



Investment Foundation Series II

Three Fundamentals of Investing

After creating a plan (see Investment Foundation Series I), one Tactic/Strategy to reach your goals is investing in Shares or a Managed fund. There are Three Fundamentals of Share Investing with evidence-based research.

The [Theory of Investing](#), The [History of Investing](#), and The [Psychology of Investing](#).



Theory Of Investing

There are four main investment categories called “asset” classes¹ in terms of Share investing :

Cash: This is a fixed or on-call investment that receives interest in a term deposit or savings account. The advantage is this is usually safe, and there is no loss of your money. The disadvantage is the interest received (return), is usually lower than other investments, and inflation.

Bonds: A company/government issues a bond to the investor for a fixed interest (a coupon) amount to the holder for a specific period which can be resold to other investors. The value of bonds changes depending on when they mature or current interest rates. The easiest way to understand this concept is it is like a fixed-term deposit that you can resell to other

¹ There are other categories such as commodities,

investors. The advantage is they earn more return compared to cash; the disadvantage is their value can fluctuate.

Shares: Are a part ownership of a company that can be bought and sold on the sharemarket. The advantage is that this has the highest return in the long term; the disadvantage is share price can go up and down a lot. This price movement is called volatility.

Property: Listed property is commercial property companies on the sharemarket that hold and manage commercial property. The advantage is that it is diversified away from other companies, and the return is higher than cash/bonds/term deposits.

The Cash and Bonds are called Fixed Interest (or Income) assets, and the Shares and Property are called Growth assets. There are general and individual risk factors for the above assets particularly, to share investing.

Risk Evaluation/Reduction is through General & Individual Risk factors.

General Risk:

1. **Inflation:** Inflation is the average rise of prices over time. The risk of doing nothing is that inflation erodes your money, so it costs you money to buy the same amount of goods (Figure 1). Thus in 1967, \$1000 worth of goods cost \$19,333 in 2018.

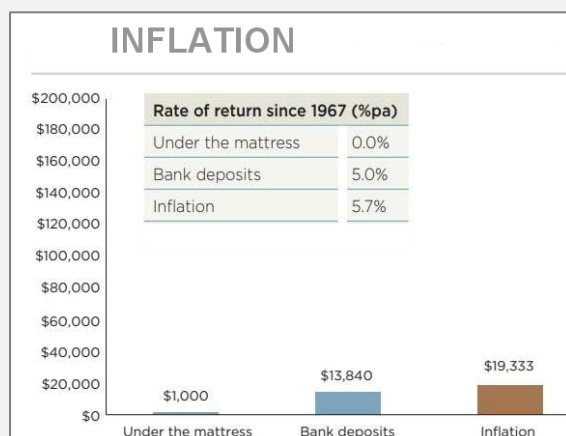


FIGURE 1

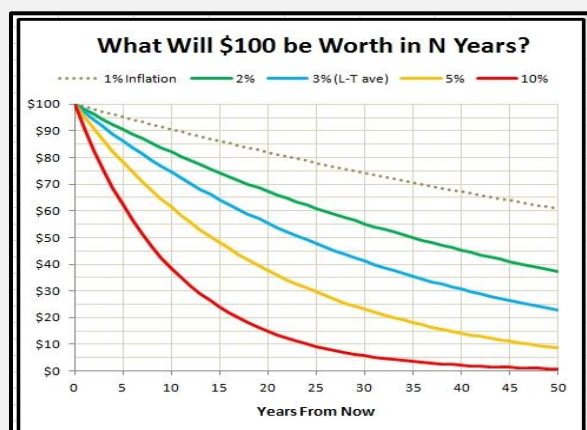


FIGURE 2

Another way of demonstrating this is the value of money decreasing over time, so \$100 with 2% inflation will be worth \$82 in 10 years, \$67 in 20 years and \$55 in 30 years (Figure 2).

The Reserve bank has a mandate to keep inflation between 1-3 %. Inflation is the most significant risk factor to the long term preservation of money/wealth.

2. **Risk and Reward:** Different asset classes have different risk and returns. Cash has less risk, thus having less investment returns compared to shares (Figure 3.). In general, there is risk involved with all forms of investment. Either it is the risk of earning low returns (below inflation) but having the 'safety' of the investment or, earning higher returns which comes with the 'volatility' of the investment.

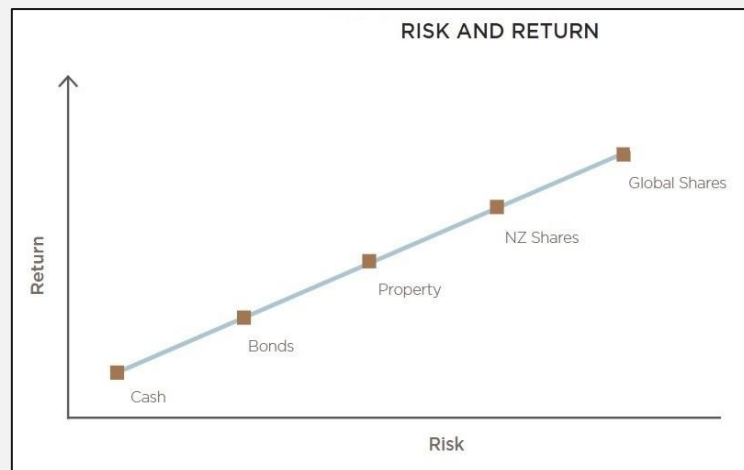


FIGURE 3

3. **Due to higher risk**, shares have higher expected investment returns over time (Figure 4). The Vanguard Index chart (Australian focused) shows that shares have higher returns due to the risk involved with investing in companies.

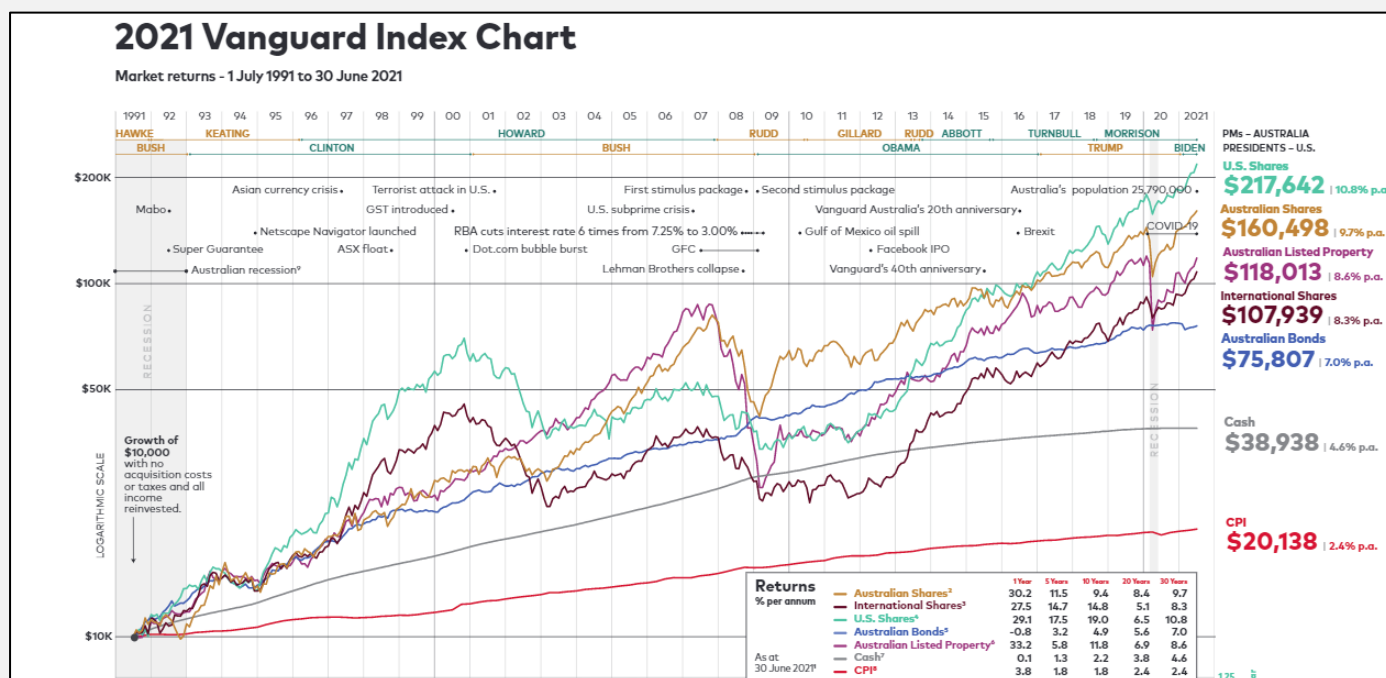


FIGURE 4

Additionally, long term returns are due to compounding returns. So if you continually hold a group of shares and reinvest your dividends² back into the sharemarket, this accelerates your investment, i.e. “earnings on earnings” So from the above example, the U.S. Share returns were \$10,000 to \$217,642, thus growing 2076% over 30 years (10.8% annual compounding returns³).

4. General Risk can be reduced by:

A. Time Horizon:

- i. *Long term versus Short term*- Shares will be volatile in the short term, yet in the long term will have higher returns. As shown in Figures. 4 & 5, there are many minor ups and downs(called volatility) and major upwards or downwards trends (called market cycles). See History of Sharemarkets.

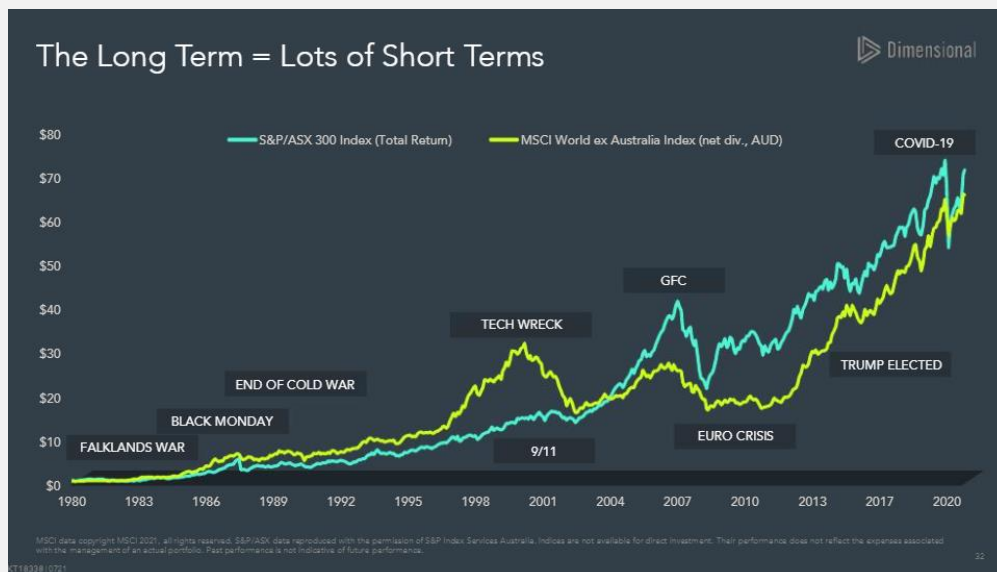


FIGURE 5

² The income received from shares

³ There is more nuances to compounding returns due to sequence of return in the sharemarket.-
(<https://tinyurl.com/cje5m953>)

- ii. *Odds*: The time horizon dictates the probability of losing money.

Figure 6 shows the odds of losing money on N.Z. top 50 shares (NZX-50- Left chart) and U.S. top 500 shares(S&P 500-Right chart) over the long term, illustrating that the longer the time horizon, the less probability of losing money



FIGURE 6

Furthermore, this concept reflects the range of share returns over time. The range of outcomes is wide with a shorter time frame, yet becomes narrower and more positive over a longer time horizon, (Figure 7). For example, the S&P 500 return range of -17% to 36% for five years yet has a range of 1.9% to 18.3% in twenty years.

Average Return for the NZX50 1993-2019			S&P 500 Annual Returns: 1926-2020			
Period	Average Return	Range of Returns	5 Years	10 Years	20 Years	30 Years
Average 1 year period	8.83 %	-32.80 % to 39.80 %	Best 36.1%	21.4%	18.3%	14.8%
Average 5 year period	7.36 %	-3.01 % to 16.12 %	Worst -17.4%	-4.9%	1.9%	7.8%
Average 10 year period	7.09 %	1.80 % to 13.94 %	Average 10.1%	10.4%	10.9%	11.2%
Average 20 year period	7.14 %	5.06 % to 9.74 %	Source: Dimensional Fund Advisors			

FIGURE 7

B. Diversification (not having all 'eggs in one basket):

Holding different asset classes (cash, bonds, property, shares) or sub-classes within assets (e.g. within shares: Australasian Shares, Global shares, Emerging Market shares); will reduce volatility (risk).

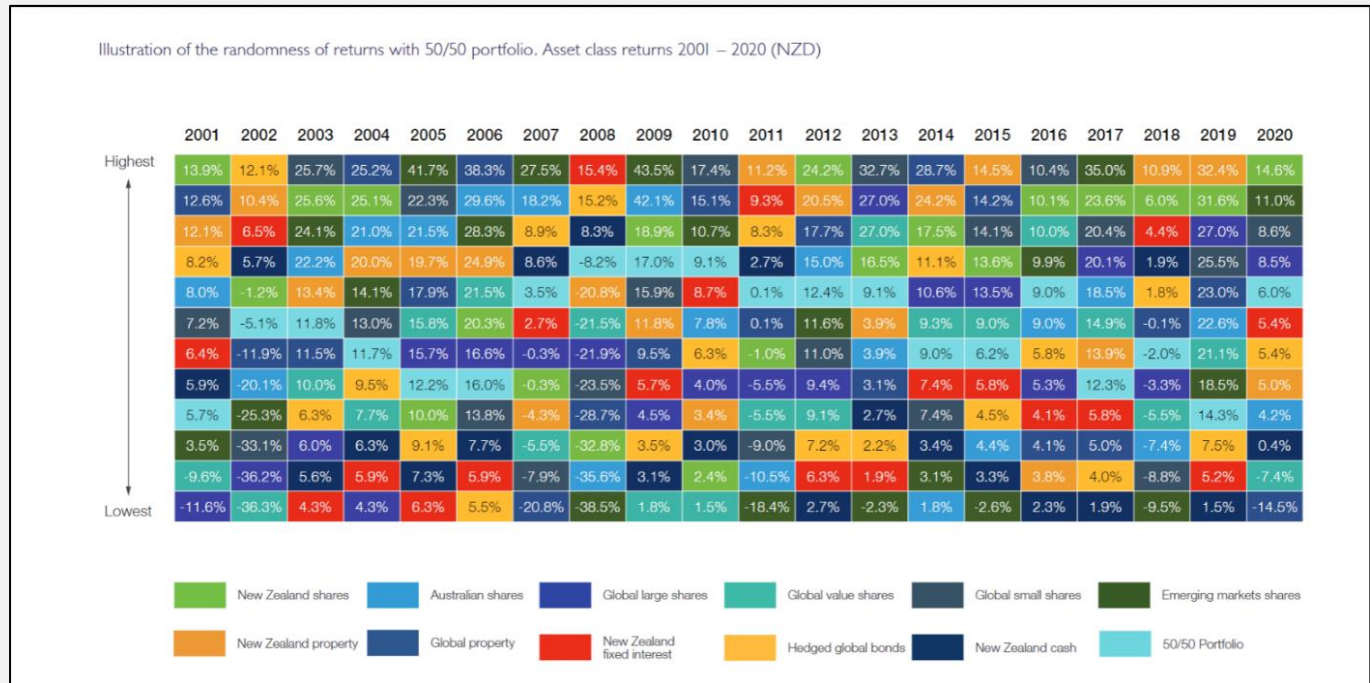


Exhibit 1

As illustrated in Exhibit 1, over the last twenty years, there is no pattern to which asset classes do well from one year to the next.

2001 – 2020: Ranking of equity returns of developed markets



Exhibit 2

Similarly, if we look at how different countries did in the last 20 years (Exhibit 2), there is no pattern with different shares from different countries. So holding different assets/subclasses will reduce short term volatility. Diversification is an enormous advantage with Managed Funds. (see later).

These general risk and reduction strategies give the investor a basis for share investing. As well, an individual risk assessment is required for the investor.

Individual Risk:

A personalised Risk profile assessment is required to define your risk tolerance to your investments. This assessment involves the ability, the willingness and the need to take risks.

Ability to take risk:

The ability to take risk considers the investment horizon, income stability, liquidity need and possible contingency plans.

- The longer your investment horizon, the greater you have to take risks. Thus a twenty-year time horizon can indicate more investments in shares than a five-year horizon (see Odds and Type of fund)
- A stable employment/income can lend itself to being about to take more risk. For example, a tenured professor can take more risk than a contracted associate dentist.

- Liquidity or cash requirements is when an unexpected event occurs(e.g. Covid). Do you have the ability not to touch your investments? This is why it is recommended to have an emergency fund of 3-6 months.
- Do you have Contingency plans if your investments are severely down? Some examples are delaying purchasing your house, decreasing expenses, delaying retirement, working part-time, etc.

Willingness to take risks.

How much risk are you willing to take to reach your goal. How much can you tolerate to continue to stay in your investment? This concept is called the “stomach acid” or “sleep” test. Will you be able to stay with your investment when the sharemarket can crash and lose up to ½ its value (e.g. 1987-1988, 2000- 2002, 2008-2009)? Your previous behaviour of investing is the best assessment of your willingness. How did you go when the market dropped during March 2020 due to Covid-19? If you did worry, would it be ideal to reduce some risk? Furthermore, this is a perception of risk at a specific time. For example, tolerance to risk would have been viewed differently in Covid times compared to pre-Covid times.

Need to take risk

How much risk do you need to take to reach your objective? A 25-year-old with no investments usually requires a higher risk need for retirement than a pre-retiree with a stable portfolio. If the need to take risk is not required, why take the risk? Yet taking no risk can mean that your money is not keeping up with inflation(see [inflation](#))

In summary, combining the general risk with an individual risk profile matches the investor to their investment.

History Of Sharemarkets

Markets go up and down and follow natural market cycles. A 'bull' market is when the sharemarket is on the rise (buying occurs), and a 'bear' market is the sharemarket trending down (selling occurs). The sharemarket can keep on going up extraordinary (a “bubble”) or suddenly go down (a “crash”). As an investor, these are normal and be expected ([Figure 4](#)) yet, it is human nature to be surprised when they occur (see *Psychology of investing*). The below are some examples of bubbles/crashes.

Dot.com boom/crash(2000)- The technology bubble was due to new technology of the “internet”, which caused considerable investments in these start-up internet companies leading to the NASDAQ⁴ index increase from 784 to 5048 in five years, then losing 73% over 19 months. This index took 11 years to recover.

Global Financial Crisis(2008)- This crash was due to the housing bubble, with low-income loans and excessive risk by banks, which caused some U.S. banks to fail. In the U.S., it felt like the financial markets were coming to an end and reduced the U.S. sharemarket by 50% over 17 months. Commentators remarked if the U.S. Federal Bank had not intervened, this would have been similar to the 1932 Great Depression.

Covid (2020)- Due to Covid 19 pandemic, the market crashed over 30 % in one month then recovered in 6 months, leading to the fastest recovery ever (see *Psychology of investing: Recency bias*).

Black Monday (1987)- In 1982-1987, the deregulation of the New Zealand economy created new companies listing on the N.Z sharemarket, which increased from 400 to 4000 in 5 years (900%!). People borrowed or leveraged their homes to go into shares due to “easy money.” In October 1987, the U.S. sharemarkets dropped the most in one day and called this “Black Monday”. The other sharemarkets recovered from this drop in a few months, yet the N.Z. sharemarket continued to drop to 60% from its peak. The N.Z. sharemarket took nearly ten years to recover from this. A great insight is Liam Dann's article:

<https://www.nzherald.co.nz/indepth/business/1987-stock-market-crash/>

⁴ A index that focuses on Technology shares. The S/P 500 was up 279% over 5 year period and dropped to 37% of this value and took 4 years to recover.

Concurrently the media will always sensationalise a sharemarket bubble or crash (Below headlines). Nowadays, 24-hour media coverage can increase your concern about your investments, which even professionals have difficulty keeping perspective.



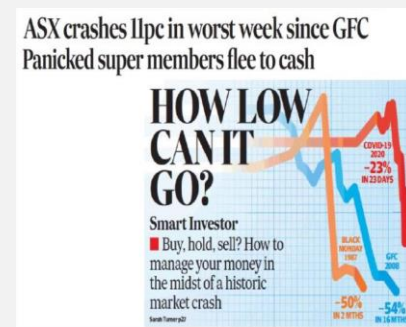
1987 NZ herald



2008



March 2020



1999 tech bubble

These examples emphasise that booms/crashes or market cycles are a normal part of the economy⁵ and the sharemarket. On average, history(US S&P 500) shows that bear markets occur every 3-4 years⁶ over the last 92 years, and the average recovery time is 18 months.

⁵ The economy and sharemarket can be disconnected due to the sharemarket is the aggregate future view of the economy. For example, at present the US economy is dealing with Covid yet the sharemarket is bullish.

⁶ Drop of 19% and more.

When your time horizon changes, your risk to investing will change, for example, if you are planning to retire within the next 3-4 years, to reduce the impact of these crashes, this would change where you would invest your money, e.g. from balanced fund to conservative fund.

These times will occur again, and to be invested in shares (managed fund) requires navigating our emotions during these times, i.e. the psychology of sharemarket investing.

Psychology Of Investing

Unfortunately, investing money and being human do not go together very well. Our "Pleistocene" brain is not designed for share investing due to behavioural biases and neuroeconomics (*Mauboussin 2015; Zweig 2007; Clements 2018*). Behavioural biases are irrational beliefs/behaviours that unconsciously influence our decision making. Neuroeconomics is the intersection of psychology, neuroscience and economics.

Some of these are:

- **Neuroeconomic/Loss Aversion:** When we have a financial gain or loss, this causes a psychological and biological response on the body and the brain. So much so that we process financial losses in the same part of the brain that responds to mortal danger (*Zweig 2007*). Hence we feel twice as much pain when we lose money compared to gaining the same amount of money (*Loss Aversion bias- Kahneman & Tversky 1979*). This bias can lead to investors selling at a sharemarket low point, thus derailing their investment plan.
- **Mental Accounting bias:** Money is the same regardless of the source, though it is treated and valued differently depending on where it came from or different types of investments. For example, yearly bonuses or tax refunds are viewed as windfalls rather than money that was earned. Or an investor can have a "safe" investment fund and a "speculative" investment fund, although this would be the same as having one large fund investment.
- **Social conformity:** As humans, we are social beings and like to be in a "herd". However, depending on what our peers are doing can dictate how we invest (*Mauboussin 2015*). Long term investing tends to be slow and dull, which does not make for an exciting story compared to speculating on shares and having significant wins. E.g. investing in Tesla compared to a managed fund.
- **Pattern seeking:** Humans are natural pattern seekers. We seek patterns when none exist. Zweig (2007) explains, "when we see two repetitions of a stimulus like a share go up, the human brain automatically, unconsciously and uncontrollable expects the third repetition". So if our shares or share fund goes up, we expect to continue to trend up, which can lead us to continue to buy and vice versa. Once this pattern "breaks," our brains respond in alarm. Thus a share fund drop feels like a "danger" to our brain.

- **Recency bias:** This is the tendency to give importance to recent events. For example, the quick recovery in the 2020 Covid crash can make investors believe this is normal. When in fact, most sharemarket recoveries take an average of 18 months.

These biases are innate, and they affect individuals and professionals alike (*Conquist & Siegel 2012*). What is helpful is an investment policy statement and/or a third party person like a financial adviser during uncertain times.

SUMMARY

The Theory of Investing explains inflation as the most significant risk to long term wealth. Achieving higher returns (above inflation) requires investing in growth assets like shares with short-term volatility but long-term compounding returns. Managed funds reduce this volatility with a diversified portfolio in different asset classes and subclasses. As well, the managed funds match the individual/group risk profile to the fund type.

The History of the Sharemarket explains what goes up will come down, and that the cycle repeats itself. Market booms and crashes come every four years; thus, investors can go through many in their lifetime. These times will have prominent media exposure and will test the investor's resilience.

The Psychology of Investing is due to innate human psychological, biological, emotional reactions and behavioural biases to share investing. The most common being herd mentality, loss aversion, recency bias, mental accounting bias and emotional responses when we lose money.

In conclusion, investing involves;

1. Having an (IPS) plan so you know why you are investing.
2. Understand the basics of investing, particularly your risk profile to match your investment
3. Understand the history and psychology of investing. Thus having the emotional discipline to execute and stayed invested during uncertain times.

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