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Look towards your investment horizon

Chris Cuffe

A friend was telling me about an old guy who used to live across the road from him. Known only as Mr Storm, he was 104 years old when he died recently. As a young man, Mr Storm had been a sugar broker in Indonesia, and came back to Australia after the Second World War with a decent amount saved. He managed his own portfolio, and as it grew substantially, he became a major supporter of many charities.

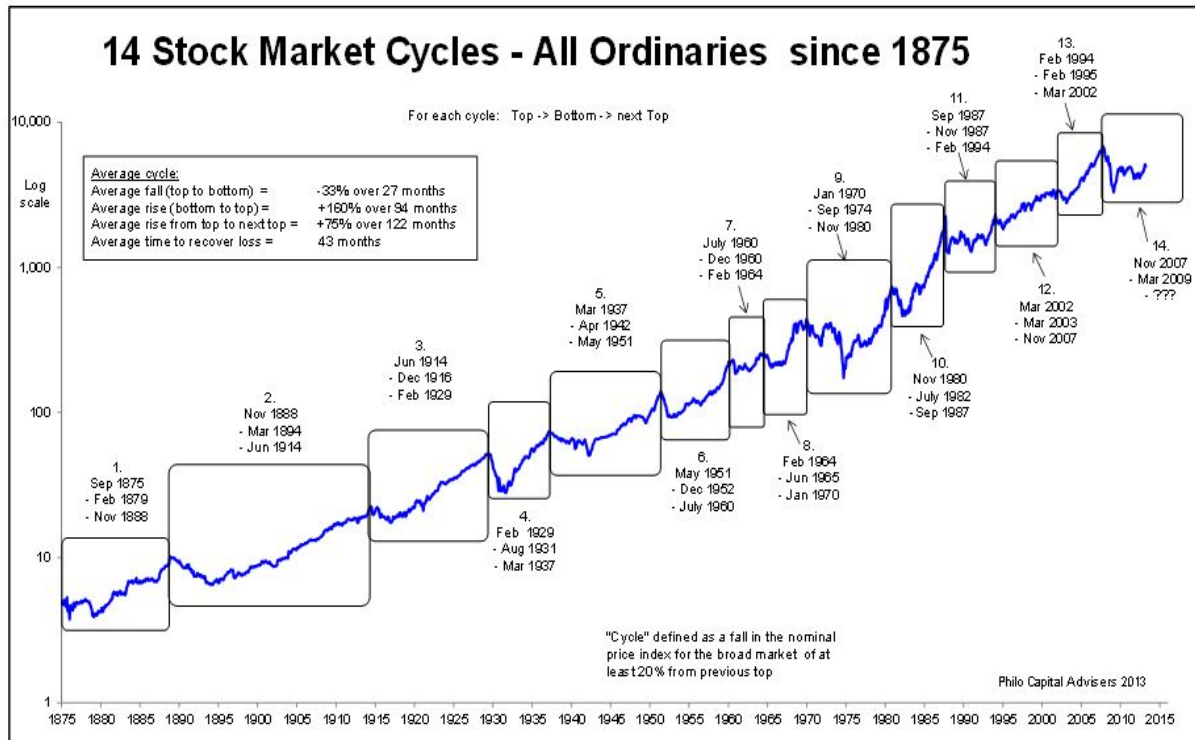
One day, the friend was chatting to Mr Storm on his front verandah, where he was soaking up the midday sun. As often happened, the conversation was interrupted by a phone call from the old man's broker, and the friend heard BHP discussed. After the call, my friend said, "I saw BHP fell back 30 cents yesterday, to around \$38. It's lost a bit recently." Mr Storm cleared his throat and barely lifted his head, the sun bright on his pale skin. "Most of mine cost me \$6 in 1967," he replied.

I tell this story because the perception of the market's performance, whether it's a good place to invest, depends on your investment horizon. Or more specifically, your entry point, because performance is usually determined by when you buy, especially for an investor rather than a trader. It's amazing to recall that the Commonwealth Bank was floated in 1991 at \$5.40, and 22 years later, not only is it now \$68, but it paid a fully franked dividend of \$3.61 last year. Should anyone who bought it in the float really care if the share price falls 10% or 20%?

If you saw the graph below without knowing the time scale, you'd probably think the Australian All Ordinaries market was always a wonderful place to invest. Sure, there have been dips along the way, but in the overall scheme, it looks like a never-ending rise.

Then when you're told the graph spans almost 140 years, a personal timeframe becomes more relevant. If it's true, as the United Nations has said, that the first person to live to 150 is already alive, then that person should happily invest 100% of their retirement savings into equities, and it would probably be the best asset allocation possible.

Since 1875 there have been 14 stock market cycles in Australia, where a cycle is defined as a fall in the nominal price index for the broad market of at least 20% from the previous top. Please note there is a lot of detail in the following two graphs, and they are best viewed enlarged on your screen. The graphs require a number of assumptions relating to 'old data', as explained at the end of this article, and I am indebted to my close colleague, Ashley Owen of Philo Capital Advisers, for the graphs.



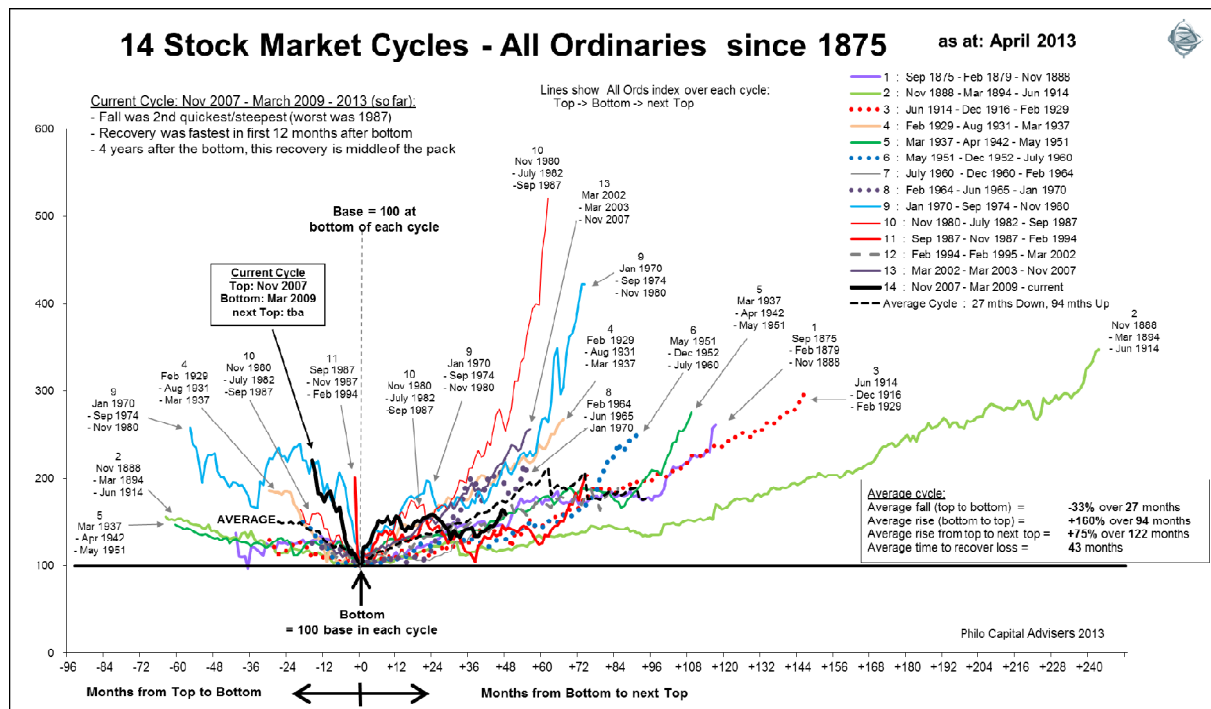
The interesting statistics from this graph are:

- the average fall from top to bottom is 33% over 27 months
- the average rise from bottom to top is 160% over 94 months
- the average time to recover the loss after a new bottom is 43 months.

For me, the 43 months is the most important number. Even after a fall of 20% or more, the market recovers to the previous high on average in less than four years. In a world where investors should expect to be retired for 30 years or more, we should have greater tolerance of short-term volatility.

This has crucial policy implications. Many of the MySuper funds being designed now as part of Stronger Super will adopt 'lifecycle' principles, with less allocated to equities over time. For example, Colonial First State will reduce the equity component from 90% at age 50 to 40% by age 60. Investors and advisers need to decide if that is too much too soon.

Of course, falls and recovery can be much worse than the average, and losing money just before retirement can be very stressful. The following chart shows a level of 100 at the bottom of each cycle, and the pattern of recovery from there. The variation is significant, which is one reason why comparing just one cycle to one other is problematic (again, best viewed enlarged on a screen).



The current cycle we are in (the solid black line in the graph), commencing from the high point of November 2007 to the low point of March 2009, was the second fastest fall on record, after 1987. If it felt like an extreme experience of wealth destruction, it was - even if you have been around as long as Mr Storm. But the recovery was the largest in the first 12 months after the bottom. Four years after the commencement of the recovery in March 2009, the current increase is in the middle of the pack compared to all the past cycles.

Cuffelinks is not in the business of forecasting markets, but if the average rise from bottom to top is 94 months, and we are about 50 months into the current one, then there's little from history to suggest it should run out soon. But every period is unique and has its headwinds and tailwinds to contend with.

Mr Storm would probably ask why are you worried about a few years here and there, young man?

Some qualifications regarding old data:

- before 1979 the Sydney All Ords Index is used as a proxy for the 'Australian' index, but for most of the period Sydney was not the largest exchange by value or volume
- before 1936 the reconstructed 'Aust All Ords Index' uses the 'Commercial & Industrial Index' which didn't include banks or miners, which were the largest stocks by market value and volumes
- before 1958, the sectors were equal weighted not market cap weighted
- before 1979 the index didn't include speculative stocks - not even the large / heavily traded ones - eg Poseidon, Western Mining, MIM, Hamersley, Woodsreef, VAM, Harbourside Oil, etc.
- war-time controls on share prices and profits (1942-49).

The pre-1979 index data probably significantly over-estimates returns, and under-estimates swings. If it were a true market value weighted index of all (or even all major) stocks, it would probably be very different - higher booms and deeper crashes - particularly in:

- late 1880s silver mining boom, then 1890s collapse
- 1890s banking crash / depression
- 1929-31 crash
- 1939-42 collapse of gold miners
- 1968-70 mining boom then crash in 1970-71.

Ownership requires taking action

Melda Donnelly

A fundamental tenet of free market capitalism is that owners choose how their assets are used to their best advantage. It's my belief that if our system erodes the capacity for owners to effectively exercise this choice the result will be sub-optimal.

At its simplest level 'ownership' connotes a set of behaviours, values and powers that co-exist with the asset owned. When exercised responsibly and actively in an informed and engaged manner, ownership plays a positive force in the economy and society.

Entrepreneurial corporate capitalism of the early 20th century aligned corporate ownership with its actual owners. Think of the founding fathers, Henry Ford and Andrew Carnegie, whose very large ownership stakes empowered and enabled its shareholder owners. Today's form of shareholder capitalism, often called 'fiduciary capitalism', is in direct contrast to this.

Fiduciary capitalism

Fiduciary capitalism is the term used to describe a new style of corporate governance practised by a new breed of investor - the sophisticated institutional fiduciary.

Agency issues and lack of accountability

A key characteristic of fiduciary capitalism is that its participants, predominantly institutional investors, are not owners in the sense they benefit directly from ownership; rather they are *agents* of these owners. They, and myriad other fiduciary agents, form the long agency chain that exists between the owner and user of that capital. They are passive in their ownership. Fiona Reynolds, in her recent *Cuffelinks* article on United Nations Principles of Responsible Investing (UNPRI), described this as the 'investment chain' and exhorted agents to become active and responsible investors.

Ownerless capital

In a system where the gap between the owner and the user of capital is vast, any ownership empowerment is virtually impossible. This dilution has led to such capital being described as 'ownerless capital.'

It's difficult to see how successful governance can ensue in such a system, given the complete lack of accountability for those to whom power is entrusted.

In reality, managements are neither effectively accountable to individual shareholders or to the institutions and fund managers who are the agents of the ultimate shareholders.

Universal owners

A universal owner is a large institutional investor that holds its shares for the long term, in a portfolio that represents a broad cross-section of the economy, and mostly trades to maintain its index.

Large institutional investors have a spread of asset holdings across diversified asset classes and economies. Not only the asset in which they are invested, but also the economy itself influences returns for these institutions. This breadth of ownership is the reason they have been termed 'universal owners.'

In these economies, universal owners come to occupy a quasi-public position in effect having an economic interest in the long-term health and well-being of society as a whole. This somewhat unusual position suggests an interest in matters beyond standard macroeconomic policy issues, but more specifically in regulatory policy, and for example the provision of public goods such as education and health and infrastructure. Understandably perhaps, many universal owners confronted with this potential have moved cautiously not conceiving themselves as public policy makers.

James Hawley and Andrew Williams, in their article 'Can universal owners be socially responsible investors' predict the future may well be very different.

"... as the ultimate beneficiaries - pension fund participants, mutual fund owners, etc. - come to realise the importance of universal owners acting as such, more fund managers will find the political room to use the potential power that universal owners possess."

Why Active Ownership Matters

In their article 'Capitalism without owners will fail', Robert Monks and Allen Sykes highlighted various weaknesses in today's shareholder capitalism.

Among them are the inappropriate powers of corporate management, deeply entrenched short-termism, absentee ownership, managements not effectively accountable to individual shareholders or their agents, board composition and accountability, and remuneration practices.

They went on to say:

"The prime weakness underpinning all the others is undoubtedly the absence of effective, committed, knowledgeable long-term owners."

Central to their debate is the notion of responsible ownership being critical to a corporate ethic. They state:

"The principal responsibility for shareholders is – or ought to be - to assure that the businesses they collectively own voluntarily disclose information necessary for appropriate law-making, exercise restraint in influencing the making and enforcement of law, and comply spacioously with the law. Only in this way can we ensure corporate functioning that is both profit-taking and compatible with the public good."

I think we all buy the argument that accountability and responsibility rest with ownership. Equally shared are the frustrations that exist with respect to the frameworks within which we operate where an abundance of regulations, global and domestic, are unfolding in an attempt to safeguard our somewhat rocky financial systems. But we appear to be caught in a vicious circle where weaknesses reinforce each other.

What can we do?

A few practical suggestions come to mind:

1. Analyse our own behaviours, knowledge, thought processes and commitment with respect to assets we own and enhance or change what might be necessary and practicable.
2. Exhort those who act on our behalf to take responsible active roles with respect to our assets and hold these agents accountable.
3. Where we ourselves act as Trustee and/or Agents in the investment chain ensure we play an active, committed and responsible role; that we have appropriate knowledge; and that we have

great clarity in decision-making ensuring the long term benefit of those for whom we act is front of mind.

4. With respect to our assets which one day will pass to our family members and others through our wills, ensure that those to whom the task falls have knowledge or the capacity to increase their knowledge to enable them to perform this task responsibly.
5. Encourage our younger family members to involve themselves in their own assets, particularly their superannuation. First step is for these members to understand that their superannuation is an asset of theirs, they will eventually take possession of it, they have choices as owners and they stand to benefit from understanding their choices.

In today's increasingly institutionalised and globalised world, unless empowered ownership becomes reality, capitalism, as we know it, is at serious risk. We need to act to minimise the dilution in the power that rests with the owners of assets.

Melda Donnelly is the founder of Centre for Investor Education and is an Independent Non-Executive Director of Ashmore Group, Treasury Group and Unisuper. She is a member of the Advisory Committee of the Oxford University Centre for Ageing.

Not all growth is good

Roger Montgomery

This is Part 1 in a three part series on **capital allocation and management ability**.

Many years ago the world's wealthiest man Warren Buffett said that growth was not always a good thing. What? Aren't companies of the western world doggedly pursuing growth? If our economy has two quarters of negative growth, we call it a recession and recessions are bad things. More sales, more profits, more products. It is all about 'more'. But growth is not always good. They might not know it but for some investors, growth has destroyed wealth both quickly and permanently.

Remember ABC Learning Centres? April 2006. The shares were trading at more than \$8.00 and profits were growing at a fantastic rate - they had risen from about \$11 million in 2002 to over \$80 million in 2006. The problem was return on equity was declining.

It is return on equity that will help you identify the great companies to safely invest in. And it is return on equity that will save your portfolio from permanent destruction.

To understand what Warren Buffett was talking about when he said not all growth is good, you need to know something about return on equity.

Imagine you have a business, even a good one. You invested \$1 million dollars in it, bought a shop and in the first year, produced a real cash profit after tax of \$400,000. That's a 40% return. Now suppose another shop came up for sale in another area for \$400,000 and you decided to buy it. As it happens you are really good at running the first store you bought but you have found running the second store a little harder. Traveling between them is a challenge and so you bring in a manager for the second store. The result is that after a year of owning the second store it produces a profit of \$20,000. Meanwhile the first store produces another \$400,000. The second store has generated a return of just 5%. Many business owners – and I know one or two – would say this is still satisfactory, because profits have gone up. In the first year your business made \$400,000 and in the second year, profits have gone up to \$420,000. Profits of your new 'group' grew by 5%.

Thinking about this situation another way reveals what a poor investment the second shop is. You first have to remember that you gave your business more money, so profits should have gone up. A rocking chair to sit in and a bank account are all you need to make profits go up. Invest \$1 million in a bank account and then put in another \$400,000 the year after and the interest you earn in the second year will be higher than in the first. You have grown the profits and it has been no effort at all.

So when a company increases its profits it is nothing spectacular if the owners have invested more money in the company. This is purchased growth. Shareholders have funded the opportunity for the directors to look good. The situation is even worse if that additional money generates a return that is less impressive than the rate available from a bank account. And if a higher return can be earned for the same risk or the same return for less risk, somewhere else, then the reality is that you don't want to put more money into the business. You don't want it to grow. It is better that the \$400,000 is taken out of the business, rather than employed to purchase another shop. The \$400,000 should be invested elsewhere at a higher rate or even at the same rate in a bank account, which has a lot less risk.

If, each year, you invested the \$400,000 from the original shop into a new one that produced a return of 5%, the business would have many shops earning 5%, and each year the business would be worth less and less even though profits would be growing.

Many investors don't understand this – that there is growth that will destroy wealth. They happily allow the management of a company to keep the money 'to grow the business' and willingly accept a low return. That low return is actually costing you money because you could have earned a better return elsewhere. It is called opportunity cost. Investing the money in the business at a low rate of return has cost you the opportunity of earning more or earning the same, but with more safety, elsewhere.

For example, the following table shows that an investor in a company that generates a 5% return on equity and that keeps all the profits for growth rather than paying those profits out as a dividend, will lose half their money.

Table 1: How to lose money despite profits and capitalisation rising

	Year 1	Year 2
Equity at Beginning	\$1,000,000	\$1,050,000
Return on Equity	5%	5%
Net Profit	\$50,000	\$52,500
Dividend	\$0	
Equity at End	\$1,050,000	
Price Earnings Ratio	10	10
Market Capitalisation	\$500,000	\$525,000

Table 1 shows a company listed on the stock exchange and whose shares are trading on a price earnings ratio of 10 times. The price earnings ratio is simply the share price divided by the earnings. So if the share price is \$5 and the earnings are 50 cents, the price earnings ratio will be 10. It means that buyers of the shares are happy to pay 10 times the profits for the company.

In Year 1 when the company earned a profit of \$50,000, the stock market was willing to pay 10 times that profit or \$500,000 to buy the entire company. Another way of thinking about it is that the stock market thinks the company is worth \$500,000. Of course, as we have talked about already, what the stock market thinks the company is worth and what it is actually worth are very often two different things. Don't listen to what the stock market thinks.

The company begins Year 1 with \$1 million of equity on its balance sheet and in the first year, generates a 5% return on that equity, or \$50,000. Management decides that the money is needed to 'grow' the business and so no dividend is paid. As you are about to discover, that decision has cost shareholders a small fortune.

By keeping the profits, the equity on the balance sheet grows from \$1 million at the start of the year to \$1,050,000 at the end. In the second year, the company again earns 5% on the new, larger equity balance. A 5% return on \$1,050,000 is a profit of \$52,500.

So on the surface things look rosy. I'll give you a week to think about what the problem is, and in Part 2 of this series next week in *Cuffelinks*, I'll show you how shareholders have been duded by management and company directors.

Roger Montgomery is the founder and Chief Investment Officer at The Montgomery Fund.

There's no such thing as an average investor

Rick Cosier

Last week's *Cuffelinks* contained three interesting articles on life expectancy, lifecycle funds and investment strategies. Amongst other things, these articles discussed the following concepts:

- the ability of the state to pay the age pension due to the decreasing number of workers versus the increasing number of retirees
- the appropriateness of having a more conservative investment allocation as we grow older, and whether superannuation funds should be structured so this happens automatically.

Here are some comments based on my observations as a financial planner, and many years discussing retirement and superannuation with clients.

Although the raising of the superannuation guarantee charge to 12% of salary will assist many to accumulate enough money for their retirement, for most this comes too late as they have not had enough time to benefit from the government initiative. Treasury's 2010 Intergenerational Report projects that by 2050, 75% of the population will still be receiving some age pension.

I have come across many people in their late 50s who have relatively small amounts of super but live in a home that is debt free. One challenge for them is to fund the gap between the time they finish work and the time they can access the age pension.

An ABS study, the 2010-11 Multipurpose Household Survey, revealed a significant gap between the average retirement age and the age pension age. According to the survey, the average age at retirement from the labour force for people aged 45 years and over in 2010-11 was 53.3 years (57.9 years for men and 49.6 years for women). Of the 1.4 million men who had retired from the labour force:

- 27% had retired aged less than 55 years
- 53% had retired aged 55-64 years
- 20% had retired aged 65 years and over.

Although many people in their late 50s and early 60s would like to continue working, a high percentage of them are not able to do this. According to the ABS study, 36% were made redundant or got sick. In my experience, relatively few finish work because they have enough money. Many

are forced into lower income jobs, perhaps because they are considered to be more expensive or less innovative than younger people. Perhaps they no longer 'fit in' with younger colleagues.

I suspect that in future years this problem will become more significant. The high cost of housing and the associated debt repayments, plus the inclination to pay for private schooling means that many Generation X families are spending their entire incomes and saving nothing beyond the minimum superannuation requirements. In many cases, affordability of their current lifestyle and preferences is only possible because both parents work and interest rates are low.

Annuities or endowment funds have been mentioned as a potential solution to the longevity problem. This might seem a reasonable idea if these products are CPI-linked, but if they aren't, unforeseen rises in interest rates and inflation will be disastrous for people who lock into annuities at today's low rates.

The two most important messages I give to clients about superannuation are:

- during your working life you must build up sufficient money to create an income stream that will last for the 25 years or more you will spend not working
- once you have finished work, your super must grow faster than tax and inflation, and if it doesn't, then you may run out of money.

I suspect 'lifecycle' funds fail these tests in two ways. Firstly, they move members' money from 'risky' assets to 'secure' assets too soon. Secondly, in the current environment, 'secure' assets are not delivering returns that exceed tax and inflation.

In essence there are four parties that can help super fund members with their investment decisions – the government, the super fund manager, a financial adviser and the member themselves. The government has a duty to incentivise people to secure their own retirement because the government knows they will not have the money to pay for health and pensions over coming decades. Based on demographics and the ageing of our population, there will only be 3.5 workers for every retiree in 2025. If the government ignores this statistic and introduces policies that assume that the average retirement age will rise to 73, there will be negative ramifications if it does not come to pass.

Wealth managers also have a duty of care as they are the trustees of super funds. They appear to have two choices when it comes to default design under the MySuper regulations – a lifecycle approach or a balanced fund approach (where asset allocation is not linked to age). Members can of course opt out and choose from a number of asset allocations based on risk profile (defensive, conservative, balanced, growth, etc). This relies on the member choosing the right profile. Whether a member remains in the default option or makes an active choice, neither solution is perfect.

Into this imperfect world steps the financial planner. He or she should have the experience, ability, desire and tools to guide a member into the most appropriate investment option. The advice is based on individual circumstances and should involve the following steps:

- establish how long the member has between now and retirement
- find out how much super they have already and what they are contributing
- help the person assess how much income they will need in retirement
- calculate the shortfall or surplus based on some assumptions about future employment income and fund performance
- if there is a shortfall, will non super investments or the age pension cover it?
- if not, the member either has to save more money, accept a lower retirement income or try and achieve better performance.

An individual can follow these steps themselves but I question whether most have the time or the expertise.

The actions of governments and super fund managers are based on actuarial statistics focussed on averages. But the average investor does not exist. The true value of a financial planner is the ability to blend a super fund member's personal situation, objectives, time frame and risk profile with the generalist policies of governments, super fund managers and administrators.

Rick Cosier runs an independently-owned financial planning business, Healthy Finances Pty Ltd.

Let's talk more about compounding and the Rule of 72

Graham Hand

Albert Einstein is often quoted as having described compound interest as 'the greatest mathematical discovery of all time,' although this is probably apocryphal. One of the richest bankers in history, Baron Rothschild, described it as the Eighth Wonder of the World. The founder of Vanguard, Jack Bogle, said, 'compound interest is a miracle.'

What's all the fuss about? How many financial advisers discuss this incredible concept with their clients? In fact, an appreciation of compounding should be on every investment agenda.

A good example of the problem of ignoring compounding comes from the most often quoted number in the Australian financial markets, the All Ordinaries Index. It's mentioned in every news bulletin, and most of us know it's currently about 5,000. Since it peaked at about 6,850 in November 2007, the market is down about 28%. Right?

	<u>All Ordinaries Price Index</u>			
	<u>Date</u>	<u>Level</u>	<u>Change</u>	<u>Since Top</u>
PEAK	1 November 2007	6,854		
BOTTOM	6 March 2009	3,117	-54.6%	
NOW	22 April 2013	4,955	+59.3%	-27.7%

Investing in equities looks really bad compared with pre-GFC levels, but it's ignoring the power of compounding. The All Ords is most often quoted as a price index, based on the prices of companies listed on the ASX. But it excludes the dividends they have paid, and so makes the performance of equities seem worse. The accumulation (or total return) index includes the receipt of and reinvestment of dividends. It is a better indication of the way the market has performed. The All Ords Accumulation Index is currently about 39,000, and it peaked around 43,000, so it's down about 8%. Not wonderful but not 28% and not too terrible given the GFC was a one in 50 year event (hopefully).

	<u>All Ordinaries Accumulation Index</u>			
	<u>Date</u>	<u>Level</u>	<u>Change</u>	<u>Since Top</u>
PEAK	1 November 2007	42,946		
BOTTOM	6 March 2009	20,858	-51.4%	
NOW	22 April 2013	39,407	+88.9%	-8.2%

If the Commonwealth Bank pays a fully franked \$1.60 dividend and the day it trades ex-dividend, its share price falls \$1.60, the All Ords will fall (if other stocks are unchanged). Does that mean an investor has lost money? Of course not. In fact, the dividend was fully franked and the investor is well ahead, it's just that \$1.60 is in their pocket, not the CBA share price. The accumulation index allows for this, as shown below.

As at 31 March 2013	Annualised Returns		
All Ordinaries	1 year	3 year	5 year
Total Returns (Accumulation Index)	15.89%	4.28%	2.16%
Price Returns	10.84%	-0.11%	-2.21%

(It could be argued that we should consider both the real price and the real accumulation index, that is, adjusted for inflation. In this case, the price index is currently down a very sad 37% from its peak, and even the accumulation index is down 20%, because inflation has risen 14.6% since December 2007).

Compounding should be part of everyone's basic financial literacy, and a simple message without going into the mathematics is the Rule of 72. This formula provides an approximation of how long it takes to double an investment at a given interest rate. Dividing 72 by the rate of interest earned gives the number years it takes to double your money - the 'doubling time.'

When the ASX300 Accumulation Index delivered returns greater than 20% in each of the pre-GFC years of 2004, 2005 and 2006, it created a climate of elevated investor expectations. Money flowed into equity funds, and cash and term deposits were boring and old-fashioned. Of course, the world has changed since then, and now commentators talk of the 'New Normal.' They tell investors to get used to low returns on both shares and bonds, with greater price volatility.

But it's not really that bad. A return of 7% doubles an investor's money in 10 years. In Australia, it is possible to achieve this return in the corporate bond market, or using some of the listed hybrids (ignoring tax). Or with some Australian banks paying fully-franked dividends of about 6%, then an investment can double in 12 years, even if the share price is unchanged.

The rule can be used in reverse, if an investor wants a certain amount of money in a defined number of years, then the required rate of return can be calculated. This may require the investor to take more risk than, say, term deposits and cash, and of course, this may leave the investment goal thwarted. It's all very well to desire to double money in 6 years, but 12% per annum is difficult to achieve without accepting significant risk.

Perhaps one reason why compounding receives less profile than it should is that few people can imagine what exponential growth looks like. It's easier to think about simple interest. Consider the difference between simple and compound interest by looking at the interest earnings in each of the 10 years of compounding at 7%. In the first year, the interest on \$100,000 is \$7,000. This is the same for both simple interest and compound interest. But then in the second year, compound interest is earned on \$107,000, which is \$7,490, an increase of \$490. In the tenth year, the interest earned is \$13,000, almost double the first year.

The value of compounding makes starting saving early even more important. For example, with a basic savings plan spanning 40 years (say from starting work at 20 until retiring at 60) of \$1,000 a year, the earnings will be double that of doing the same over only 30 years. It doesn't seem intuitively obvious but that's the power of compounding. Similarly, a borrower who does not pay off credit card debt will find the compound interest expense will eventually outweigh the original debt.

In recent research by the Centre for the Study of Choice, UTS and the Centre for Pensions and Superannuation, UNSW, 1200 Australians were studied for numeric skills and financial competence. About 30% could not answer a simple question on compounding, yet we will soon be asking them to commit 12% of their gross salary to a concept that relies on it. The study centres are looking into improving the ways superannuation funds communicate with their members, and it's not acceptable to simply state that super is too complex to understand. Most people have to deal with more complicated issues in their work and life.

And one more delightful fact: in every doubling period – say if interest earned is 7%, every 10 years – more interest is earned in the last decade than in all the decades that preceded it. For example, taking a long term exposure of say 50 years (a reasonable assumption with a large proportion of the population living to be 90 or 100), more is earned after the 40th year than in the sum of the first 40 years. This also highlights the financial benefits of delaying retirement.

Of course, any analysis of compounding that forms part of a financial plan should make allowances for tax and inflation. An investor with \$500,000 who decides he needs \$1 million dollars to retire may take some comfort from achieving this goal by investing at 7% for 10 years. But \$500,000 today will have the same purchasing power as \$672,000 in 10 years even with inflation at only 3%.