



Risk Management

The Key To Successful Investing

Raymond Kerzérho, CFA, MBA

François Doyon La Rochelle, CFA



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Introduction

When it comes to investments, too many individuals and professionals focus on returns and pay little attention to risk. Read the latest mutual fund reports in the newspaper and you will notice that risk is rarely mentioned. In our opinion, ignoring risk is one of the worst mistakes that an investor can make.

The concept of risk can be difficult to grasp. Though it is generally understood that specific investment activities have varying levels of potential return and risk, you could ask ten people to define risk and receive ten very different answers. The reason?

Individuals naturally equate risk with their personal risk tolerance. In investment terms, this means the ability of investors to financially and emotionally handle potential declines in the value of their portfolios.

As declines in a portfolio can be temporary, longer term or permanent, we propose a simple definition of risk by dividing it into two key categories - volatility risk and capital loss risk.

Volatility risk

A temporary decline in wealth due to market cycles and random economic events that is likely to be recouped within 2 to 3 years.

Capital loss risk

A loss of capital that requires the investor to wait more than 3 years before recovering their initial investment.

The four triggers of capital loss

From a historical perspective, there are four major factors that can trigger capital loss in an investment portfolio.

These are:

1. Concentration in too few securities or sectors;
2. High inflation;
3. Deep recessions;
4. War and political turmoil.

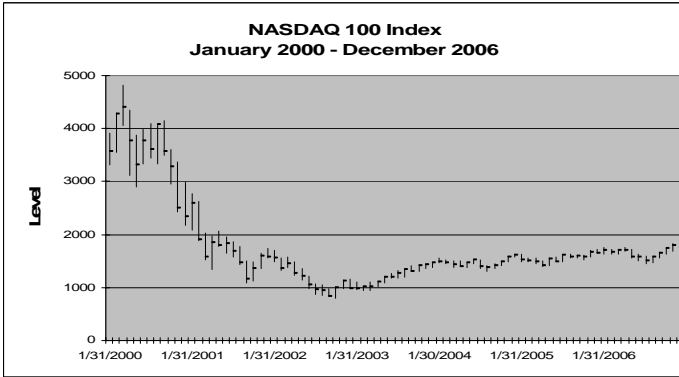
1. Concentration in too few securities or sectors

To highlight the potential effect of this risky strategy, investors only need to recall the capital losses that accompanied the bursting of the last technology bubble. In the late 1990's, Internet and technology stocks appreciated to a level where investors were paying exorbitant prices in relation to the earnings of companies, resulting in extremely high price/earning (P/E) multiples.

The dramatically rising price of these securities prompted some investors to allocate more and more funds to the sector in fear of missing the next rising star. When the NASDAQ 100 index peaked on March 27, 2000 at a level of 4704, the P/E ratio on the index was 165.4 - more than 10 times the average for US equities over the last 100 years (average P/E of 15).

As of December 31, 2006, the NASDAQ 100 index traded at 1509 - a loss of 68% for those who held the index for the period. Many investors realize that it might take decades before the NASDAQ returns to its historical peak. Though this example highlights only one speculative period that occurred, similar periods emerge every 30 years or so as history unfortunately repeats itself.

Graph 1: NASDAQ 100 Index



Source : Bloomberg

2. High Inflation

For a typical example of how inflation can impact investors, look at the United Kingdom between 1950 and 1980. Inflation soared from less than 5% to peak at 25% in 1975. The effect on long Treasury bonds was startling. Despite promising a fixed cash flow for up to twenty years, the value of UK Treasury bonds was significantly reduced by the decline in the purchasing power of the pound. Although often labelled risk-free, one pound invested in these securities in 1950 had lost more than 50% of its value by 1980, even with the compounding of interest².

3. Deep recessions

The Great Depression of the 1930's remains one of the best illustrations of the risk associated with deep recessions. The bear market that prevailed during this period is often attributed to the 1929 stock market crash. The economic depression that followed brought sky-high unemployment and a plummeting demand for goods and services as corporate profits vanished throughout the United States and many other countries.

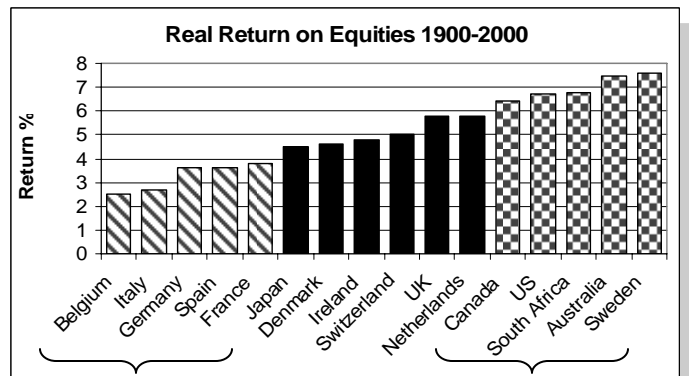
Although diversified, the S&P500 index declined by a cumulative 80% from 1930 to 1932. US stocks did not enjoy a sustained bull market again until 1942. Conversely, Treasury bonds did great in the 1930-1942 period, with a compound return of 4% net of inflation.

4. War and political turmoil

The risk related to war was well documented in a comprehensive study of international capital market returns by three professors from the London Business School. Elroy Dimson, Paul Marsh and Mike Staunton⁽²⁾ reviewed equity returns for 16 countries from 1900 to 2000. Their study confirmed that in the 20th century, the five countries with the highest inflation-adjusted equity returns had not experienced a war on their territory. These were Sweden (7.6%), Australia (7.5%), South Africa (6.8%), United States (6.7%) and Canada (6.4%).

In contrast, the five countries with the lowest real returns had all been afflicted by war: Belgium (2.5%), Italy (2.7%), Germany (3.6%), Spain (3.6%) and France (3.8%). Others had fared even worse, such as investors who held Russian stocks before the 1917 revolution and lost everything.

Graph 2: Real Return on Equities



War-torn countries

Non-war-torn countries

Source : Dimson, Marsh, Staunton

How effective risk management benefits investors

The financial services industry often promotes the idea that investing is almost risk free if investors hold securities for the long term. Supported by history and examples like those listed before, we beg to differ.

Concentrated positions and the lack of a rigorous **asset class strategy** can expose portfolios to sustained, large capital losses - even if investors hold the positions for a long time. Effective **risk management** reduces these potential losses.

1. To manage risk, start with the fundamentals

The road to effectively managing risk starts with certain fundamental concepts that have been thoroughly established by financial economists. Some types of risk are compensated for by higher expected returns, while others are not (see table 1 below). Certain asset classes (such as stocks and bonds) are much riskier than others.

Additionally, asset class returns do not move simultaneously. Respecting these factors, the goal of investors should be to combine assets in a way that delivers the maximum expected return given their tolerance for risk. We will call this process "**structured diversification**".

Table 1 - Types of Investment Risk

Compensated by Markets	Not Compensated by Markets
Bond maturity risk	Stock selection risk
Credit risk	Sector concentration risk
General stock market risk	Market-timing risk
Small cap equity risk	
Value equity risk	

Source: PWL

2. Structured diversification: Making the law of great numbers work for investors

By reviewing historical data on capital markets, investors may be able to determine the long-term return and associated risk that they can reasonably expect when investing in any given asset class. However, most investors are more concerned with uncertainty than expectations. The **law of great numbers** states that investors can reduce the uncertainty surrounding expected return by increasing the number of assets in their portfolios.

For example, if the average expected return on large cap stocks is 8%, investors may enjoy an 8% return if they buy only one stock. But with all of their eggs in one basket, they may experience a very wide range of other possible outcomes, from a return of -100% in the case of bankruptcy to +100% or more should the company exceed the level of success anticipated by the market.

Alternatively, by buying an S&P500 index fund (holding 500 US stocks), the range of outcomes is effectively narrowed, as all 500 companies will not go bankrupt or double in stock price at the same time. The average expected return remains at 8%, but the overall risk to achieve that return has now drastically reduced. If the portfolio is further diversified by adding International and Canadian indices, the average expected return will still be 8% but risk will further decrease and the portfolio will increase in stability.

Also, allocating a percentage of assets to lower-risk asset classes that tend to perform well during recessions (such as investment-grade bonds), protects investment portfolios against capital loss risk. Asset classes such as real return bonds and real estate investment trusts (REITs) make portfolios more robust due to their propensity to retain value in high inflation environments. And by diversifying portfolios internationally, investors can limit their exposure to capital losses resulting from war or political turmoil in a specific region of the world.

A simplified example of structured diversification

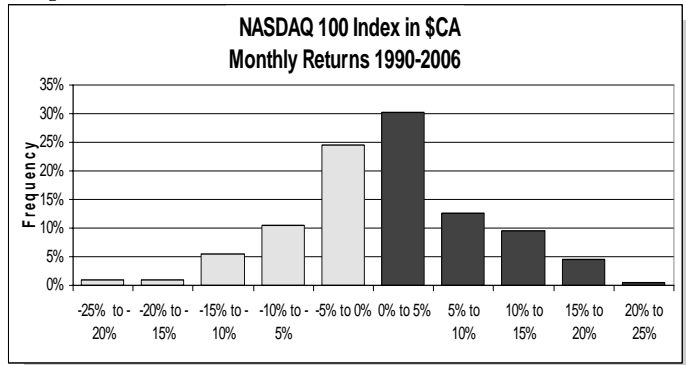
Graphs 3, 4, 5 and 6 illustrate the benefits of structured diversification. Returns are shown in a frequency distribution. In percentage form, each bar depicts how often monthly returns occurred within each range (0% to 5%, 5% to 10%, and so on). Negative returns are depicted by the light-coloured bars and positive return ranges are illustrated by the dark bars. The wider the distribution of returns, the greater is their uncertainty.

Graph 3 depicts the distribution of the tech-heavy NASDAQ 100 Index. Graph 4 displays the distribution of the S&P/TSX Composite Index of Canadian stocks. Graph 5 illustrates the distribution of a widely diversified portfolio made up of Canadian, US and international large cap stocks. Finally, graph 6 shows the distribution of a diversified portfolio made up of Canadian, US and international large cap stocks plus bonds and REITs.

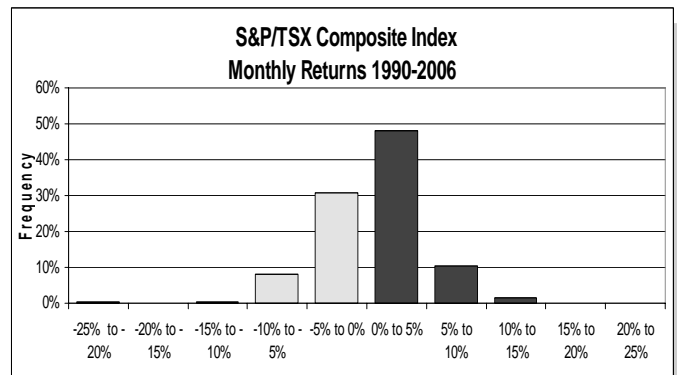
As we move down (from graph 3 to 6) to a more diversified portfolio, the distribution of returns narrows down, reducing investment risk. These four graphs clearly show that potential downside is dramatically reduced with each expansion in the diversification of the portfolio (from a single sector index, to a broad-based Canadian index to an even broader-based portfolio composed of stocks, bonds and REITs).

If we compare graph 3 to graph 6, the NASDAQ 100 index lost 5% or more on average 2 months per year (18% cumulative frequency), compared with one month every 18 years for the fully diversified portfolio. Ultimately, increasing the diversification of assets within a portfolio leads to higher risk-adjusted returns.

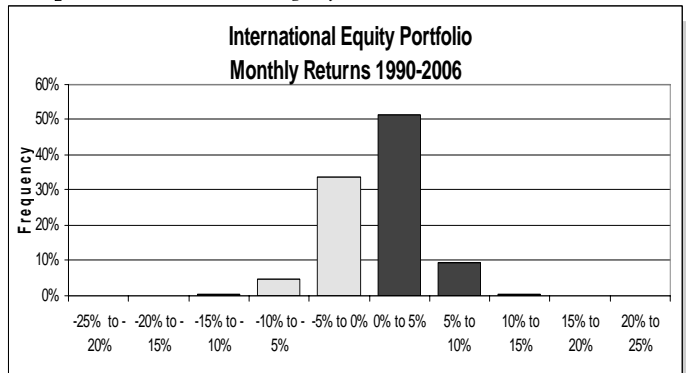
Graph 3 - NASDAQ 100 Index in Canadian Dollars



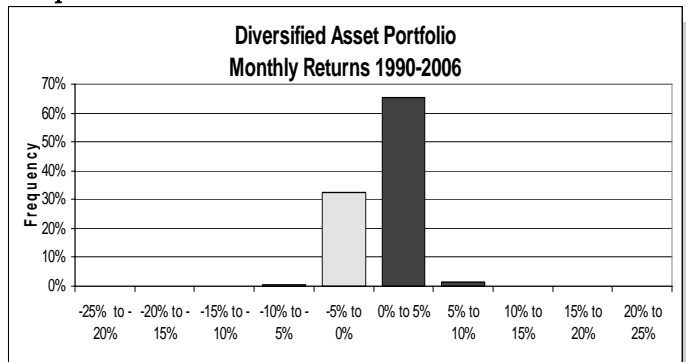
Graph 4 - S&P / TSX Composite Index



Graph 5 - International Equity Portfolio



Graph 6 - Diversified Asset Portfolio



Source: Ibbotson Associates

Capital loss risk is measurable

We have seen that risk management, through structured diversification, reduces effectively the risk of the portfolio and protects the investor's capital. But there is more. Since this methodology is based on a statistical approach, we are able to gauge the potential return and risk for any given asset allocation strategy. The expected return and **standard deviation** (a statistical measure of volatility) can be inferred from capital market history. Starting with this information, it is fairly straightforward to estimate the potential frequency of losing money and the potential severity of these losses. For example, we have run simulations with a balanced portfolio made of: 40% fixed-income securities, 10% real estate investment trusts and 50% globally diversified equities. Based on a 7.7% assumption for expected return and 8.1% for expected standard deviation, our model concludes that the portfolio will likely lose money 17% of the time, or once every 6 years. Our simulations also led us to expect, at a 1% probability rate, our worst loss in any given year will exceed 10%. Similar results are displayed for an income and an all-equity portfolio in table 2 below.

Table 2 - Risk Analysis for an Income, a Balanced and an Equity portfolio

	100% Income Portfolio	Balanced Portfolio	100% Equity Portfolio
Expected return	6.0%	7.7%	9.4%
Expected standard deviation	5.1%	8.1%	14.0%
Frequency of negative years	12% (1/8 years)	17% (1/6 years)	27% (1/4 years)
Severity of worst year at a 1% confidence level	-5%	-10%	-20%

Source: PWL

It should be understood that the previous numbers are only estimates, based on a number of assumptions. But at least they carry the advantage of providing the investor with guidance in regards to strategic asset allocation. If an all-equity investor is comfortable with the expected return (9.4%) and standard deviation (14%) assumptions described above, he must be ready to stomach losing money once every four years, or choose a less risky strategy. The investor must also be able to handle a 1% probability of losing 20% and more in a given year or change strategy.

Risk is unavoidable, but it is manageable.

Zero risk is a poor strategy if investors want to achieve their financial goals. A very low risk portfolio - like one composed completely of Treasury bills - would likely provide almost no return after taxes and inflation. When it comes to attractive returns, uncertainty is certain.

We believe that the best method to manage portfolio risk is structured diversification. By applying the lessons from 100 years of capital market history, both volatility and capital loss risks can be reduced efficiently. The advantage of this structured approach is that it clarifies the possible outcomes of the portfolio. This process allows investors to be in control of their portfolio and to plan effectively their financial futures.

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Key concepts

Asset Class Strategy

Capital Loss Risk

Frequency Distribution

Law of Great Numbers

Risk-Adjusted Return

Risk Management

Standard Deviation

Structured Diversification

Volatility Risk

About the authors

Raymond Kerzérho is Director of Research at PWL since 2001. He has spent a large part of his career managing bond and derivative product portfolios for pension funds, mutual funds and for a major bank. He holds degrees from HEC Montreal (BBA) and Laval University (MBA) and has earned the CFA (Chartered Financial Analyst) designation.

François Doyon La Rochelle is a Financial Analyst and Associate Portfolio Manager at PWL since 2001. Prior to joining PWL, François has held various investment related positions in a leading Canadian wealth management firm. François holds a Bachelor in Business Administration (BBA) from the Université du Québec en Outaouais and has earned the CFA (Chartered Financial Analyst) designation.

About PWL

With offices in Montreal, Ottawa, Rivière-du-Loup and Toronto and a combined staff of more than 40 financial professionals, Parkyn, Wermenlinger, Layton Capital Inc. (PWL) offers integrated wealth management solutions for a successful investment experience.

For more information, please visit: www.pwlcapital.com

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Our Offices

Montreal

215 Redfern Avenue, Suite 200
Westmount, Quebec H3Z 3L5
Telephone: 514-875-7566
Toll free: 1-800-343-7566
Fax: 514-875-9611
capital@pwlcapital.com

Ottawa

265 Carling Avenue, Suite 100
Ottawa, Ontario K1S 2E1
Telephone: 613-237-5544
Toll free: 1-800-230-5544
Fax: 613-237-5949
ottawa@pwlcapital.com

Rivière-du-Loup

494 rue Lafontaine, PO Box 397
Rivière-du-Loup, Quebec G5R 3Y9
Telephone: 418-862-5643
Toll free: 1-800-774-7418
Fax: 418-862-3585
rdl@pwlcapital.com

Toronto

3, Church Street, Suite 601
Toronto (Ontario) M5E 1M2
Telephone: 416-203-0067
Toll free: 1-866-242-0203
Fax: 416-203-0544
toronto@pwlcapital.com

www.pwlcapital.com