of all final goods and services produced within a nation in a given year. Foreign direct investments and exports are often considered the two major drivers of economic growth. Because GDP measures a nation's total output, it can provide a snapshot of a country's economic condition: A rising GDP number indicates economic expansion. On the other hand, two or more consecutive quarters of negative GDP signal a Canadian recession, as represented by the dark gray shaded areas in the background.

The bar chart illustrates quarterly GDP numbers since 1950. As illustrated, in the early 1980s Canada experienced 6 consecutive quarters of negative GDP. Following the recession in the early 1990s, Canada has experienced several quarters of positive GDP. Recently, however, this growth has slowed down, as many countries have been hit by the 2007–2009 global recession, Canada included. The latest data reveals a positive GDP number for the first quarter of 2016 and a negative estimate for the second quarter.

Gold and Oil

It is also interesting to look at commodity prices, such as gold and oil, under different market conditions. Gold, for example, is considered somewhat of a safe investment during poor market conditions. This is evident from the rise in prices during the recessionary periods defined by NBER. Gold prices reached a high of $1,895 in September 2011, dropped to a low of $1,049 in December 2015, then climbed back up to $1,325. Investors have the option of owning stocks belonging to a firm that derives its revenue from the sale of such physical commodities.

The price of oil has been climbing during the 2000–2009 decade due to multiple interacting factors: political, economic, global. The BP oil spill in 2010 added more uncertainty to an already volatile market. Global oil production appears to have stagnated since 2005, and alternative energy options are not capable of producing enough output yet to cover world oil consumption. In addition, attempts to reduce this consumption have been only moderately successful.

Expansions, Contractions and Recoveries

There have been 18 market contractions (defined by a time period when the stock market value declined from its peak by 10% or more) since 1950. These declines happen from time to time and last for varying time periods. Following a contraction is usually a period of recovery, represented as the number of months from the bottom of a contraction to its previous peak.

An expansion measures the subsequent performance of the index from the recovery until it reaches the next peak level before another 10% decline. Since the early 2000s, contractions and recoveries have played a dominant role, giving the investor a sense of a sluggish stock market. A market contraction started in August 2000, followed by a 34-month recovery, an expansion, and a contraction again in May 2008. No expansion this time, and another contraction right away, in March 2011. The market recovered in October 2013 and expanded by 14% since then.

A disciplined investment approach is still the best strategy for handling market downturns.

Staying focused on a long-term investment plan may enable investors to participate in recoveries.

Inflation

Inflation (measured by the Consumer Price Index) is commonly defined as the rise in prices for goods and services over time. Inflation, the rise in prices, erodes each dollar you earn on your investments. By not considering the negative impact inflation has on investment returns, you could run the risk of overestimating your future purchasing power. Take for example the case of the stamp. In the 1950s, a first class stamp cost about 4 cents; today, the same stamp costs 85 cents.

In Canada, high inflationary periods were experienced during the 1970s–80s, owing to the oil crises. Oil rose to $38.34 per barrel in 1981. Inflation during this period was over 10%. More recently, inflation has been relatively low, in the 2% to 3% range. Over long time horizons, such as a 30-year retirement, however, an annual increase in prices of 3% can have a tremendous impact on investors’ financial situations. Investors planning for retirement would be wise to plan for an inflation rate higher than 3%.

Prime Interest Rate

Economic ups and downs affect the ability of banks, companies, and consumers to spend money, as well as to provide goods and services. For example, when inflation is high, the Bank of Canada may act by increasing the prime rate, making it more expensive to borrow money. During the mid-to-late 1970s and early 1980s, inflation increased significantly and unemployment was high. This is evident during the early 1980s when the prime rate reached an all-time high of 22.75%. Likewise, when inflation is low, the Bank of Canada may decrease the prime rate. Changes in the prime rate help boost the economy or slow it down.

Wages and Unemployment

Canada experienced economic recessions in the early 1980s and 1990s. This led to high unemployment rates of 12.7% in 1984 and 11.6% in 1992. Unemployment is currently at 6.8% as of June 2016. In the 1960s, minimum wage rates were $1.00/hr. Currently, the minimum wage rate in Canada (Ontario) is $11.00/hr.

Tax Rates

It is important to take tax consequences into account when making an investment decision, especially for investors in higher tax brackets. Income taxes can create a significant difference between your before-tax and after-tax return, so it is important to be aware of their potential impact. In the early 1970s, Ontario's top marginal tax rate dropped from 82.4% to 59.5%. In 2016, the top marginal tax rate increased from 49.5% to 53.5%.

Life Expectancy

Longevity risk is the possibility that a person will outlive his or her retirement savings. Accounting for longevity risk in retirement planning is more important than ever because people today are living significantly longer than prior generations, due to advances in medicine, diet, and technology. The chart lists the life expectancy for both males and females since 1950. The average life expectancy in the 1950s was 66.5 years for males and 71 years for females. As of 2009, the average life expectancy increased to 78.8 years for males and 83.3 years for females. As people live longer, they should plan for their investments to last longer as well.

RRSP (Registered Retired Savings Plan) and TFSA (Tax-Free Savings Account)

An RRSP is an investment account designed primarily for saving towards retirement. As retirement savings vehicles, regulated by the Canadian government, RRSPs have special tax benefits. The annual RRSP contribution can reduce the amount of income tax paid in a given year and the money put away can have several years of tax-deferred growth potential. In the late 1950s, the RRSP started with an annual limit of $2,500. This number has grown over the years. Most recently, the annual RRSP limit was set at $25,370 for 2016.

A TFSA, introduced in 2009, is a registered general-purpose savings account that allows investment earnings on contributions to be tax-exempt. Unlike the RRSP, annual TFSA contributions are not tax-deductible and will not reduce the amount of income tax paid in a given year. The annual TFSA dollar limit for 2016 is $5,500.

Retirees face numerous risks in retirement, most importantly longevity risk, inflation risk, and market volatility risk.

Longevity risk is perhaps one of the biggest risks that investors will face as they enter retirement.

Canadian Dollar versus U.S. Dollar

Currency translation can affect the returns of a foreign security because foreign exchange rates are constantly fluctuating with changes in the supply and demand of each country's currency. The graph labelled Canadian Dollar in U.S. dollars illustrates the relationship between the two currencies. As illustrated, the Canadian dollar fell against its American counterpart for most of the 1990s, which may be attributed to the technological boom in the United States during this period. In January 2002, the Canadian dollar hit a low relative to the U.S. dollar at $0.6202. The Canadian dollar's value rose sharply in 2007 due to the continued strength of the Canadian economy (as opposed to the U.S. economy, which began to weaken around that time). During this time the Canadian dollar appreciated to $1.0852 relative to the U.S. dollar. For investors, it is important to understand that currency fluctuations also affect investments. Foreign currency changes affect returns achieved by local investors and are often different from the returns that Canadian investors achieve—even though they are both investing in the same security.

Rolling Period Risk and Return

The "Rolling Period Risk and Return" chart examines how rates of return for three asset classes and a balanced portfolio have varied over different holding periods. In the past, longer holding periods have generally resulted in a lower likelihood of loss.

Quick Facts

- Investing for the long term reduces probability of loss: Over 559 20-year rolling periods since 1950, none of the returns for Canadian stocks, U.S. stocks, Canadian bonds, and the balanced portfolio were negative.
- The worst return of the balanced portfolio since 1950 was positive over 5-year, 10-year, and 20-year holding periods.
- Risk (as illustrated by the range of returns) varies across asset classes, as well as across holding periods. The highest risk is seen in holding stocks over shorter time periods. This diminishes with longer holding periods.
- Even when considering 1-year holding periods, the balanced portfolio would have posted a gain 81% of the time since 1950.

Rolling periods are a series of overlapping, consecutive periods of returns (12 months, 36 months, etc.). For example, when examining 12-month rolling periods, the first rolling period is January 1950–December 1950, the second is February 1950–January 1951, and so on. An investor holding Canadian stocks for just one year has historically made money 73.3% of the time; that's 577 of the 787 rolling 1-year periods since 1950. Of all those 1-year periods, the worst for Canadian stocks ended on June 30, 1982. That year saw Canadian stocks turn an initial $100 investment into $61—a loss of 39.2%. The best year for Canadian stocks began immediately thereafter, ending on June 30, 1983. That year saw Canadian stocks turn an initial $100 investment into $187—a gain of 86.9%.

By contrast, buying and holding Canadian stocks for a full 20 years, starting at any time since 1950, would have produced positive returns (i.e. no losses) in each of the 559 rolling 20-year periods. October 31, 1997 marked the end of the best 20-year period since 1950. An initial $100 invested in Canadian stocks on November 1, 1977 grew to $1,408 by October 31, 1997—a compound annual return of 14.1% per year. The worst 20-year period extended from June 1, 1957 through May 31, 1977, during which a $100 initial investment grew at a rate of 6.2% per year for an ending value of $334.

Risk (and the probability to lose money) tends to decrease over time. Risk is depicted in the chart by how wide the ranges of return are. These ranges of return become less and less wide for all asset classes and the portfolio as the holding period increases from one year to 20 years. Over 20-year holding periods, in fact, returns for all asset classes were positive.

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