OPTIONS MADE EASY

PRESENTED BY
ANDY L SEMPLE

EVERYTHING YOU NEED TO KNOW TO UNDERSTAND AND PROFIT FROM INVESTING IN OPTIONS

CONTENT REVIEWED BY THE
"AUSTRALIAN STOCK EXCHANGE"

ASX

OPTIONS MADE EASY

Andrew Semple

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OPTIONS MADE EASY

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This book is a work of non fiction

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Information about the Author

Andrew Semple holds a Bachelor of Applied Science degree from the University of Southern Queensland, majoring in Geology, as well as a Bachelor of Commerce degree from Bond University, majoring in Marketing and Finance.

Andrew taught *Investment Analysis & Management*, a core subject from the Bachelor of International Finance degree, at Griffith University Gold Coast, in 2002.

He writes the *"Your Options"* column that appears each Monday in the Gold Coast Bulletin newspaper and regularly contributes option based trading solutions in the Weekend Financial Review and appears on the CNBC's Australian Financial Review Market Wrap program, aired on FoxTel and Austar.

He has developed three unique trading systems, *Leverage Option Trading*, *Leverage Momentum/High Volatility Trading* and *Leverage Portfolio Management*. Andrew has also designed and written several sophisticated option calculators.

He as a Private Client Adviser, Authorised Representative, has level 1 and 2 derivative accreditation and is registered by the ASX as an approved derivative adviser.

Andrew is also a practitioner member of the Securities and Derivative Industry Association (SDIA) and is an active options trader.

Introduction

This book is about building wealth and investing your money wisely. It is not a book providing *"get rich quickly"* schemes. It will provide you with a practical guide in plain simple English on how to *"get wealthy slow"*.

There is just one problem – where do you start? The are some many paths one can take – Residential Property, Fixed Interest, Managed Funds, Direct Shares, First Mortgage Funds, it just goes on and on. What do you do?

This book is here to solve that problem. However it will do more than show you where to begin, it will put you on the path to financial freedom and guide you along the way.

I also wrote this book because many retail traders have increasingly turned to using exchange traded options as part of their strategy to build wealth. Like many things that are different and unique, using options has also drawn out many people who claim to be "experts" in the field. Unfortunately for many retail traders, their investment experiences have been devastating and wealth destroying due to these so-called "experts". Every weekend in every major newspaper there are people who advertise wealth seminars and as part of their seminars they introduce topics like "renting shares" and "investing with 100% protection". These people are really in the business of making money through grossly over inflated "education workshops". They neither have a license nor the real experience to educate retail traders, yet people hand over many thousands of dollars to "learn" these so called secrets that the wealthy only know how to use.

Understanding how options work is like learning to ride a bicycle for the first time – it can be difficult. But with a desire to learn and a little effort, understanding how options work is easy, just like riding a bike!

Education is the key to smart decision-making. Learning about markets and risks improves your chances of success and makes you a wiser trader. Wisdom translates into profits more often than ignorance does in any market.

You probably have heard people say the options market is "*too risky*" or "*too complicated*". Certainly, aspects of options investing can fit these descriptions, but so do aspects of virtually every form of investing.

The way that you go into the options market should be determined by your own personal profile as an trader, including the kinds of risks you are willing and able to take on.

If upon learning about options you decide that the market is not right for you, that will be an informed decision rather than an opinion without basis. Rejecting a potential market without first learning about the risks and rewards is a lost opportunity.

Options are subject to their own set of rules. You might ask, *"Why don't more people take part in options trading?"* There are three answers. The brief history of the options market has kept it out of the public eye, the majority of private client advisers do not have level 2 derivative accreditation and the language of options is highly specialised. When language is overly technical, it is easy for the average person to feel alienated and intimidated.
One of the features of *Options Made Easy* is that it clearly explains the options jargon.

Author's Note: This book is best read in conjunction with the *"Options Made Easy"* educational video program.

Chapter 1: Urgent versus Important

Let me start by asking you this question. *"What is the difference between Urgent and Important?"*

Find a piece of clean paper and write down the first three things that come to mind for Urgent and Important.

Before determining the difference between the two, lets first understand what Urgent and Important mean.

The dictionary meaning for Urgent is.

"Requiring immediate action or attention."

Examples that come to mind for me include paying an overdue bill or noticing the petrol level in my car is very close to empty. Did you come up with similar examples?

The dictionary meaning for Important is.

"Of great effect or consequence."

Examples that come to mind for me include health, family and wealth. Did you come up with similar examples?

Now think about this question. "How often have you chosen to ignore the Important for the Urgent?"

Think about this. Should you lose your health for example, the remaining two, family and wealth all of a sudden become urgent.

The essential difference between Urgent and Important is time.

We seem to think we always have enough time for our families, for our health and to build wealth, but time is one of the biggest enemies of building wealth.

You already know that building wealth is important. The key message here is to start planning your wealth strategy today. Every day you delay starting is adding another day that you still have to work.

So why do we need to invest? I think Warren Buffet's definition of "investing" best sums it up.

> *"Investing is laying out money today to receive more money tomorrow" Warren Buffet, 1999*

We need to invest so we can have money for our retirement and to improve our standard of living.

Chapter 2: A study of option users

The Options Industry Council of Chicago commissioned a recent study into the attitudes of option and non-option users. Yankelovich Partners, Inc. USA conducted the study on May 5, 2000.

The core findings of the study were:
- Options users remain predominantly male (90%);
- 81% of Options users perceive themselves as knowledgeable about investing;
- Half (**51%**) of all non-users of options felt their lack of knowledge about options prevented them from investing with options; and
- Non-users still mention risk (**34%**) and fear (**22%**) of the unknown as barriers to options investment.

I would dare say that the findings of the USA study would be fairly indicative of Australian option and non-option users.

Before examining the attitudes of non-options users, let me first provide some background information about Australia's two derivatives exchanges.

Australia has two derivatives exchanges, SFE corporation limited (SFE) and ASX Derivatives (ASXD).

SFE provides a broad range of derivative products covering interest rates, currency, equity and commodity products. The ASXD provides a broad range of equity derivative products such as Exchanged-trade options (ETO's), Low exercise price options (LEPOs) and warrants.

The SFE and ASXD each require advisers to be accredited before they can take a client's order or make recommendations or give advice in relation to futures, options or warrants.

There are two levels of accreditation required by the ASXD in relation to options, LEPO's and warrants traded on its exchange.

Level One accreditation is required only to advise on warrants, buying options, selling options to close and the simultaneous buying of shares and writing (selling) a matching options position.

Level Two accreditation is required in order to advise on the writing (selling) of options, multi-legged options strategies such as strangles and the trading of LEPO's.

In order to be accredited at either level, an adviser must pass the relevant ASXD exam with a minimum pass mark of 80 per cent.

Depending on the type of activities they are engaged in, advisers are required to hold proper authorities issued by the licensee and are registered by ASIC. In Australia there are over 6,200 proper authority holders and around 500 of them have Level Two derivative accreditation. This means that 92% of proper authority holders are not licensed to give clients advice on advanced derivative strategies such as *Synthetic Long Buy Writes*, *Bull Calendar Price Spreads,* to name just a few.

The main reason most advisers have not attained level two derivative accreditation is they deem their clients do not need options as part of their investment strategy. Another reason could also be that these advisers also find the subject hard to understand. The findings from the survey in the USA indicate that over half of the non-option users said it was their lack of knowledge that prevented them from using options.

As for the non-option users mentioning risk and fear of the unknown, adequate advice or education would allay these fears. When one doesn't understanding something, it is very easy to fear it.

Options, as you will read, are a rules based financial product and if traders follow the basic rules and understand how they work, options when used properly can be very rewarding.

Chapter 3: So where should we invest?

So where do we invest our hard-earned money?

The bar chart illustrates the results of an investment sector performance report prepared for the Australian Stock Exchange by Towers Perrin, an actuarial company.
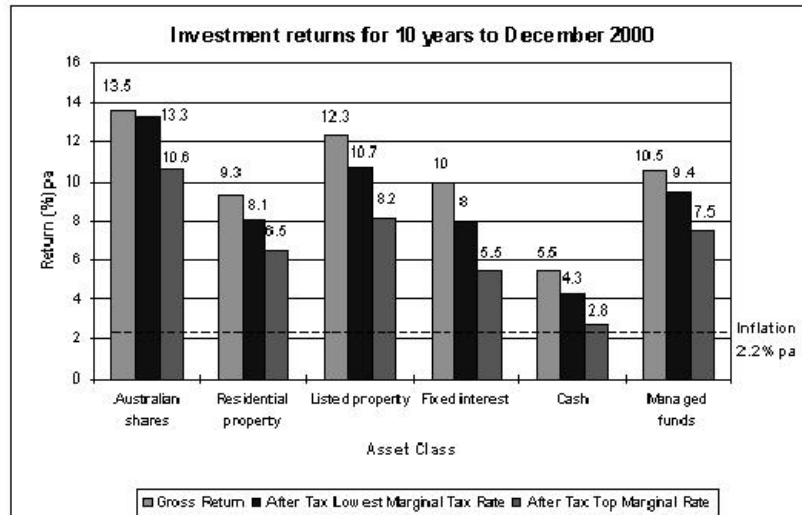
ASX commissioned Towers Perrin to report on the performance of various asset classes on a consistent net basis (ie. after all costs and taxation) over the 10-year period ended 31 December 2000. A full transcript of the Towers Perrin report can be found at the ASX website.
 (http://www.asx.com.au/about/l3/shareperformance_aa3.htm)

So what does the graph tell us?

We can see the best three performing investment sectors are Australian Shares (13.5%), Listed Property (12.3%) and Managed Funds (10.5%). Surprisingly, Residential Property was the second

worse sector at 9.3%, beaten by Fixed Interest at 10%. As expected Cash provided the lowest return of 5.5%. It would also suggest that property traders would be better suited to investment in listed property than residential property.

The graph also serves as a reminder that if you stay invested for the long term, all the asset classes will provide a return well above inflation.

It is plainly obvious that shares are the best asset class to invest into. So what do you do, invest in stocks directly or invest via managed funds? Well a stockbroker will tell you to invest in shares directly while a financial planner will tell you to invest in managed funds. Both have their own agendas, but essentially it's got to do with how stockbrokers and financial planners are paid. Stockbrokers make their money by the buying and selling of shares while financial planners make their money through the trails they receive from the managed funds they have placed their clients into.

As a Private Client Adviser, I do have a bias towards direct share ownership over domestic managed funds. I would like to state that traders who want to gain exposure to overseas share markets should invest in international managed funds unless they have very, very deep pockets to buy direct shares. For example, most of the companies that make up the Dow Jones Index on the New York stock exchange cost anywhere between US$10 for AT&T to US$129 for 3M[1] per share. I think you can see what I am getting at. So naturally, an international managed fund would allow an trader to get exposure to such companies for an investment as little as $1000.

I do believe however that a well-constructed share portfolio will out perform any domestic managed share fund. From here on in, any reference to managed funds refers to domestic managed funds, not international.

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[1] Closing prices for AT&T and 3M as of July 9, 2002

In my opinion, any trader with less than $50,000 who wants to invest into the stock market should consider investing into <u>only two</u> listed investment companies such as Australian Foundation Investment Company Limited (AFI) and Argo Investments Limited (ARG) and forget about managed funds. Should an trader have $50,000 or more in equity to invest, he or she should give serious consideration to adopting a direct share strategy.

Why should an trader adopt this philosophy? Let me start by illustrating how only a hand full of companies influence the ASX S&P 200 index.

The following table illustrates the market capitalisation of the top 20 companies listed on the ASX as of July 9 2002.

Stock	Market Cap.	%-Index	DivYield-%	Stock	Market Cap.	%-Index	DivYield-%
AMP	$ 18,230,066,285	4.7	3.16	PBL	$5,819,472,259	1.5	2.24
ANZ	$ 28,254,493,008	7.29	4.18	RIO	$17,806,731,802	4.59	3.23
BHP	$ 38,796,025,174	10	2.24	SGB	$8,961,643,050	2.31	3.95
BIL	$ 8,787,806,316	2.27	2.19	TLS	$30,626,284,448	7.9	4.61
CBA	$ 39,934,371,982	10.3	4.49	WBC	$28,351,838,331	7.31	4.09
CML	$ 7,723,461,600	1.99	3.91	WES	$10,178,320,328	2.62	3.39
FGL	$ 9,588,709,681	2.47	3.42	WFT	$6,885,165,686	1.78	6.7
NAB	$ 52,914,982,668	13.64	4.13	WMC	$10,185,529,390	2.63	3.15
NCP	$ 22,093,110,229	5.7	0.28	WOW	$13,109,392,078	3.38	2.38
NCPDP	$ 20,626,825,006	5.32	0.83	WPL	$8,960,000,004	2.31	2.53

Total Market Capitalisation   **$387,834,229,325**

From the table we can see the top 20 stocks have a combined market capitalisation of around AU$387 Billion dollars. These 20 stocks have a tremendous influence on the various indexes on the ASX.

The top 20 stocks as of July 9, 2002 make up approximately:

75.1% of the S&P/ASX top 50 stocks index
65.7% of the S&P/ASX top 100 stocks index
62.1% of the S&P/ASX top 200 stocks index
61.1% of the S&P/ASX top 300 stocks index
55.6% of the All Ordinaries index.

The vast majority of managed funds will all own those 20 stocks mentioned in their portfolios and so will the listed investment

companies AFI and ARG. The difference between a listed investment company and a managed fund is in the fee structure. Investing in a managed fund means you pay an entry, management and exit fees while investing in listed investment companies you'll only be charged brokerage when you buy and sell the shares. In other words, you'll pay more in fees if you invest in managed funds.

Now should you have at least $50,000 equity to invest, you can actually own a selection of shares individually and as you will soon discover in the following chapters, use options to increase the return and lower the risk of those shares.

Chapter 4: The "Secret" formula to build wealth

I would like to share with you the "secret" formula to build everlasting wealth.

$$[\{((E + D) * (1 + r)^t) - (D * (1 + rd)^{td})\} * (1-I)] - (E - (D*rd^{td})) * (1-Tax) + E$$

Where: E = Equity, D = Debt, r = Investment Return,
^{t} = Time , rd = Interest on Debt,
^{td} = Time on Debt, I = Inflation & Tax = Tax Rate.

This formula looks very complicated, doesn't it? If I strip out some variables however, you will see that the *"secret"* formula is really the compound interest formula.

$$FV = P * (1 + r)^t$$

Where: FV = Future Value, P = Principle, r = Rate of Return and ^{t} = Time.

The formula is important because it mathematically illustrates how to build wealth. Obviously in reality there are many other variables which must be considered such as taxes and the rate of inflation, to name just a few.
For instance, if you were to save $2,500 per year for 25 years and receive 10% interest each year, at the end of the 25th year you would have $270,545.41. In this example the trader saved $62,500 over the 25 years and made $208,045.41 through the magic of compounding interest.

The next section will illustrate the power of compounding. I have tried to keep the mathematics as simple as possible.

The Magic of Compound Interest

Future Value Single Cash Flows

Suppose you were to invest $1,000 in a savings account that pays 10 per cent interest per year. How much will you have in one year? You would have $1,100.

This $1,100 is equal to your original principal of $1,000 plus $100 in interest that you earn. We say that $1,100 is the future value (FV) of $1,000 invested for one year at 10 per cent, which simply means that $1,000 today is worth $1,100 in one year, given that 10 per cent is the interest rate.

In general, if you invest for one period at an interest rate of r, your investment will grow to $(1 + r)$ per dollar invested. In the above example, r is 10 per cent, so your investment grows to $(1 + .10) = 1.1$ dollars per dollar invested. You invested $1,000 in this case, so you ended up with $1,000 * (1.10) = $1,100.

You might wonder if the single period in this example has to be a year. The answer is no.

For example, if the interest rate were 2 per cent per quarter, your $1,000 would grow to $1,000 * (1 + .02) = $1,020 by the end of the quarter.

You might also wonder if 2 per cent every quarter is the same as 8 per year. The answer is again no, but I will explain why a little later.

Going back to our $1,000 investment, what will you have after two years, assuming that the interest rate doesn't change? If you leave the entire $1,100 in the bank, you will earn $1,100 * .10 = $110 in interest during the second year, so you will have a total of $1,100 + $110 = $1,210. This $1,210 is the FV of $1,000 in two years at 10 per cent.

This process of leaving your money and any accumulated interest in an investment for more than one period, thereby reinvesting the interest, is called compounding.

Compounding the interest means earning interest on interest and is known as compound interest.

At the risk of belabouring the obvious, let's ask, How much would your $1,000 grow to after three years? As from the previous example, you will be investing $1,210 for one period at 10 per cent. You will end up with $1,210 * 1.1 = $1,331 in total. The calculation for this example is shown below.

$$= \$1,000 * (1.1 * 1.1 * 1.1)$$
$$= \$1,000 * (1.1)^3$$
$$= \$1,000 * 1.331$$
$$= \$1,331$$

You are probably noticing a pattern to these calculations, so we can now state the general result. As the example suggests, the FV of $1 invested for t period at a rate of r per period is:

$$FV = \$1 * (1 + r)^t$$

The expression $(1 + r)^t$ is sometimes called the *future value interest factor* for $1 invested at r per cent for t periods.

What would your $1,000 be worth after ten years? You first need to compute the relevant future value interest factor as:

$$= (1 + r)^t$$
$$= (1 + .10)^{10}$$
$$= 1.1^{10}$$
$$= 2.5937$$

Your $1,000 will thus grow to:

$1,000 * 2.5937 = $2,593.75

The growth of your $1,000 each year is illustrated in Chart 1 below.

Chart 1.
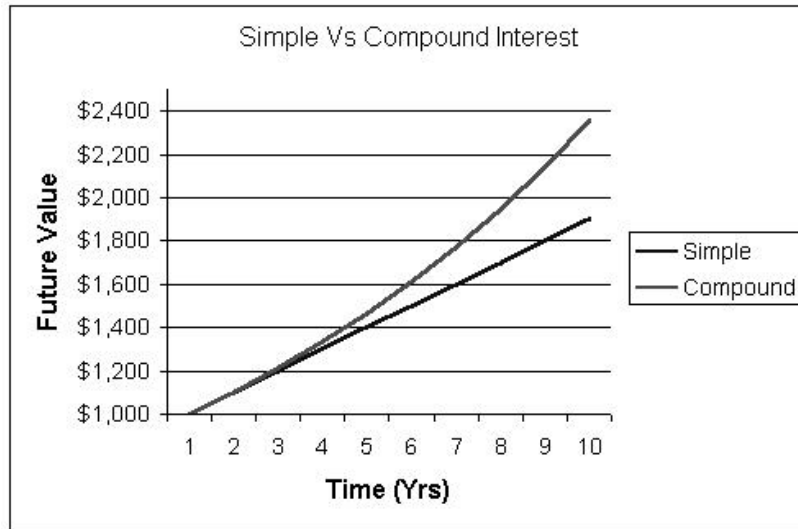
Notice how the simple interest is constant each year ($100), but the compound interest you earn gets bigger every year. The size of the compound interest keeps increasing because more and more interest builds up and thus there is more to compound.

To solve future value problems, we need to come up with the relevant future value interest factors. There are several different ways of doing this. In the example above, you could have multiplied 1.1 by itself 10 times. This will work just fine, but it would get to be very tedious for, say, a 30 year investment.

Fortunately, there are several easier ways to get future value factors. Any financial or scientific calculator has a key labelled "x^y" or "y^x". You can usually just enter 1.1, press this key ("x^y"), enter 10, and

press the "=" key to get the answer. This is an easy way to calculate future value interest factors because it's quick and accurate.

Future Value Multiple Cash Flows.

Thus far, we have restricted our attention to future value single cash flows. We will now extend this concept to handle any number of cash flows.

You will frequently encounter situations where you have multiple cash flows that are all the same amount. For example, a very common type of loan repayment plan calls for the borrower to repay the loan by making a series of equal payments for some length of time, ie. a home loan.

Generally, a series of constant or level cash flows that occur at the end of each period for a fixed number of periods is called an *ordinary annuity*.

In the previous example, we presumed that you saved $1,000 for 10 years at an annual interest rate of 10 per cent. After 10 years had passed, your investment would be worth $2,593.75.

What would your investment be worth if you saved an additional $1,000 at the end of each year for 10 years at an annual interest rate of 10 per cent?

Incredibly, your investment after 10 years would now be $15,937.42 - that's an increase on the previous example by $13,343.67, or 514 per cent!

The future value formula for an annuity is given by:

$$\textbf{FV} = \textbf{C} * [(1 + r)^t - 1] / r$$

Returning back to our example, the future value calculation is thus:

$$FV = \$1{,}000 * [\,(1 + .10)^{10} - 1\,]\, /\, .10$$
$$FV = \$1{,}000 * [\,1.1^{10} - 1\,]\, /\, .10$$
$$FV = \$1{,}000 * [\,2.5937 - 1\,]\, /\, .10$$
$$FV = \$1{,}000 * [\,1.5937\,]\, /\, .10$$
$$FV = \$1{,}000 * 15.9374$$
$$FV = \underline{\$15{,}937.42}$$

If you leave this on deposit for one more year and don't add to it, at the end of the tenth year you'll have:

$$FV = \$15{,}937.42 * 1.1 = \underline{\$17{,}531.16}$$

The growth of your $1,000 deposited each year is illustrated in Chart 2.

Chart 2.
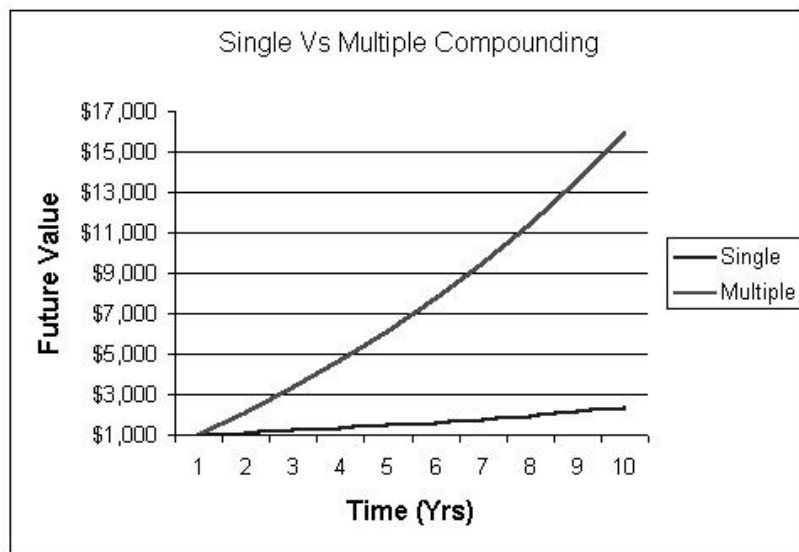
Notice how the single compound cash flow is relatively constant each year, but the multiple compound cash flow gets bigger every year. The size of the compound interest keeps increasing because an

additional $1,000 is <u>saved each year.</u> More and more interest builds up and therefore there is thus more to compound.

This is the secret to wealth creation.

The components for wealth creation are:

- **Equity and Savings:-** Initial equity and try to save at least 10% of what you earn or reinvest profits.
- **Long term focus:-** Make <u>time</u> your friend
- **Return:-** High yielding fully franked dividends from blue chip shares and the selling of covered call options.

It is important to emphasise that you and you alone, are responsible for how much you save or reinvest per period, and for how long. Reading this book can assist in helping you get the best return without taking on too much risk.

It is worth remembering that;

"Nobody but you, will look after you!"

Long term wealth creation will occur only with a disciplined approach. Once you embark on the journey towards wealth creation, it is important that you see the journey through and resist the temptation to stop.

For instance, you think that you will need to have a total of $50,000 in eight years to use as a deposit on a house. If you buy $5,000 of blue chip shares with an annual return of 10 per cent at the end of each year for eight years, will you make it?

The future value calculation is thus:

$$FV = C * [(1 + r)^t - 1] / r$$
$$FV = \$5,000 * [(1 + 10\%)^{8 years} - 1] / 10\%$$
$$FV = \$5,000 * [(1.1)^8 - 1] / .1$$
$$FV = \$5,000 * [2.1435 - 1] / .1$$
$$FV = \$5,000 * [1.1435] / .1$$
$$FV = \$5,000 * 11.4358$$
$$FV = \underline{\$57,179.44}$$

Thus you'll make it with $7,179 to spare.

Again, the reason for this little maths exercise is to reinforce the concept of compounding and how powerful it can be in building wealth.

The basic secret to build wealth is to own quality assets (such as blue-chip shares) over the medium to long term for growth and derive an increasing cash flow from those assets (dividends and call option premium). In time, the assets grow in value and the *passive* income you derive from these assets could replace the *active* income, such as your job.

Chapter 5: Some Options Jargon

The exchange traded options (ETO) market has been operating in Australia since 1976. There are over 72 different companies to choose from offering traders the opportunity to diversify. The following sections will explain what options are and the various option fundamentals.

Options - what are they?

An option is either the right to buy a share (a **call**) or the right to sell a share (a **put**) for an agreed price (**exercise or strike price**) on or before a predetermined future date (**expiry**).

It is important to understand that the buyer has **the right**, but not an obligation, to exercise the option.

The seller of the option has an **obligation** to fulfil the requirements of the contract, if called upon by the purchaser of the option to do so.

For this obligation the seller of the option receives a consideration (option price) referred to as the premium.
The standard number of shares covered by one option contract on the ASX derivatives market is 1000 (However, this amount may vary depending upon capital returns, asset splits and bonus issues).

Options over shares expire on the last Thursday of month.

All of the examples in this book assume 1000 shares per contract, and ignore transaction and commission charges.

Options Fundamentals

In order to understand options and to become relatively successful at trading with them it is important to understand certain key option fundamentals. These shall each be explained and illustrated.

Intrinsic Value

The intrinsic value of an option is the difference between the market value of the underlying share and the exercise price of the option contract. Intrinsic value can not be negative.

It may also be described as the real value of the option. For example,

Stock Price: $5.00			Stock Price: $5.00		
Call Strike	Intrinsic Value		**Put Strike**	Intrinsic Value	
$4.00	$1.00	In-the-money	$6.00	$1.00	In-the-money
$4.50	$0.50	In-the-money	$5.50	$0.50	In-the-money
$5.00	$0.00	At-the-money	$5.00	$0.00	At-the-money
$5.50	$0.00	Out-of-the-money	$4.50	$0.00	Out-of-the-money

Time Value

The time value of an option reflects the market's expectation of what the option price will be at expiry.
Time value is the greatest when the strike price and the underlying share price are equal (at-the-money).

Premium

- Premium is the price of an option
- Premium is determined by the market
- Premium is made up by both Intrinsic Value and Time Value

For example: **Stock Price: $5.00**

Call Series: $4.00 $4.50   **$5.00** $5.50

Option Premium: $1.10 $0.65 $0.30 $0.15

Intrinsic Value: $1.00 $0.50 $0.00 $0.00

Time Value: $0.10 $0.15   **$0.30** $0.15

Premium Decay

- Options are a *"Wasting"* Asset
- Premium decays to zero or to intrinsic value, if there is any
- Premium decays in an accelerating fashion

Time to Expiry (weeks)
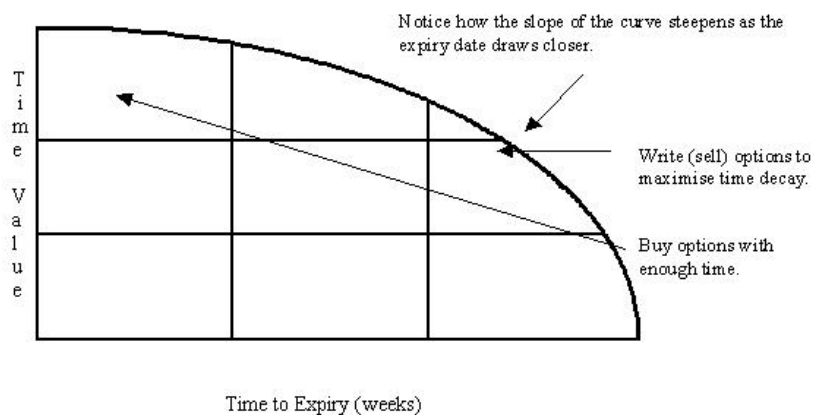
Rule of thumb: Two thirds of the time value of a three-month at or out of the money option decay in the final third of its life.

Chapter 6 shall explain more about this important attribute of options.

Delta

The sensitivity of an option's price, relative to the price movement in the underlying security.

- In-the-money options ranges from 0.5 - 1.0
- At-the-money options equal to 0.5
- Out-of-the-money options ranges from 0.0 – 0.5

For example, ANZ is trading at $18.00 and the $18.00 (at-the-money) call option with two months to expiry is worth $0.50. The Delta for this option is therefore 0.5.

ANZ rallies $0.30 to $18.30 and the $18.00 call option would also increase in value by approximately $0.15 to $0.65 ($0.30 multiplied by the Delta of 0.5).

Alternatively, if ANZ were to fall $0.30 the $18.00 call option would also decrease in value by $0.15 to $0.35.

Once an option has a Delta of 1, it acts exactly like the stock.

This rate of change in the option premium due to the change in price of the underlying stock is an important option fundamental.

The Delta is also a measure of stock exposure. Remember that if 1 option contract equals 1000 shares and you buy an at-the-money call option, then the call option will be equal to 500 shares. To work out an options share exposure, simply multiply the Delta by 1000.

Keep in mind as the share price exceeds the strike price of the call option, the intrinsic value increases in a 1:1 ratio with the underlying share value. Eventually, the option will be very deep in the money and it will act just like the share.

The Delta can also be thought of as the probability of an option being in the money on expiry. The higher the Delta, the greater the probability.

Theta

The sensitivity of the value of an option with respect to the time remaining to expiry. The Theta is the measure of the rate of premium decay.

For example, the ANZ $18.00 call option is currently $0.50 and the Theta is 0.015. Fifteen days pass and the stock price remains unchanged, the $18.00 call option would be roughly worth $0.275 ($0.50 – (0.015 * 15))

Gamma

The change in the Delta of an option for a unit change in the price of the underlying share. The Gamma is the measure of the rate of change for the Delta.

Refer back to the ANZ example above, when the stock rallied to $18.30 the $18.00 call option increased in value to $0.65. Prior to the rally the Delta of the $18.00 call option was 0.5, after the rally the Delta has now also increased to about 0.55. So, as the stock increases, the rate of the Delta does also. The Gamma is its measure.

Volatility

Volatility is the measure of the expected amount of fluctuation in the price of the particular stock.

Therefore, an options price is a function of the following variables.

- Stock Price   }
- Strike   }   Intrinsic Value

- Interest Rates }
- Dividends   }
- Volatility   }   Time Value
- Time to expiry }

Volatility is the only subjective variable.

The option-pricing model included with this book will allow you to price any call and put option. The user simply inputs the variables in the double blue boxes and the model will do the rest.

BS Option Pricing Model: Option Taker & Writer

Stock	TLS	a move required	Theoretical	Buyer	Seller
Share $	$5.50		Call Price	**$0.23**	**$0.25**
Strike $	$5.50	0.0%	Put Price	**$0.16**	**$0.18**
Days to expiry	81				
Risk free asset	6.00%		**Risk Margin***		
Volatility-Buyer	19.00%		Hi price range	$5.83	
Volatility-Seller	21.00%		Low price range	$5.17	
Margin interval	6.00%		Premium margin	$0.00	
Upcoming dividend	$0.00		Risk margin	$0.00	
Days to dividend	0		**Total margin**	**$0.00**	
Action	buy		**Share Probability**		
No contracts	4		< Strike $	50.00%	
Option type	call		> Strike $	50.00%	
Open position	$0.24				
Premium credit	$1,019.48	$0.25	**Sensitivities**		
Close position	**$0.34**		Delta: Call	0.575	
Stop loss	$0.14		Delta: Put	0.000	
Premium debit	$1,360.00		Theta: Call	0.002	
Net Profit*	**$286.44**	$0.07	Theta: Put	0.000	
			Intrinsic Value	$0.00	
Costs		GST	Time Value	$0.24	
Brokerage In	$50.00	$5.00	**Fair Value**	**$0.24**	
OCH Fee In	$4.08	$0.40			

The caption above is from the Options Price Model.

The following examples will illustrate how the price of call and put options can vary when certain events transpire.

Option Fundamentals: Price decrease, time lapse and volatility decrease

Stock	NCP		Theoretical	Buyer	Seller
Share $	$23.85		Call Price	$1.87	$2.00
Strike $	$23.00		Put Price	$0.91	$1.04
Days to expiry	30		Sensitivities		
Risk free asset	6.00%		Delta: Call	0.637	
Volatility-Buyer	50.00%		Delta: Put	0.363	
Volatility-Seller	55.00%		Theta: Call	0.023	
Margin interval	12.00%		Theta: Put	0.020	
Upcoming dividend	$0.00		Intrinsic Value	$0.85	
Days to dividend	0		Time Value	$1.08	
			Mid Point Valuation	$1.93	

Next day stock drops $0.85

Stock	NCP		Theoretical	Buyer	Seller	
Share $	$23.00		Call Price	$1.34	$1.47	Call price decreases
Strike $	$23.00		Put Price	$1.24	$1.37	Put price increases
Days to expiry	29		Sensitivities			
Risk free asset	6.00%		Delta: Call	0.542	←	Call delta decreases
Volatility-Buyer	50.00%		Delta: Put	0.458	←	Put delta increases
Volatility-Seller	55.00%		Theta: Call	0.024	←	Theta remains basically
Margin interval	12.00%		Theta: Put	0.020		unchanged
Upcoming dividend	$0.00					
Days to dividend	0					

15 days pass. Stock price unchanged

Stock	NCP		Theoretical	Buyer	Seller	
Share $	$23.00		Call Price	$0.92	$1.01	Call price decreases
Strike $	$23.00		Put Price	$0.87	$0.96	Put price decreases
Days to expiry	14		Sensitivities			due to time decay
Risk free asset	6.00%		Delta: Call	0.529	←	Call delta decreases
Volatility-Buyer	50.00%		Delta: Put	0.471	←	Put delta increases
Volatility-Seller	55.00%		Theta: Call	0.033	←	Theta increases
Margin interval	12.00%		Theta: Put	0.030		
Upcoming dividend	$0.00					
Days to dividend	0					

15 days pass. Volatility decreases by 20%

Stock	NCP		Theoretical	Buyer	Seller	
Share $	$23.00		Call Price	$0.56	$0.65	Call and put prices
Strike $	$23.00		Put Price	$0.51	$0.60	decrease dramatically
Days to expiry	14		Sensitivities			due to the volatility
Risk free asset	6.00%		Delta: Call	0.527		variable decreasing
Volatility-Buyer	30.00%		Delta: Put	0.473		
Volatility-Seller	35.00%		Theta: Call	0.021	←	Theta is lower due to
Margin interval	12.00%		Theta: Put	0.017		lower volatility
Upcoming dividend	$0.00					
Days to dividend	0					

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Option Fundamentals: Dividends

The dividend payout from a company has a dramatic effect on the pricing of both call and put options when the dividend falls before the option expiry.

Stock	NAB	Theoretical		Buyer	Seller
Share $	$25.95	Call Price		$0.56	$0.70
Strike $	$26.50	Put Price		$0.98	$1.12
Days to expiry	30	Sensitivities			
Risk free asset	6.00%	Delta: Call		0.434	
Volatility-Buyer	25.00%	Delta: Put		0.566	
Volatility-Seller	30.00%	Theta: Call		0.014	
Margin interval	6.00%	Theta: Put		0.010	
Upcoming dividend	$0.00				
Days to dividend	0				

NAB paying a $0.60 cash dividend. All other variables remain unchanged

Stock	NAB	Theoretical		Buyer	Seller	
Share $	$25.95	Call Price		$0.34	$0.47	Call price decreases
Strike $	$26.50	Put Price		$1.36	$1.49	Put price increases
Days to expiry	30	Sensitivities				
Risk free asset	6.00%	Delta: Call		0.321		Call delta decreases
Volatility-Buyer	25.00%	Delta: Put		0.679		Put delta increases
Volatility-Seller	30.00%	Theta: Call		0.012		
Margin interval	6.00%	Theta: Put		0.007		
Upcoming dividend	$0.60					
Days to dividend	0					

As you can see, the value of the call option decreases and the put option increases. This occurs because when the stock goes ex-dividend it is estimated that it will fall by the amount of the dividend. This event is therefore factored into the options price. There is a risk that traders could be exercised early for the dividend should the call options be in the money.

Advantages of Options

Options offer a range of investment opportunities that complement share market investing and trading. Here are some of them:

- **Income Generation:** Traders and traders can earn extra income over and above dividends by selling call options against their shares.

- **Speculation:** Traders expecting a stock to rise may decide to buy call options, sell put options, or a combination of both. Traders expecting a stock to fall may decide to buy put options, sell call options, or a combination of both. Either way the trader can close the option position prior to expiry to take a profit or limit a loss.

- **Leverage:** Leverage provides the potential to make a higher return from a smaller initial outlay than investing directly. However, leverage involves higher risk than direct investment in the underlying shares. **Leverage is the single most outstanding feature of options and warrants.**

- **Risk Management:** Put options allow traders holding shares to hedge against a possible fall in their value. This can be considered similar to taking out insurance against a fall in the share price.

- **Strategies:** By combining different options, traders and traders can create a wide range of potential profit scenarios.

Chapter 6: Time keeps on slipping

Chapter 5 introduced the concept of premium decay. Other than leverage, another special feature of options is the element of time decay. Unlike shares, options do have a limited shelf life, that is, an option will expiry at some point in the future. Whether it expires with any value is completely dependent on the option's strike price being in the money on option expiry. Traders and traders who are new to trading with options can find their short term investment literally disappear in front of them.

For instance, let's say a trader thinks News Corporation (NCP) shares will rise in value. Rather than buy the stock, our trader decides to buy an out-of-the-money $15.00 call option for $0.71. The call option the trader has bought has a life of just seven weeks.

Time to Expiry (weeks)
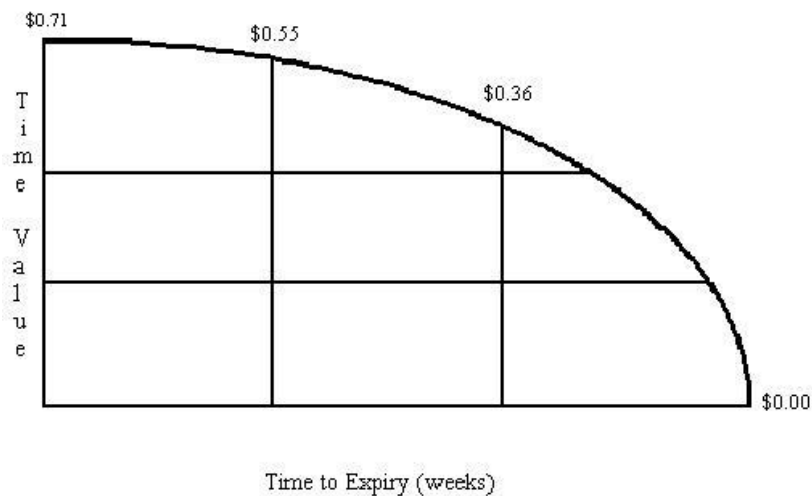
Let's now assume that after two and a half weeks, NCP shares have not risen or fallen in value and remain at $14.70. Our $15.00 call option would be worth around $0.55.

Now let's assume that another two and half weeks have past and NCP shares have not risen or fallen in value and remain at $14.70. Our $15.00 call option would now be worth around $0.36. Notice as more and more time is slipping away, the value of our $15.00 call option is becoming worth less and less. Our trader has had two thirds of the time slip away and that has resulted in the price of the call option decreasing from $0.71 to $0.36. Our trader has seen half the value of the call option simply disappear. This is the power of time decay.

Now the call option has one third of its life left and is currently worth $0.36. Let's assume another two and half weeks have past and today is now the options expiry day. NCP shares have not risen or fallen in value and remain at $14.70. How much do you think our trader's $15.00 call option is worth now? How about zero! Our trader has seen the $15.00 call option expiry completely worthless.

Now there are a couple of rules of thumb for traders to remember:

1. Two thirds of the time value of an at or out of the money call or put option decay in the final third of its life. (see the chart)
2. 80% of out of the money options expiry worthless
3. Premium decays to intrinsic value (if there is any)
4. Premium decays in an accelerating fashion. (notice the slope of the graph)

Traders who buy call or put options must be mindful about the time decay, otherwise the value of their option will slowly slip away!

Chapter 7: Being smart about buying call options

The trader who buys call options is speculating that the underlying stock will rise, and rather than buy that stock outright, the trader buys call options (or call warrants) instead. A call option is the right to buy a share for an agreed price (**strike price**) on or before a predetermined future date (**expiry**). A call warrant is similar to a call option, except it is issued by a financial institution.

The risk to the trader is if the stock doesn't rise at all, stays unchanged, or even declines in value. Should any of these events occur, then our trader could probably lose <u>all</u> the money he or she speculated with, because the option will decrease in value and eventually expire worthless. So why do people buy options and warrants? Its called LEVERAGE and it is the single most outstanding feature of options and warrants. Traders like to make big gains from a minimal outlay. However, Fear and Greed rule the market and one of the major mistakes people make when it comes to buying options or warrants is committing too much money to the trade. So how much is enough?

Consider the following. A speculative trader has $20,000 to invest and thinks Telstra (TLS) is a good buy at $5.40. Our trader could buy about 3700 shares outright or he or she could buy the 2-month $5.25 call option for about $0.32. Instead of buying 3700 TLS shares, our trader buys 62 contracts (62,000 options) of the $5.25 call option.

If the market goes up our trader will be a genius and make an absolute fortune. However, if the market stays the same or falls, our trader will either lose most if not all of his or her $20,000.00 and will feel like a mug!

What our trader didn't consider was the risk to his or her capital. What the trader actually did with his or her $20,000 was leverage it to $220,000.00 when they bought all those call options. Our trader

instead should have invested just $1920 into the call options, which then would have been roughly equivalent to buying $20,000 worth of TLS shares (there is our leverage). Why invest only $1,920 into call options? Well, the Delta of the $5.25 call option is 0.66 and if you divide that by the 3700 shares our trader could have bought with his or her $20,000 kitty you get 5606 shares. Since 1 options contract equals 1000 shares our trader should buy only 6 (rounded up) TLS $5.25 call options. At $0.32 per contract our trader outlays only $1920.

Now our trader still has sufficient capital that he or she can use for other trades.

Some other Rules for buyers of call options to consider:

- Only trade with what you can afford to lose!
- Consider buying call options when the stock is trending up, the stocks sector is trending up and the market is trending up.
- Consider buying in or at the money call options instead of out of the money ones.
- Do not get greedy.
- Give yourself enough time and avoid buying very short dated call options.
- Options have an expiry date. They may expire worthless!
- Be mindful of time decay!
- Have profit and loss exits based on price & time. Make sure you get out if either is reached.
- Know when you are getting out of the market before you get in.
- Choose strategies based on stock forecast.
- Remember options are already leveraged!
- Diversify.

The above rules also equally apply to the buying of put options when the stock is trending down, the stocks sector is trending down and the market is trending down.

Chapter 8: Not all derivatives are created equal!

Leverage is the single most outstanding feature of options and warrants, and traders are always keen to speculate with options or warrants. We know that call options and warrants can be risky trading instruments, as 80% of the time, out-of-the-money call options and warrants expire worthless.

Despite this fact, there are at least 13,000 active warrant accounts and 10,000 active options accounts in Australia. This would include both retail and institutional traders.

Trading with options and warrants has increased significantly since the demise of the tech sector and more traders have taken to trading equity call warrants than call options (over one third of all warrants traded on the ASX are call equity warrants).

Call options and warrants share the same derivative fundamentals such as time decay, strike price, expiry date etc, but they also have some unique differences.

Warrants are issued by a financial institution whereas call options are exchange traded via the ASX. Warrants settle on the same settlement schedule for shares, being $T + 3$ (trade day plus three business days) whereas options settle on a $T + 1$ basis.

Another unique feature of warrants is their conversion factor. Unlike exchanged traded options (ETO's) whereby 1 options contract equals 1000 shares or 1 option equals 1 share, 1 warrant may actually equal 3 shares or 4 shares. This varies from issuer to issuer.

The conversion will affect the price of the warrants, but not the leverage, so a higher conversion ratio means a lower warrant price. It is this lower price that warrant traders need to be mindful of, as the comparable call option could be significantly cheaper.

Consider the following illustration:

A trader is bullish on NCP and the shares are currently worth $9.29. Our trader decides to buy a November 2002 NCP $10.00 call warrant (NCPWGD) for $0.115. The conversion ratio is set at 5.

The NCP November 2002 $10.00 Call option (NCPWL) is currently worth $0.50 Both derivatives expire at the same time, have the same strike price and will provide the Trader with significant leverage if NCP rises in value, but which one is the cheapest to buy?

To work out the best derivative, our trader simply needs to multiple the value of the warrant by its conversion ratio. $0.115 times 5 equals $0.575 and our trader can now compare which derivative is the cheapest to buy.

Notice the call option worth $0.50 is cheaper than the call warrant worth $0.575! The call option is actually $0.075 cheaper to trade than the warrant! In other words, our trader would get more bang for his or her buck buying the call option than the call warrant (refer to the tables on the next page).

Notice also the significant difference in volume traded for both the call option and warrant. The call option has only had 24,000 options or 24 contracts traded thus far compared to the call warrants with 799,000. The marketeers of warrants always argue that their product is better because of the higher liquidity. I think warrant traders need to weigh-up paying a significant premium to have *"higher"* liquidity.

The two main reasons equity warrants usually cost more than their ETO cousins is due to the issuers marketing costs and paying commissions to brokers from the Offering Circular.

In most cases, call equity warrants will be more expensive than call options, and people who trade these highly volatile instruments should ensure they consider which derivative is the cheapest to trade. The warrant issuers are usually very competitive among other

warrant issuers, but they often lag behind the ETO market. Not all derivatives are created equal!

NCP November 2002 call options as of September 24, 2002

Security	Last	+/-	Volume	Bid	Ask	High	Low	Basis	Time	Status
NCP	929	21	8,378,381	929	930	935	906	XD	15:16:30	

Security	ExDate	ExPrc	Type	+/-	Last	Volume	Value	Bid	BidV	Ask
NCPWS	Nov02	750	Call	0	295	0	0	196	0	206
NCPWT	Nov02	800	Call	0	182	0	0	158	0	167
NCPEI	Nov02	850	Call	-18	117	10	11,700	122	10	127.5
NCPWN	Nov02	900	Call	13	96	24	20,960	93	10	97.5
NCPWM	Nov02	950	Call	8	70	33	21,820	68	1	72.5
NCPWL	Nov02	1000	Call	9.5	50	24	10,560	47.5	20	53.5
NCPWK	Nov02	1050	Call	8	36	100	35,600	36	100	41
NCPWJ	Nov02	1100	Call	-1	18	10	1,920	29	0	33
NCPWH	Nov02	1150	Call	-7	12	16	1,980	16	12	20
NCPWG	Nov02	1200	Call	0	15	0	0	14	0	17

NCP November 2002 call warrants as of September 24, 2002

Security	ExDate	ExPrc	Type	ConvFac	Last	+/-	Bid	Ask	BidV	AskV
NCPWGB	26/09/2002	1600	Call	4	3.2	0	0	1	0	60000
NCPIZA	24/10/2002	1000	Call	1	34.5	0	17	0	10000	0
NCPWOF	24/10/2002	1100	Call	4	2.2	0.2	2.2	2.5	140000	200000
NCPIOG	24/10/2002	1200	Call	1	9	0	4	5	50000	50000
NCPWOE	24/10/2002	1500	Call	4	0.8	0	0.8	1.3	25000	25000
NCPIMF	18/11/2002	875	Call	1	112	9	111	114	26000	32000
NCPIMG	18/11/2002	1450	Call	1	12	0	8.6	9.1	50000	50000
NCPWMN	28/11/2002	900	Call	4	29.5	1.5	28.5	29.5	60000	40000
NCPWPE	28/11/2002	900	Call	5	21.5	1	21.5	22.5	50000	50000
NCPISS	28/11/2002	950	Call	1	0	0	78	79	25000	25000
NCPWZL	28/11/2002	950	Call	4	23	1.5	23	24	130000	100000
NCPWGD	28/11/2002	1000	Call	5	11.5	1	11.5	12	100000	350000
NCPWAA	28/11/2002	1050	Call	5	16.5	0	8.6	9.1	50000	50000
NCPWZM	28/11/2002	1100	Call	4	11.5	-9.5	11.5	12	100000	100000
NCPWAO	28/11/2002	1150	Call	5	10.5	0	4.7	5.2	50000	50000
NCPWGE	28/11/2002	1150	Call	5	10.5	0	5.8	6.1	200000	200000
NCPWPH	28/11/2002	1200	Call	5	4.7	0	4.3	4.8	100000	100000
NCPWMO	28/11/2002	1250	Call	4	4.4	0	4.2	4.7	230000	100000
NCPWCA	28/11/2002	1300	Call	4	5	0	1.7	3.2	50000	50000
NCPWXH	28/11/2002	1350	Call	4	1.5	0	1.8	2.3	30000	30000

Chapter 9: Using the Banks Money!

Would you say that Assets and Wealth are similar in meaning? Let's see. The dictionary meaning for Wealth is:

"Riches; Abundant possessions."

Examples that would come to mind include real estate, cash, jewellery, art and stocks.
Would Assets have a familiar meaning to Wealth? Well, The dictionary meaning for Assets is.

"Any possession having value."

Examples that would come to mind include real estate, cash, jewellery, art and stocks.
So it would be fair to conclude, that Wealth and Assets are fairly synonymous.

From an accounting perspective, Assets = Equity + Liabilities.

If Assets and Wealth are synonymous and you refer back to the accounting definition for Assets, then it makes sense for individuals who wish to build their wealth that some form of "liability" or debt should be taken.

Wealth = Equity + Liabilities

For example:

If you have $10,000 in cash you have an asset worth $10,000. If you borrow $10,000 from the bank you will now have an asset worth $20,000, of which $10,000 is your equity and $10,000 is your liability (or debt).

So now that we have determined that Wealth and Assets are synonymous, and that reasonable Debt can help build Wealth, I will now explain how utilising margin lending can build Wealth and lower tax.

Margin Lending

Margin Lending is a revolving loan facility secured by a portfolio of shares and/or managed funds, and cash.

Gearing or leverage allows the trader to increase the size of his or her investment portfolio and potentially earn greater investment returns. The increased gains and losses through leverage are illustrated in the diagram below. This compares the gains and losses to equity in an unleveraged portfolio (light grey) with that of a leveraged portfolio (dark grey), comprising one-third equity and two-thirds debt (ie. 67% geared, ignoring tax effects).
Equity is defined as the total value of the portfolio, less any borrowed funds.
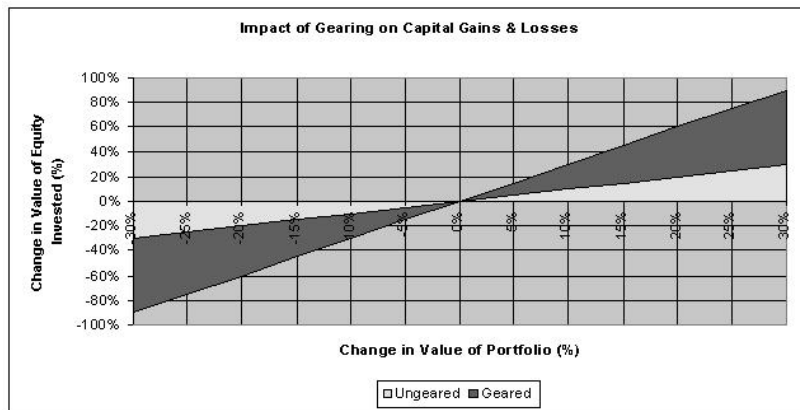
Assume the market value of the portfolio rose by 10%. Without leverage, this would also be the gain in equity. With leverage, because of the increased size of the total portfolio, the gain as measured by the increase in equity, is (in this example) three times

larger at 30%. (Had the market value of the portfolio fallen in value by 10%, leverage would have magnified the losses to the same extent).

The major risk with any margin lending account is the chance of receiving a margin call. A margin call occurs when the security value of the portfolio falls below the loan limit. Should an trader receive a margin call, he or she usually have about 24 hours to either add more security (such as cash), or sell stock, which is the worse thing to do as it destroys the trader's equity, not the margin lenders!
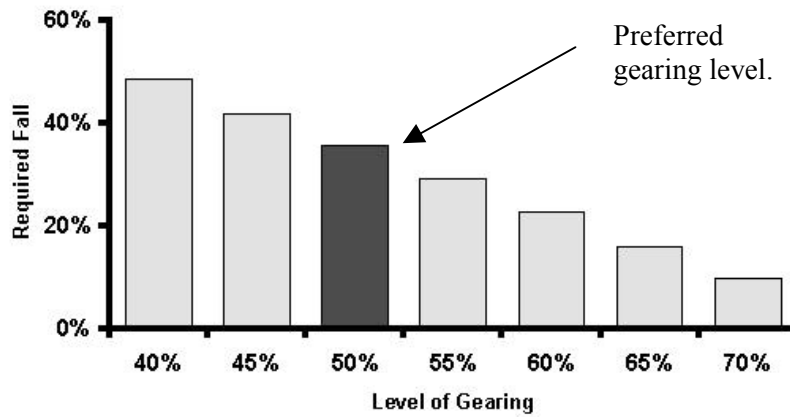
As can be seen from the diagram on the previous page, to <u>minimise</u> the chance of receiving a margin call traders should consider gearing the portfolio at around 50% (60% for very aggressive traders) and trade stocks with a security value of at least 65%. Take into account the margin-lending buffer and the chances of receiving a margin call are greatly reduced. (Most margin lenders provide a buffer of 5%. It is when this buffer is exceeded that a margin call is made.) The table below illustrates the damage of a 30% fall in the market for a portfolio leveraged at 50% and 70%.

50% Leveraged Portfolio		**70% Leveraged Portfolio**	
$50,000 Equity	$50,000 Loan	$30,000 Equity	$70,000 Loan
$100,000 Portfolio		**$100,000** Portfolio	
$75,000 Security Value 70% + 5% Buffer		$75,000 Security Value 70% + 5% Buffer	
$50,000 Loan		$70,000 Loan	
$25,000 surplus		$5,000 surplus	

50% Leveraged Portfolio		**70% Leveraged Portfolio**	
$50,000 Equity	$50,000 Loan	$30,000 Equity	$70,000 Loan
$70,000 Portfolio (30% Mkt decline)		**$70,000** Portfolio (30% Mkt decline)	
$52,500 Security Value 70% + 5% Buffer		$52,500 Security Value 70% + 5% Buffer	
$50,000 Loan		$70,000 Loan	
$2,500 Surplus		**-$17,500 Margin Call**	

Should the market decline by 30%, a portfolio geared to 50% will be okay, whereas the portfolio geared to 70% will suffer a $17,500.00 margin call.

The likelihood of a margin call can be minimised by:
- Adopting lower gearing levels than the maximum permitted
- Not capitalising interest
- Investing in shares which pay dividends
- <u>Obtaining premium incomes from the selling of call options.</u>

The other obvious benefit of having a margin lending account is for tax purposes. Essentially the interest incurred on borrowings is tax deductable. However, independent tax advice should be sought before opening a margin lending account. Traders should also ensure their life insurances are up-to-date should they take on a margin loan.

Traders serious about building their wealth should consider using a margin lending account.

The author recommends traders consider ANZ Margin Lending. For further details about ANZ Margin Lending, please telephone them on 1800 639 330 or visit www.anz.com.

Chapter 10: Strategy One

The Leverage Buy Write

Buy Write option strategies are used as an extra-income earning strategy for owners of shares, which involves offering, for a period of time, to sell the shares at a higher fixed price. The text book definition is *"A strategy requiring the simultaneous purchase of an underlying security with the aid of margin lending and the selling of at or out-of-the money call options representing the same number of shares."*

Another way to conceptualise the *Leverage Buy Write* strategy is if an investment property was bought for $200,000 and every quarter it was put up for sale at a price higher than the purchase price.

For example, a buyer enters into a contract to buy the investment property (underlying security) for $220,000 (strike price) and pays a 10% deposit of $22,000 (call premium). The buyer has the right to exercise his or her purchase contract (call option) and buy the property or let the contract expire worthless. Should the buyer decide to walk away from the purchase contract, he or she would forfeit the deposit of $22,000 which the trader keeps and still retains ownership of the property. The trader can now repeat the selling process again and again until the deal is completed. Unlike the property example however, the call premium received from the selling of the call option is not deducted from the strike price of the call option.

The *Buy Write* pay-off diagram on the following page illustrates the potential profit and loss of the strategy at different stock prices at expiry.

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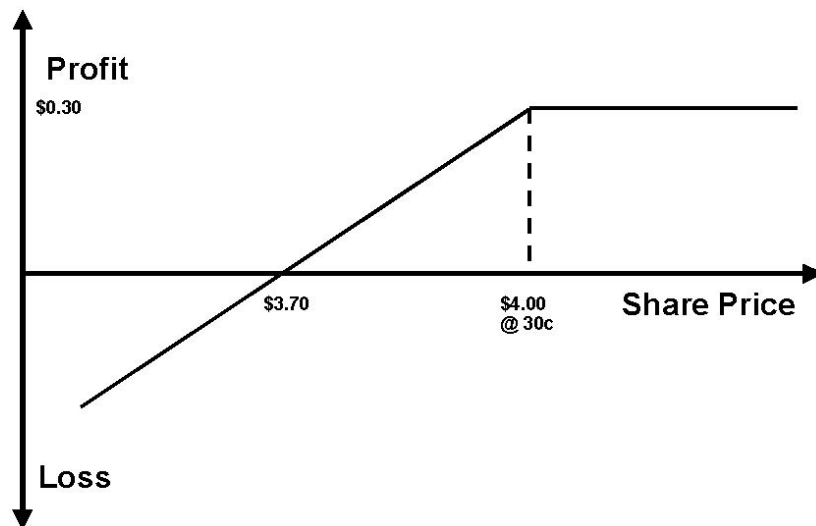
This payoff diagram depicts a trader buying the stock at $4.00, and selling the '*at the money*' $4.00 call option for $0.30 premium which represents the maximum profit for this *Buy Write*. The call premium also serves as a limited form of downside protection against the share falling. It is important to note that the trader in this illustration cannot make more that the premium received. The trader also must be fully prepared to sell his or her stock should the options be exercised and is still exposed to the downside movements in the stock price.

The strategy of owning the stock and writing the call will outperform outright stock ownership if the stock falls, remains the same, or even rises slightly. In fact, the only time that the outright owner of the stock will outperform someone who *Buy Writes* a stock is if the stock increases in price by a relatively substantial amount during the life of the call ie., strong bull market.

It is worth remembering that:

"Selling covered calls is a risk reducing strategy, not risk increasing."

Cash Flow Analysis

Traders are attracted to gearing or leverage as this allows the trader to increase the size of their investment portfolio and potentially earn greater investment returns. The flip side is leverage can also magnify a trader's losses when the market drops. So how can traders who use margin lending increase returns and lower risk at the same time?

Easy. Write covered call options on their geared shares.

For instance, a trader has $40,000 of his or her own equity and they decide to borrow another $40,000 from a margin lender, giving he or she $80,000. To make it easy to flow, we'll assume that this trader has bought $80,000 worth of News Corporation shares at a price of $15.98 with the aid of a margin loan. (In reality, a trader would invest into a diversified blue chip share portfolio, not one stock!). The trader then writes 45-day expiry $16.50 call option and receives $0.85 in option premium.

The table illustrates the cash flow for our trader.

```
Cash flow analysis if exercised.
NCP Example: Leverage buy write 5000 NCP @ $15.98
```

	Equity		Loan		Portfolio	Gearing
	$40,000	+	$39,900	=	$79,900	50%
Option Premium	$4,250		$35,650			45%
Exercised	$2,600		$33,050			41%
Costs	-$2,232		$35,282			44%

```
(including brokerage and interest)
   NEW     Equity             Loan
           $44,618   +        $44,618   =   $89,236   50%


Profit     $4,618   11.55%    or    95.8% pa
```

The first thing to notice is our trader has geared himself or herself at 50% and not the maximum gearing level of 70%. It is very important for traders to understand that the higher they leverage themselves, the greater the risk of receiving a dreaded margin call. At 50% gearing, the market would need to decline by more than 35%.

Notice our trader wrote $16.50 call options on his or her stock and he or she received $4250 in option premium. This option premium is credited to his or her loan account the next day and has the immediate effect of lowering his or her margin loan from $39,900 to $35,650. In one action, the trader has reduced his or her gearing from 50% to 45%.

Should our trader find that right is exercised on his or her $16.50 call option, he or she will realise a capital gain of $2600 and further reduce his or her loan from $35,650 to $33,050. Our trader naturally will incur costs such as interest on his or her outstanding loan and brokerage. Notice how the option premium received is greater than the costs incurred. Taking these costs into account and assuming the

call options are exercised, our trader will make a net profit of $4,618. That's 11.5% in 45 days or 95.8% annualised.

Now let's assume our trader decides to re-invest his or her net profit. He or she now has $44,618 of his or her own equity and decide to borrow the same amount from the margin lender. He or she now has a total of $89,236 to invest. The trader now repeats the process again and let's the powers of compounding do the rest.

Importantly, the trader would be able to repeat the process of selling call options on the shares until they are exercised. Now that's how to have your cake and eat it too!

Double Dividend Buy Write

Writing call options over dividend paying shares is a very popular options play. For instance, an trader buys CBA shares at $29.70 and offers to sell his or her shares at $30.50 strike price. Our trader earns $0.65 in option premium, plus the $0.62 fully franked dividend. The option will expire in 79 days time.

Notice that the trader has doubled the dividend on his or her CBA shares by selling an out-of-the-money call option. The table illustrates the return for a double dividend buy write on CBA.

Stock Bought:	CBA at $29.70
Option Sold:	$30.50 call at $0.65
Expected dividend:	$0.62
Number of days until expiry:	79
Net return if call option exercised:	4.65% or **21.48% pa**
Net return if call option is not exercised:	3.09% or 14.26% pa
Using margin lending at 50%	
Net return if option exercised:	7.72% or **35.65% pa**
Net return if not exercised:	4.59% or 21.2% pa
Brokerage charged:	1%

This is also an excellent strategy to employ with the aid of margin lending.

Traders pursuing this *Buy Write* strategy means either the trader owns the shares and is prepared to part with them if the option is exercised, or the trader should be prepared to remain the owner of the shares if the options are not exercised.

Chapter 11: Strategy Two

Leverage Put Writing

Selling put options is an excellent alternative strategy to the *Buy Write*. Selling a put option means the seller is <u>obliged</u> to buy the underlying share at the strike price of the put option. For this obligation the seller of the put option <u>receives</u> the option premium. Selling put options is akin to underwriting insurance.

The *Sold Put* pay-off diagram is identical to the *Buy Write*.
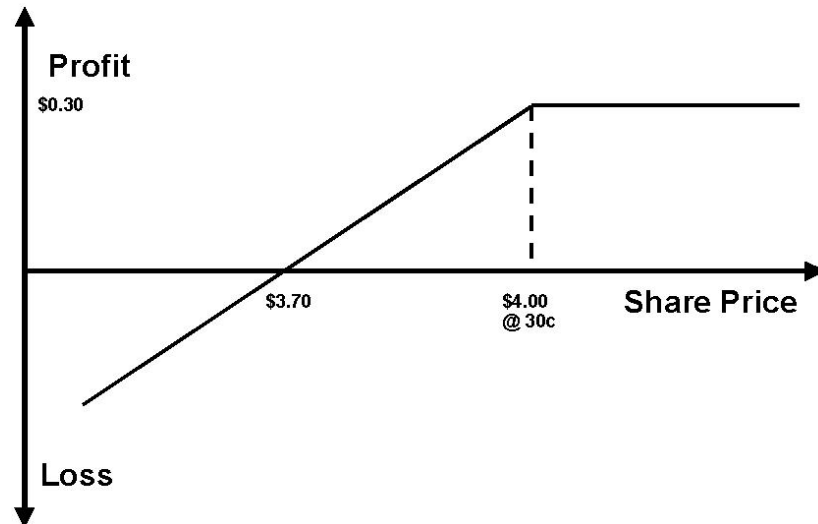
For instance, a trader may want to own 5,000 Telstra (TLS) shares, but does not want to buy them at the prevailing market price of $5.08, so instead he or she sells 5 out-of-the-money $5.00 put option for $0.16.

You are now obliged to buy 1000 TLS shares for every 1 put option contract you sell and because you sold 5 contracts, you will be paid $800 in option premium ($0.16 * 5,000). Like the buy write, there are only two outcomes to consider. If TLS at the end of the option expiry period is greater than $5.00, the put option will expire

worthless and you will not be "put" the stock and you keep the $0.16 option premium and you can repeat the process again.

On the other hand, if TLS is below the option expiry price at expiry, you will be *"put"* the shares at $5.00 and after you deduct your premium of $0.16, you have effective bought TLS shares at $4.86 ($5.00 - $0.16).

The trader who was *"put"* the stock has effectively bought the stock at a wholesale price of $4.86 compared to what they could have paid on the market at the time of writing the put option, which was $5.08. That's a 4.3% discount, plus the trader has earned interest on their money because they didn't initially buy the stock.

Selling put options is a great way to get set into a market but there is one major proviso that all traders should consider.

Only sell put options if you are prepared to buy the stock.
This means you are happy to own the stock and have the <u>money</u> to own the stock.

If you do sell put options and you do get *"put"* the stock, no worries. Now sell covered out-of-the-money call options on the shares you now own and keep the cash flow coming in!

Cash Flow Analysis

Traders are also attracted to gearing or leverage as this allows the trader to increase the size of the investment portfolio and potentially earn greater investment returns. The flip side is leverage can also magnify a trader's losses when the market drops. So how can traders who use margin lending increase returns and lower risk at the same time?

One method is to write covered call options on the geared shares and the other is to sell puts on shares they would be happy to own

For instance, a trader has $50,000 of his or her own equity and they decide to borrow another $45,000 from a margin lender, giving he or she $95,000. Instead of buying $95,000 worth of blue chips shares

and writing call options, our trader instead sells out-of-the-money put options to the share value of approximately $95,000.

Let us suppose our trader decides to sell the following put options that expire in 68 days time (Notice the trader writes put options on different companies to ensure diversification):

> Write 1 NCP $10.00 put for $0.72
> Write 2 BHP $10.00 put for $0.44
> Write 2 ANZ $17.50 put for $0.50
> Write 2 WBC $15.00 put for $0.47

The total share value of the put options sold is $95,000 and the premium received is $3,540
The table illustrates the cash flow for our trader.

Cash flow analysis if put options are not exercised.

	Equity	Loan	Portfolio	Gearing
	$50,000 +	$45,000 =	$95,000	47%
Option Premium	$3,540	$41,460		44%
Interest Earnt in CMT	$340	$41,120		43%
Costs	$231	$41,351		44%
NEW	Equity	Loan		
	$53,649 +	$53,649 =	$107,298	50%
Return	7.3% or	39.2% pa		

The first thing to notice is our trader has geared himself or herself at 47% and not the maximum gearing level of 70%. It is very important for traders to understand that the higher they leverage themselves,

the greater the risk of receiving a dreaded margin call. At 50% gearing, the market would need to decline by more than 35%. In this case however, our trader has not borrowed the money but has established a line of credit with the margin lender. Our trader will only pay interest if he or she draws down on the loan. If the put options all expire worthless, then our trader will pay no interest whatsoever and retain all the option premium of $3,540. That's 7.3% in 68 days or 39.2% annualised.

Since our trader has not bought any stock in the first instance, the costs of trading are significantly cheaper for an trader who writes put options instead of buying stock outright. The trader also earns interest on his or her money as well.

Now let's assume our trader decides to re-invest his or her net profit. He or she now has $53,649 of his or her own equity and decide to borrow the same amount from the margin lender. He or she now has a total of $107,298 to invest. The trader now repeats the process again and lets the powers of compounding do the rest.
Importantly, traders would be able to repeat the process of selling put options on the shares until they are exercised.

If the trader does get *"put"* the stock he or she is okay as he or she has the funds to buy the stock.

Since the trader now owns the stock, he or she can now sell covered out-of-the-money call options on the shares and keep the cash flow coming in!

Margins

Since I have been talking about selling put options, it is important I also talk about margins.
When you write call and put options to open, your account will be margined by the ASX Option ClearingHouse (OCH) via your broker. Traders are margined because an obligation is created to either sell shares (sold call option) or buy shares (sold put option). Margins also

apply to both bought and sold LEPO positions. If you only buy options, then margins are not payable.

The OCH recalculates margins at the end of each day to ensure an adequate level of collateral is maintained. The OCH either debits or credits your account with your broker according to whether your margin obligation has increased or decreased. Should there be a shortfall in your account you will usually be required to pay margins within 24 hours. When an obligation to the market no longer exists, all margin amounts are credited back to your account with your broker.

How are margins calculated?

The total margin charged to your account by the OCH is made from two margin components: The premium margin and the risk margin. The premium margin is the market value of the particular position at the close of business each day. The risk margin covers the potential change in the price of the option contract assuming the maximum probable inter-day movement in the price of the underlying stock. To calculate this risk margin, the OCH uses a volatility figure known as the margin interval.

The table on the next page illustrates the margin effect for a trader who sells put options.

Stock	ABC	% move	Theoretical	Buyer
Share $	$10.00	required	Call Price	**$0.47**
Strike $	$10.00	0.0%	Put Price	**$0.33**
Days to expiry	90			
Risk free asset	6.00%		**Risk Margin***	
Volatility-Buyer	20.00%		Hi price range	$10.50
Volatility-Seller	21.00%		Low price range	$9.50
Margin interval	5.00%		Premium margin	$3,357.12
Upcoming dividend	$0.00		Risk margin	$2,703.67
Days to dividend	0		**Total margin**	**$6,060.79**

Action	sell		**Share Probability**	
No contracts	10		< Strike $	50.00%
Option type	put		> Strike $	50.00%
Open position	$0.33			

Stock	ABC	% move	Theoretical	Buyer
Share $	$9.00	required	Call Price	**$0.09**
Strike $	$10.00	11.1%	Put Price	**$0.95**
Days to expiry	90			
Risk free asset	6.00%		**Risk Margin***	
Volatility-Buyer	20.00%		Hi price range	$9.45
Volatility-Seller	21.00%		Low price range	$8.55
Margin interval	5.00%		Premium margin	$9,547.10
Upcoming dividend	$0.00		Risk margin	$3,905.44
Days to dividend	0		**Total margin**	**$13,452.54**

For example, our trader decides to sell 10 ABC $10.00 put options for $0.33. The premium amount received by the trader is $3,300 before trading costs. Because he or she has sold put options his or her account is margined by the OCH at total of $6,060.79. This total margin comprises of $3,357.12 in premium margin and $2,703.67 in risk margin.

The OCH have determined that the margin interval to be applied to ABC shares is 5%. In other words, the OCH estimates that the ABC share price could rise as high as $10.50 ($10.00 plus 5%) or fall as low as $9.50 ($10.00 minus 5%). The margin interval will vary from stock to stock and is reviewed each week by the OCH (Your broker will be able to provide you with a current margin interval schedule). For the put option seller, the worst case scenario would arise if the market fell. So how is the risk premium amount of $2,703.67 derived? Since ABC has a 5% margin interval, the OCH revalues the

$10.00 put option should the stock trade at $9.50. At $9.50, the $10.00 ABC put would be worth approximately $0.60. The risk margin is the difference between this newly calculated price of $0.60 and the original option premium of $0.33, making the risk premium $0.27. Since our trader sold ten contracts, the risk premium stands at $2,703.67.

Now let's assume that the ABC share price declines to $9.00. Should this occur the total margin would be $13,452. The value of the $10.00 put option will now be worth $0.95 making the premium margin $9,547 (this would be the cost to close the 10 put option contracts). The risk margin is $3,905. If you add the premium margin of $9,547 and the risk margin of $3,905 you have a total margin of $13,452. Notice how the total margin has increased from $6,060 when the ABC shares were $10.00 to $13,452 when the ABC shares fell to $9.00. This is what you need to be mindful of should you sell put options. As the underlying share falls in value the total margin on any sold put option will increase. It is important you have sufficient funds to cover your option margins.

Earlier in the Chapter I said it is important to **only sell put options if you are prepared to buy the stock.** If you are not prepared to buy the stock and you do sell put options, then you must be prepared to close out your positions should they go against you. <u>This will mean you will lose money</u>. Selling puts without sufficient capital to buy the stock is a high-risk strategy.

Should you employ *Buy Write* or *Leverage Buy Write* strategies, then margins will be of no concern as you own the underlying share and can therefore meet the obligation of the call option contract if assigned.

Chapter 12: Strategy Three

The Leverage Strangle

"When two strategies are better than one!"

Essentially a *Short Strangle* is identical to implementing a *Buy Write* and *Sold Put* options strategy at the same time.

For instance, an trader is prepared to sell covered calls on TLS shares and is also happy enough to sell puts on TLS.

The table illustrates the possible returns:

```
Option Summary
Strangle
Stock to Buy              TLS      @      $5.49   Cum Div
Sell       24-Apr-02  $5.75  Call @  $0.10  $0.10
Sell       24-Apr-02  $5.25  Put @   $0.11
# of Days Until Expiry    73
Net Exercised Return:*     8.9%    OR      44.7% pa (Including Dividend)
Net Standstill Return:*    4.8%    OR      23.9% pa (Including Dividend)
Put Assignment:           $5.28 Average Purchase Price
Downside Protection:      $5.23   4.78%
```

The trader in this illustration is faced with three possible outcomes at expiry.

1. The shares at expiry are greater than $5.75 call option strike price and the trader is exercised on the call option (happy to sell the stock at $5.75). The $5.25 put option will have expired worthless. The upside breakeven for the trader is $6.06 and the trader would make a net return of 8.9% in 73 days or 44.7% pa.

2. The shares at expiry are less than the $5.75 call option strike price and greater than the $5.25 put option strike price. Both options therefore expire worthless. The trader still retains the stock, receives the $0.10 dividend and can now repeat the

strategy. Because the call and put options have expired worthless, the breakeven for the trader is $5.23. Should both options expire worthless the trader would make a net return of 4.8% in 73 days or 23.9% pa.

3. The shares at expiry are less than the $5.25 put option strike price and the trader is assigned the put option (happy to buy more stock at $5.25). The $5.75 call option will have expired worthless. If the trader does not want to be assigned on the "in the money" put option he or she would have to buy the put option back and pay the prevailing market price. Should the trader be assigned the TLS put option then he or she will own twice as many shares and the average cost would be $5.28. Once this has occurred the trader should cease the *Short Strangle* strategy and employ the *Buy Write* strategy.

Traders employing *Buy Write* strategies over dividend paying shares can effectively double the dividend. Trader's who employ the *Short Strangle* over dividend paying shares can effectively triple the dividend.

The *Short Strangle* pay-off diagram illustrates the potential profit and loss on the strategy at different stock prices at expiry.
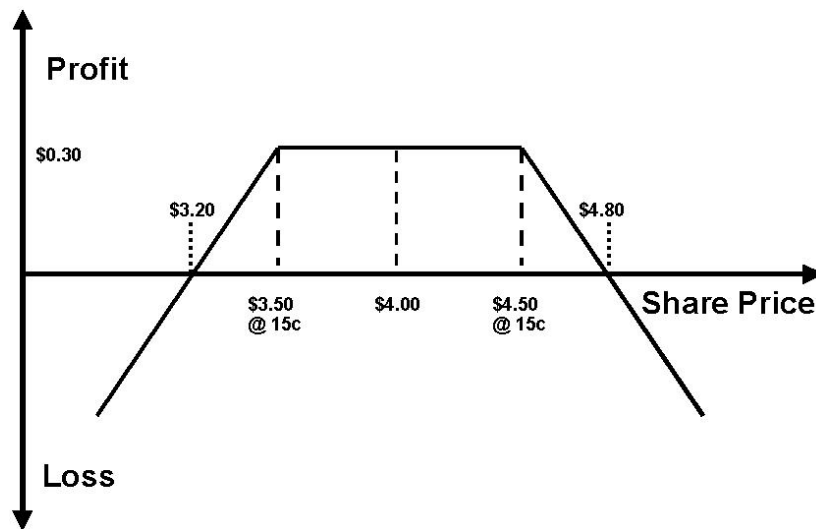
Leverage Short Strangle

Margin lending can also be used with this strategy. Traders, for instance, could buy the underlying stock with their own equity, write the call and put options and know that if they are exercised on their sold put, the line of credit established with margin lending will be sufficient to settle the trade.

The table illustrates the possible returns:

```
Leveraged Option Summary
Strangle Incorporating Margin Lending
Stock to Buy           TLS      @     $5.49  Cum Div
Sell        24-Apr-02  $5.75  Call @  $0.10 $0.10
Sell        24-Apr-02  $5.25  Put @   $0.11
# of Days Until Expiry    73
Net Exercised Return:*    12.1%    or    60.7% pa (Including Dividend)
Net Standstill Return:*    6.2%    or    31.0% pa (Including Dividend)
Put Assignment:          $5.29 Average Purchase Price
Leverage at              30%
Downside Protection:     $5.25  4.34%
Margin Call              $1.96 (should the stock fall below this price)
Probability of Margin Call      0.00%
```

In this example, the trader has limited his or her leverage to 30%, meaning for every $1.00 invested, $0.30 is borrowed from the margin lender and the balance of $0.70 is equity from the trader.

Traders should be mindful of their leverage levels before employing a leverage strangle. It is important to maintain a leverage level of no more than 50%.

Chapter 13: Strategy Four

Synthetic Long Buy Write

"Better than the real thing!"

Synthetic industrial diamonds are used on the end of drill bits to aid the drill bore through thick bedrock. The drillers use these synthetic industrial diamonds because they retain the superior hardness properties of diamonds, yet cost very little to make. The drillers could have used natural diamonds for their drill bit, but the cost would be enormous.

A similar situation exists for traders in the share market. There is a phase in the broking industry called "going long". Going Long means a trader is "bullish" (The trader thinks the shares will rise). The trader buys shares with the view of selling them in the future for a higher price. There are several ways an trader can go "long", buy the stock outright, buy a call option or enter into a *Synthetic Long Stock* option position.

A *synthetic long stock* option position is a strategy requiring the simultaneous purchase of a call option and the selling of a put option with the same strike price and expiry date.

For instance, a trader is bullish on TLS (Telstra Corp. Ltd) and wants to buy the stock. TLS is currently trading at $5.44 and the trader is prepared to invest $38,500.00 into the stock. Rather than buy approximately 7,077 shares, the trader buys 7 June $5.50 call options for $0.29 and sells 7 June $5.50 put options for $0.35. The trader actually makes a credit of $0.06. The breakeven for the trader is $5.44, which is the same price our trader could have bought the stock for.

All the trader needs to do is fund the OCH margins, which will be fully covered by the $38,500 equity that would have been used to buy the TLS shares. Keep in mind that the opportunity cost of buying

shares is not receiving interest on the cash any more. With the *Synthetic Long Stock*, the trader will still earn interest on his or her money and retain a *"long"* stock position.

A downside to the *Synthetic Long Stock* compared to owning the shares is the trader will not receive any dividends. Dividends are paid only to shareholders and owning a stock synthetically means there is no entitlement to dividends. Other than is this, a *Synthetic Long Stock* will behave the same as an ordinary share, meaning if the share declines in price, so will the *Synthetic Long Stock*.

Because our trader has bought a call option and sold a put option they are net long the stock (add the Deltas for the call and put options together and they equal 1). Should TLS go up in value by $0.50 then the *Synthetic Long Stock* would also rise $0.50. Should TLS decline in price by $0.50, then the *Synthetic Long Stock* would also decline $0.50. The synthetic acts the same as the ordinary share.

Keeping in mind that our trader was originally bullish on TLS and was very much prepared to buy the shares initially, why not employ a *Synthetic Long Stock* as an alternative to buying the stock outright?

Should TLS rise in value, our trader can do one of two things; (1) exercise the call option and buy the stock, or (2) sell the call options for more than he or she paid for them and buy back the put options for less than he or she sold them for.

Should TLS decline in value below $5.44, our trader can do one of two things; (1) be assigned the $5.50 put option (buy the stock) or (2) buy back the $5.50 put options and let the $5.50 call options expire worthless.

Traders attempting this strategy should consider it only as an alternative to buying the stock outright.

The *Synthetic Long Stock* pay-off diagram below illustrates the potential profit and loss on the strategy at different stock prices at expiry.
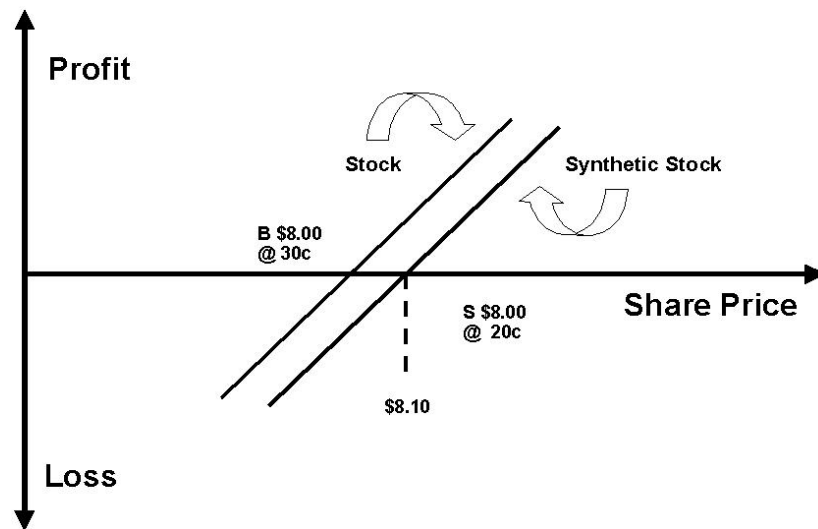
Synthetic Long Stock Buy Write

A trader buys the call option so he or she can capture possible upside in the share price and sells the put option to help pay for the call he or she just bought. Traders employ this type of strategy as an alternative to buying the stock out right.

Traders who do employ this strategy can also write short-term call options against the *Synthetic Long Stock* position. This would replicate the *Leverage Buy Write* strategy.

For instance, a trader is thinking about a Leverage Buy Write strategy for NCP. Our trader has $16,000 of his or her own equity and will borrow another $16,000 with the aid of a margin loan (geared at 50%). NCP as of January 12, 2002 is worth $15.19 and

our trader buys 2,000 shares and writes 2 February 2002 $15.50 call options and receives $0.59 in option premium. Since our trader is buying the stock, he or she will be paying interest on the money he or she borrows.

The table illustrates the possible returns.

Starting Equity:	$16,000
Stock bought:	NCP at $15.19
Option sold:	February $15.50 call at $0.59
Number of days until expiry:	38
Margin Loan interest rate:	6.99%
Net return if call option exercised:	$929.83 (6.1% or 58.8% pa)
Net return if call option not exercised:	$650.83 (4.3% or 41.2% pa)
Costs incurred if exercised:	$870.17
Costs incurred if not exercised:	$529.17

On the otherhand, our trader could employ a *Synthetic Long Stock Buy Write* strategy. Rather than buy 2,000 shares, the trader buys 2 May 2002 $15.00 call options for $1.42 and sells 2 May 2002 $15.00 put options for $1.24. The trader actually pays $0.18. The breakeven for the trader is $15.18, which is a $0.01 premium to the stocks current share price of $15.19. Since our trader is now "long" 2,000 shares he or she can write 2 February 2002 $15.50 call options and receive $0.59 in option premium. Since our trader hasn't bought the stock, he or she will have no margin loan interest to pay. Instead he or she will earn interest on his or her equity as it is in a cash management trust (CMT). Our trader will be margined by the option-clearing house, which will be covered by the $16,000 equity.

The table illustrates the possible returns.

Starting Equity:	$16,000
Synthetic bought:	NCP at $15.18
Option sold:	February $15.50 call at $0.59
Number of days until expiry:	38
Net return if call option exercised:	$1,494.96 (9.3% or 89.7% pa)
Net return if call option not exercised:	$1,008.96 (6.3% or 60.5% pa)
Costs incurred if exercised:	$385.00
Costs incurred if not exercised:	$231.00

Both strategies illustrate a leverage buy write, but the synthetic version is superior as it will provide an additional profit of $565.13 if exercised, and $358.13 profit if it is not exercised. The reason for this extra profit is the synthetic version is significantly cheaper to trade than the real thing.

Chapter 14: Strategy Five

Bull (Calendar) Price Spread with Calls

The final strategy of the *Fantastic Five* is the *Bull (Calendar) Price Spread with Calls* (BCPSwC). To employ this strategy, an trader would buy an at-the-money call option and sell an out-of-the-money call option with the same expiry date or they would buy a long dated at-the-money call option and sell a short dated out-of-the money call option.

The table illustrates the possible returns for a *Bull Price Spread with Calls*:

		STRATEGY SUMMARY			Share		NAB
Expiry	Strike		Premium		Last		$34.47
Buy	Dec-02 $34.00 Call	@	$1.81	Delta	0.568		
Sell	Dec-02 $37.00 Call	@	$0.69	Delta	0.294		Equity
Spread Cost			$1.12	Net Delta	0.274		Required
No contracts		4					$4,480.00
Stock equivalent		1097	NAB	Shares			$37,816.23
Days to Expiry		122					
Effective Gearing		88.2%	Share price move required				Probability
Breakeven on Stock		$35.12		1.9%			43.74%
Maximum Net Profit		$1.88		7.3%			27.50%
Maximum Net Loss		$1.12					45.39%
Resulting in a % Profit of		167.9%	or	502.2% *pa*			Share Move
Replicate BSwC with Stock		Buy @	$34.47	Sell @	$41.32		6.30%

In this illustration, our trader has bought four at-the-money $34.00 call options for $1.81 and has also sold four out-of-the-money $37.00 call options for $0.69. The selling of the out-of-the-money call option does not incur any Option ClearingHouse margins as our trader has actually written a "covered" call. The bought at-the-money call option provides the required collateral to cover the sold out-of-the-money call option. This strategy is actually identical to a buy write, with obvious difference being the trader has bought a call instead of buying the physical shares.

Before costs our trader has paid $1.12 for the spread or a total outlay of $4,480.00. If the NAB shares at the end of the options expiry are greater than $37.00, our trader will make $1.88 profit per contract. That's 167.9% in 122 days or 502% pa.

Should NAB be below $34.00 at expiry, our trader would lose all the money they paid. The breakeven for our trader is $35.12 ($34.00 + $1.12). Our trader requires the underlying shares to rise only 1.9% to breakeven.

This particular Bull Spread with Calls example is equivalent to buying exactly 1097 NAB shares. Determining the exact amount of physical shares is very easy. All you need to do is determine the net Delta of the spread which in this example is 0.274 and multiply the net Delta by the total number of options contracts bought by the trader (4,000 * 0.274 = 1097). If another trader bought 1097 NAB shares at $34.47, they would need to sell them for $41.32 to make the same dollar profit as the trader who employed the *Bull Spread with Calls*.

In order to make the maximum profit, our trader requires NAB shares to increase by 7.3% and remain greater than $37.00 on expiry day. Had out trader instead bought the actual 1097 NAB shares, they would need the share price of NAB to rise by 19.9% to make the same profit.

The *Bull Price Spread with Calls* pay-off diagram below illustrates the potential profit and loss on the strategy at different stock prices at expiry.
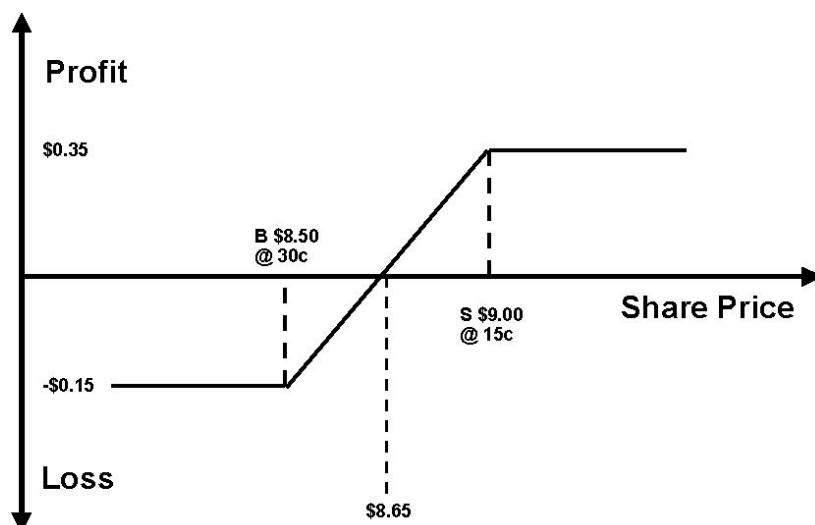
The *Bull Calendar Price Spread with Calls* is employed when an trader buys <u>long dated at-the-money call options</u> and sells short dated out-of-the money call options. This strategy is identical to the *Buy Write* strategy with the only exception being the trader buys a long dated expiry call option instead of the underlying share.

For instance, NAB is currently worth $34.47 and a trader buys a June 2004 $34.00 call option for $5.80 instead of the underlying share. If our trader had decided to employ a *Buy Write*, he or she would need to buy 1,000 shares of NAB. That would cost atleast $34,470 (1,000 * $34.47) before costs. By buying a long dated call option instead of the underlying share, it would cost our trader only $5,800 excluding costs.

The trader then sells the December 02 $37.00 call for $0.69. The risk to client is not $5.80 but $5.11 per contract ($5.80 - $0.69). If NAB shares at the end of December are greater than $37.00, our trader will need to buy back the December 2002 $37.00 call option and either

resell another short dated call option or consider selling the bought June 2004 $34.00 option call option. The good news for our trader is the bought June 2004 $34.00 call option would be worth significantly more than the price they originally paid because the underlying share has risen in value from $34.47 to $37.00.

Should the December $37.00 call option expire worthless, our trader can repeat the process of selling call options up to the June 2004 expiry.

The trader needs to be mindful that their June 2004 $34.00 call option has a limited shelf life and will expire. It is important the trader tries to make enough option premiums by selling short dated calls to at least pay for the long dated call option.

The risk to the trader is also limited to the amount paid for the long dated call option. Our trader is not subjected to any margin calls or OCH margins.

Chapter 15: Basic Technical Analysis

Technical Analysis is the art of predicting share price movements with the aid of charts overlayed with various confirming and leading indicators.

Traders of options usually rely on Technical Analysis to help them determine the stocks to trade options on.
To become successful at trading options, traders need to determine whether a stock is maintaining its trend or is about to change trend and adopt either a "*long*" or "*short*" positions.

Share traders often indicate that they have difficulty understanding technical analysis. Set out below is a summary of the technical charting terms commonly used.

Open High Low Close Chart

The Open High Low Close chart illustrates a share's opening price, intra-day high price, intra-day low price and the closing price.

Stocks that close at or near their intra-day high illustrate a positive price action.
Stocks that close at or near their intra-day low illustrate a negative price action.

Chart 1. Open High Low Close Chart
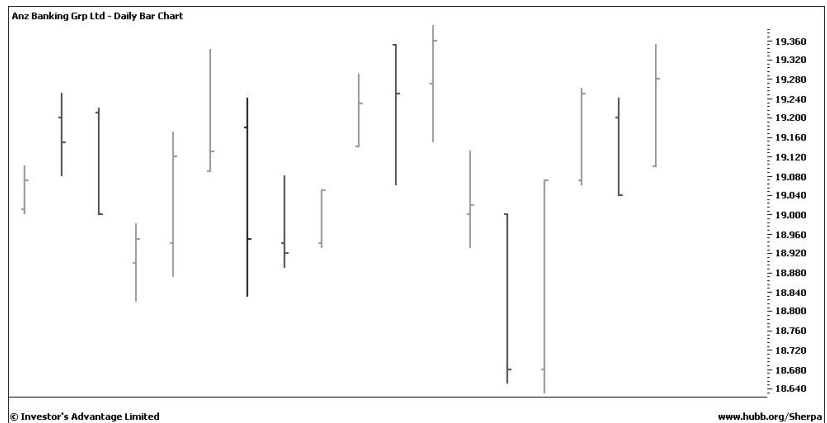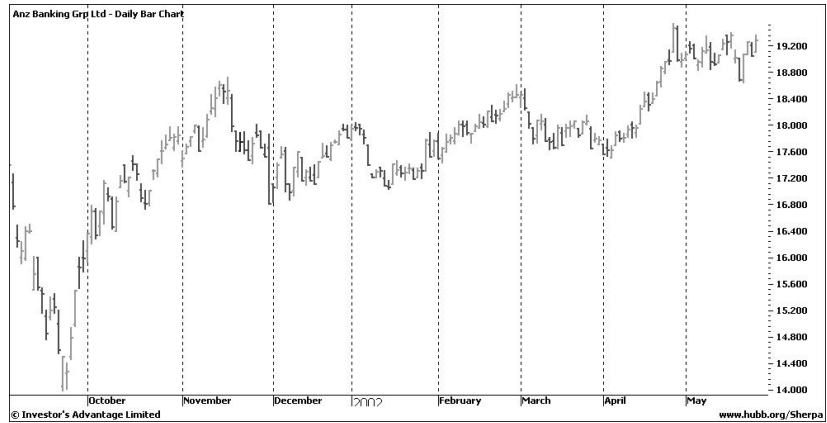
Trend Lines: "The trend is your friend!"

Trend lines indicate the overall price direction for a stock. Trend lines can be bullish or bearish. A proper uptrend is established when a stock illustrates higher highs and higher lows. A proper downtrend is established when a stock illustrates lower lows and lower highs.

Support and Resistances Zones

Charts can illustrate possible price support zones. A support zone can illustrate a stock's fair price based on previous trading history.

A stock is illustrating bearish signals should it break through a support zone.

Charts can illustrate possible price resistance zones. A resistance zone can illustrate previous high prices where a stock was unable to break through.

A stock is illustrating bullish signals should it break through a resistance zone. Previous resistance zones can become support zones.

Chart 2. Trend, Support and Resistance Lines.

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Weighted Moving Average

A Weighted Moving Average is a <u>confirmation indicator</u>. When the short term WMA comes from below and crosses the medium and long term WMA that indicates the stock is a **<u>buy</u>**. When the short WMA comes from above and crosses the medium and long term WMA that indicates the stock is a **<u>sell</u>**. The WMA does lag the normal moving average.

Chart 3. Weighted Moving Average

Commonwealth Bank. - Daily Line Chart [Close]
Commonwealth Bank. - Multiple MA [5, Close, 15, Close, 55, Close]

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Momentum

The Momentum indicator is a <u>leading indicator</u>. The Momentum indicator measures the amount that a stock's price has changed over a given time span. Positive momentum (above 0) is bullish while negative momentum (below 0) is bearish.

Chart 4. Momentum

Commonwealth Bank. - Daily Line Chart [Close]

Commonwealth Bank. - Momentum [7, Close]

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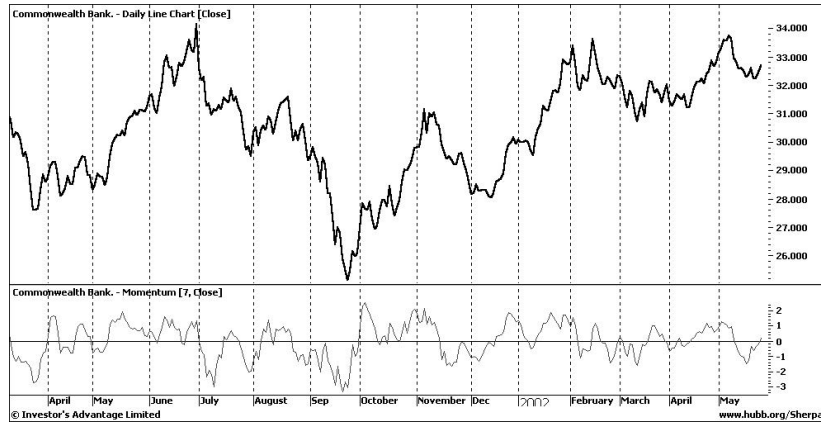
Relative Strength Index

The Relative Strength Index compares the exponential moving averages of gains and losses over a specific term. The indicator compares a stock's number of up periods to its number of down periods within a specified period. The RSI on the two charts below is set with a period of 10 days.

A RSI above 70 indicates an overbought stock and a RSI below 30 indicates an oversold stock. The RSI is also a leading indicator.

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Chart 5. Relative Strength Index
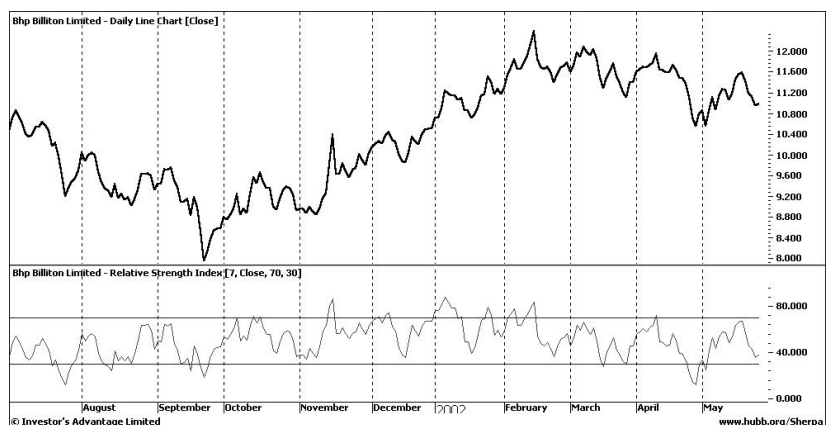
MACD Line

MACD is one of the most widely used indicators. It stands for Moving Average Convergence Divergence. MACD provides the following signals:

Buy:
The Moving Average line exits the histogram from below and turns up so that both it and the histogram trend agree with the direction of the latest trend.

Sell:
The Moving Average line exits the histogram from above and turns down so that both it and the histogram trend agree with the direction of the latest trend.

Chart 6. MACD Line

News Corporation - Daily Line Chart [Close]
News Corporation - MACD Line [5, 25, 5]
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www.hubb.org/Sherpa
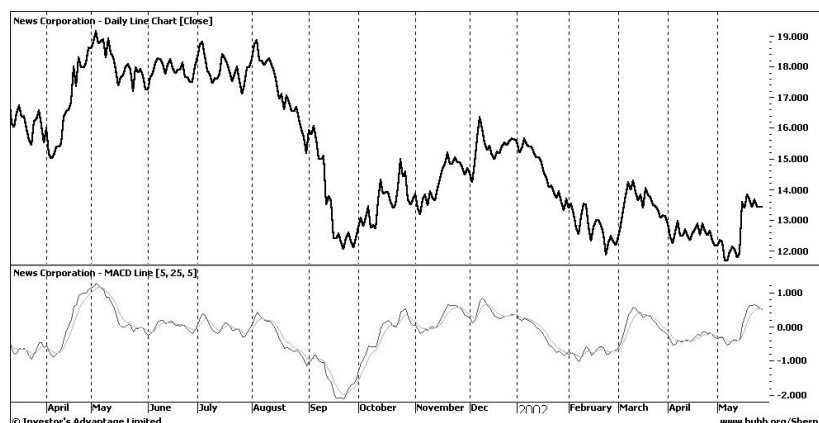
DMI Index

The Direction Movement Index (DMI) is essentially a trend or directional indicator. The idea behind the indicator is simply to alert the trader to the strength of the trend.

As such it is more reliable for longer periods. This indicator is valuable as a stand-alone indicator, but is more suited as a filter or additional tool to filter out much of the noise produced by other indicators. Use in this way can assist in reducing the number of false signals produced by the other indicators. It can also be used to compliment trendline analysis.

The DMI combines the following:

- **+DI** shows the strength of the upward movement
- **-DI** shows the strength of the downward movement
- **ADX** is the smoothed average between +DI and -DI

Chart 7. DMI Index

News Corporation – Daily Line Chart [Close]

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The ADX line combines the +DI and –DI and then applies a moving average to smooth the data. The combination of both the +DI and –DI means the ADX only provides an indication of the strength of the trend, not direction. An upward moving ADX can indicate either a strong up trend or a strong down trend.

SHERPA.

One of the best technical and fundamental analysis programs that I have come across is SHERPA.

SHERPA is a joint production between Trader's Advantage and the Hubb Organisation.

SHERPA is a simple to use software package that offers personal traders the industry's most powerful financial analysis tools. It analyses company records with up to 30 fundamental performance indicators. It charts stocks for trends using 50 separate movement indicators.

SHERPA allows you to scan the entire market or just your own carefully selected watch lists for those companies or markets that are both fundamentally desirable and technically attractive.

The scanning function in SHERPA is very impressive. For further details about SHERPA, call the Hubb Organisation on 1300 767 699 or visit www.hubb.org/sherpa.

Chapter 16: Fundamental Analysis

Fundamental analysis is the study of financial information, company management, dividend history, competitive position within a sector and other types of information that are financial in nature.

The fundamental analyst studies a company's balance sheet and income statement to judge a stock's long-term prospectus as an investment.

The current market value of a stock reflects the markets current perception of its current and future value. This perception is affected by virtually all information available in the market at any time, including financial as well as non-financial information, fact and market rumour, and industry and sector news either directly or indirectly related to the company itself.

Price Earnings Ratio (PE)

One very popular fundamental indicator is the price to earnings ratio (PE ratio). This ratio is used by traders to rate and compare stocks. To calculate a company's PE ratio, divide the *current market value of the share* by the *current earnings per share*. To calculate a company's earning per share (EPS), divide the *net profit for the year* by the *number of fully paid ordinary shares*.

For example, the Commonwealth Bank's (CBA) 2002 annual income statement showed a $2.656 billion profit. The company has 1.244 billion ordinary shares outstanding. Earnings per share for CBA is $2.13 per share ($2.656bln divided by 1.244bln equals $2.13). The company's stock price last traded at $31.35 per share. The price to earnings ratio is 14.7 ($31.35 divided by $2.13 equals 14.7).

The PE ratio tells you how many times last year's earnings you are paying for at today's market price. All else being equal this figure is how many years you would need to own the shares before you received your money back and has a free carried interest cost. In the CBA example, you would need to own the shares for 14.7 years.

As a general rule, lower PE ratio means lower risk for traders. However, company's profits do fluctuate and the market does not value a share on last year's earnings but on the expected future earnings.

Keep in mind that any ratio is only useful when it is studied in comparative form. Compare the PE ratio to that of other companies in the same sector and the market as a whole.

Dividend Yield

Another popular fundamental indicator is the dividend yield. This shows the current yield from dividends expressed as a percentage of the share price. As the share price falls, the dividend yield rises. Like comparisons between PE ratios, the dividend yield is a useful indicator you can use for narrowing the field when you are selecting stocks for trading.

To calculate a company's dividend yield, divide the *dividends per share* by the *current share price*.
For example, the Commonwealth Bank's (CBA) dividend per share is $1.50 and the company's stock price last traded at $31.35 per share. The dividend yield is 4.8% ($1.50 divided by $31.35 equals 4.8%). To calculate a company's payout ratio, divide the *dividends per share* by the *earnings per share*. CBA's payout ratio is 0.704 ($1.50 divided by $2.13 equals 0.704 or 70.4%). This means CBA pays out 70.4% of its profits as dividends to shareholders and retains 29.6% of its profits.

Return on Owner's Equity (ROE)

The return on owner's equity (ROE) ratio is extremely important to the shareholder of the company because it indicates the rate of return that management has earned on the capital provided by the shareholder after accounting for payments to all other capital suppliers.

To calculate a company's ROE, divide the *net profit for the year* by *total shareholders equity*.

For example, the Commonwealth Bank's (CBA) net profit is $2.656 billion and the company's total shareholders equity is $21.056 billion. The ROE is 12.61% ($2.656 bln divided by $21.056 bln equals 12.61%).

Approaches to the valuation of common stock

Because of the complexity and importance of valuing common stock, various techniques for accomplishing this task have been devised over time. These techniques fall into one of two general approaches. *The discount cash flow valuation techniques*, where the value of a stock is estimated based upon the present value of some measure of cash flow such as dividends. The second measure is the *relative valuation techniques*, where the value of a stock is estimated based upon its current price relative to variables considered to be significant to valuation such as earnings.

An important point is that both of these approaches and all of these valuation techniques have several common factors. First, all of them are significantly affected by the traders *required rate of return* on the stocks because this rate becomes the discount rate or is a major component of discount rate. Second, all of them are affected by the *estimated growth rate of the variable* used in the valuation technique, for example, dividends, earnings or cash flow. As a result, different analysts using the same valuation techniques will derive different estimates of the value for a stock because they have different estimates for these critical variable inputs.

Dividend discount model (DDM)

The cleanest and most straightforward measure of cash flow is *dividends* because these are clearly cash flows that go directly to the trader, which implies that you should use the cost of equity as the discount rate. However, this dividend technique is difficult to apply to companies that do not pay dividends during periods of high growth, or that currently pay very limited dividends because they

have a high rate of return investment alternatives available. On the other hand, an advantage is that the dividend discount model (DDM) is very useful when discussing valuation for a stable, mature company where the assumption of relatively constant growth for the long term is appropriate.

The DDM formula is very simple to use and can be simplified by the following expression:

$$V_j = D^1 / k - g$$

Where: V_j = the value of stock j, D^1 = dividend payment in the current period times $(1 + g)$, k = the required rate of return on stock j and g = the constant growth rate of dividends.

Let's use the DDM formula to value CBA shares. The following table summaries CBA's current fundamental data[2].

Stock	Commonwealth Bank
Current Price	$31.35
EPS	$2.13
DPS	$1.50
RFR (10yrBond)	5.80%
Risk premium	3.00%
ROE	12.61%
PE ratio	14.72
Total Equity	$21,056,000,000
Op. Profit@Tax	$2,656,000,000
No of Shares	1,244,015,435

The first variable to calculate is **g**. The *constant growth rate of dividends* is calculated by the *retention rate* multiplied by *ROE* (**g** = retention rate * ROE).

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[2] As of August 26, 2002

The retention rate is net earnings retained by the company. Since we already know that CBA pays out 70.4% of its dividend to shareholders, it must retain 29.6% of its earnings. We have already calculated CBA's ROE, of 12.61%.

Therefore **g** equals 3.73% (29.6% * 12.61)

The second variable to calculate is D^1. After calculating **g**, it is a simple matter to estimate D^1, because it is the current dividend times (1 + **g**). CBA's current dividend is $1.50 and when it is multiplied by 1.0373 (1 + 3.73%) equals $1.56.

The third and final variable to calculate is **k**. The *required rate of return on stock j* is calculated by the *nominal risk free rate of return* plus a *risk premium* (NRFR + RP). The nominal risk free rate normally used by analysts is the 10-year bond rate. The 10-year bond rate used for this calculation is 5.80%. You can normally find this bond rate in the financial pages in most newspapers.

Most traders require higher rates of return on investments if they perceive there is any uncertainty about the expected rate of return. This increase in the required rate of return over the NRFR is the risk premium (RP). Although the required risk premium represents all uncertainty, it is possible to consider several fundamental sources of uncertainty including: 1) business risk, 2) financial risk, 3) liquidity risk, 4) exchange risk and 5) country risk.

The risk premium is determined to be 3%, making **k,** *the required rate of return on stock* 8.8% You may ask why a 3% risk premium? The risk premium is a subjective variable so there is no set formula to calculate it. I determined the risk premium because the company may experience the following level of uncertainty.

Business risks.
1. There appears to be an interest rate tightening bias by the Reserve Bank of Australia (RBA). Higher interest rates will increase the NRFR, thus lowering the valuation of the stock.

2. A higher interest rate environment may slow down consumer lending, particularly in the housing sector, thus lowering the companies profit.
3. Higher bad debt exposure.
4. Low double digit to high single digit ROE going forward.

Now that we have determined the various variables for DDM, it is a simple calculation to value CBA common stock.

$V_j = D^1 / k - g$

$V_j = \$1.57 / 0.088 - 0.0373$

$V_j = \$1.57 / 0.0507$

$V_j = \$30.96$

The estimated valuation of $30.96 compares well to the company's current share price of $31.35. The DDM suggests CBA is properly valued at its current price.
However, a small change in any of the original estimates will have a large impact on V_j as shown by the following examples:

1. *g = 0.0373; k = 0.098;* D^1 *= $1.57.* (We assume an increase in *k*.)

$V_j = \$1.57 / 0.098 - 0.0373$

$V_j = \$1.57 / 0.0607$

$V_j = \$25.86$

2. *g = 0.0473; k = 0.088;* D^1 *= $1.57.* (We assume an increase in *g*.)

$V_j = \$1.57 / 0.088 - 0.0473$

$V_j = \$1.57 / 0.0407$

$V_j = \$38.57$

These examples show that as small a change as 1 percent in either **g** or **k** produces a large difference in the estimated value of the stock. The crucial relationship that determines the value of the stock is the spread between the *required rate of return* (**k**) and the *expected growth rate of dividends* (**g**). Anything that causes a decline in the spread will cause an increase in the computed value, whereas any increase in the spread will decrease the computed value.

Earnings Multiplier Model (EMM)

Many traders prefer to estimate the value of a share using an earnings multiplier model. The reasoning for this approach recalls the basic concept that the value of any investment is the present value of future returns. In the case of shares, the returns that investors are entitled to receive are the net earnings of the firm. Therefore, one way traders can estimate value is by determining how many dollars they are willing to pay for a dollar of expected earnings. For example, if traders are willing to 10 times expected earnings, they would value a stock they expect to earn $1 a share during the following year at $10.

You can easily calculate the prevailing earnings multiplier for any company by calculating the PE ratio. The PE ratio indicates the prevailing attitude of traders towards a stock's value. Traders must decide if they agree with the prevailing PE ratio based upon how it compares to the PE ratio for the aggregate market, for the company's sector and for similar companies.

The EMM formula is very simple to use and can be simplified by the following expression:

$$PE = DE \; / \; k - g$$

Where: PE = Calculated PE ratio, DE = dividend payout ratio expressed as a percentage, k = the required rate of return on stock j and g = the constant growth rate of dividends.

Let's use the EMM formula to value CBA shares.

We have already calculated the various variables required for the EMM formula. These are summarised below:

DE = 70.4%

k = 8.8%

g = 3.73%

Now that we have determined the various variables for EMM, it is a simple calculation to value CBA earnings multiple.

PE = DE / k - g

PE = 0.704 / 0.088 – 0.0373

PE = 0.704 / 0.0507

PE = 13.88

After calculating the earnings multiple, you would apply it to your estimate of earnings for the next year (E_1) to arrive at an estimated value. In turn, E_1 is based on the earnings for the current year (E_0) and your expected growth rate of earnings. Using these two estimates, you would compute an estimated value of the stock and compare this estimated value to it current market price.

CBA's current earnings (E_0) of \$2.13 and a g of 3.73%, you would expect E_1 to be \$2.21 (\$2.13 * 1.0373). Therefore, you would calculate the price of CBA stock as;

V_j = PE * E_1

V_j = 13.88 * \$2.21

V_j = \$30.68

As like the DDM, you would compare this calculated value of the stock to its current market price to decide whether you should invest in it.

The estimated valuation of $30.68 compares well to the company's current share price of $31.35 and the DDM valuation of $30.96. The EMM suggests CBA is slightly overvalued at its current price.

If we were to substitute the calculated PE ratio value of 13.88 with the CBA's current PE ratio of 14.72 we would calculate the price of CBA stock as $32.53 (14.72 * $2.21).

Each investment discipline has its merits. As a trader, you will be exposed to the output of a lot of investment analysis reports, such as stockbroker research, newspaper and journal articles, and adviser opinions. You will be more comfortable in making a trading decision if your are able to apply your own analysis on top of that already provided to you.

Chapter 17: Options Pricing Model Instructions

Purpose: The Option Pricing Model's purpose is to calculate the theoretical price of call and put options for the selected security.

In addition to the theoretical options price, the calculator will also calculate the following:

1. Total margin for any sold call or put option.
2. The probability of an option being greater or less than the strike price (Normal distribution calculation).
3. The options Delta, Theta, Intrinsic and Time value and the options fair value.

Option Pricing Model Format: The sections of the calculator in the double blue lines are the only areas of the calculator that are variable. All other areas are fixed.

Figure 1. Screen shot of the Options Pricing Model

Option Pricing Variables

An Options Price is a Function of :-

- Stock Price   }
- Strike   }   Intrinsic Value

- Interest Rates   }
- Dividends   }
- Volatility   }   Time Value
- Time to expiry   }

Volatility is the only subjective variable. For implied volatility figures, consult the *Australian Financial Review* newspaper, the ASX website or your derivative accredited options adviser.

These variables within the double blue lines will affect the pricing of the call and put options.

Figure 2.

Changing any one of these variables will change the value of both the call and put options.
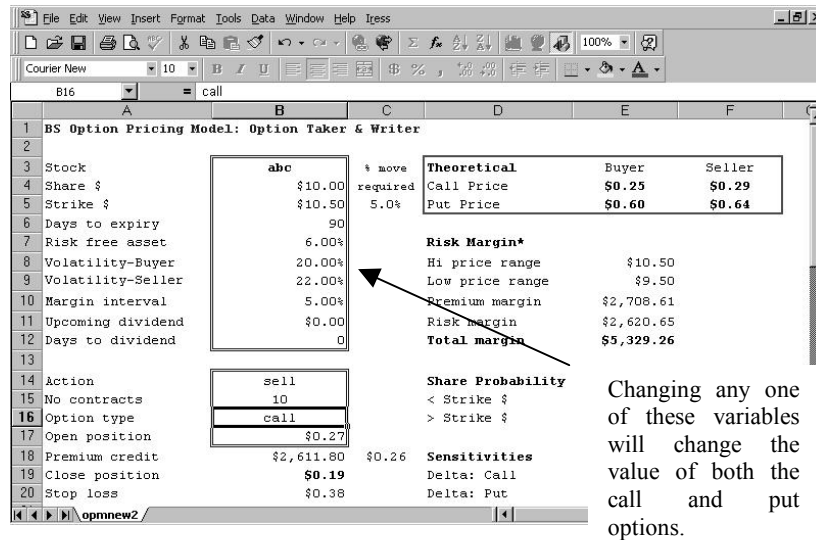
It is recommended that to become more familiar with the features of the Options Pricing Model, you should enter the option variables and then alter each of the variables and watch the effect they have on the price of the call and put options.

Share Probabilities

One of the features of the Options Pricing Model is it's ability to provide the probability of the option selected being greater or less than the strike price. The Option Pricing Model uses "Normal Distribution" to calculate the probability. As a test, change the price of the underlying share price and watch how the model will automatically recalculate the probabilities. The model will also calculate the percentage move required in the underlying share price to equal the strike price.

Costs of Trading Options fields:

Located at the right top corner of the model are the fields to enter your transaction costs, returns and stop losses.

Calculating the number of days until options expiry:

Located directly underneath the transaction cost fields is a calculator that will determine how many days will lapse until option expiry.

Figure 3.

Conclusion

We have covered a lot of ground in this book and hopefully you have gained an insight into the world of margin lending, shares, and options that will help guide you to financial independence.
The key points to remember from this book are:

- As Warren Buffet said, *"Investing is laying out money today to receive more money tomorrow."* We need to invest so we can have money for our retirement and to improve our standard of living.

- In the long term, Australian Shares is the best asset class to invest in.

- The secret to building wealth is the compound interest formula. Only you can determine how much equity you can invest and for how long you will be invested. One of the book's objectives is to teach you how to make greater returns from investing in Australian Shares directly, without increasing the risk.

- Most non-option users felt their lack of knowledge about options prevented them from investing with options. Hopefully this book has increased your level of knowledge about options and how they can add real value to your investments.

- Margin lending used conservatively is an excellent means to build your wealth.

- Technical and Fundamental Analysis can help select stocks, but not guarantee trading success!

- The *Fantastic Five* option strategies are…
    1. *Leverage Buy Write*
    2. *Leverage Sold Put*
    3. *Leverage Strangle*

4. *Synthetic Long Stock Buy Write*
    5. *Bull Calendar Price Spread with Calls*

And above all, money is important, but your health, family and friends are more important. Do not forget that money is no good to you if you forget to enjoy it.

Aristotle said *"The only true security is the development of your skills"* and it has been said before, *"If you give a man fish you feed him for a day. Teach him to fish and you feed him for a life time!"* This book was written so you will have the skills to build real wealth for you and your family.

Options Made Easy Test

Q1   A calendar spread requires the purchase and sale of two calls or two puts in the same stock with
a)   The same expiration date but different exercise price.
b)   The same exercise price but different expiration dates.
c)   Different exercise prices and different expiration dates.
d)   The same exercise price and the same expiration month.
e)   Traded in different markets.

Q2   You own a stock that has risen from $10 per share to $20 per share. You wish to delay taking the profit but you are troubled about the short run behaviour of the stock market. An effective action on your part would be to
a)   Purchase a put.
b)   Purchase a call.
c)   Purchase an index put option.
d)   Utilise a bearish spread.
e)   Utilise a bullish spread.

Q3   A bull spread with calls involves buying and selling call options in the same stock with
a)   The same time period and price.
b)   The same time period but different price.
c)   A different time period but same price.
d)   A different time period and different price.
e)   Options in different markets.

Q4   Which of the following is **not** a factor needed to calculate the value of an American call option?
a)   The stock price.
b)   The exercise price.
c)   The exchange on which the option is listed.
d)   The volatility of the underlying stock.
e)   The interest rate.

ABC Limited

		Exercise	Exercise		
		Exercise	Exercise		
		Date	**Strike**	**Price**	
		Date	**Strike**	**Price**	
Calls	OCT	$58	$4.53		Puts
	OCT	$58	$1.70		
Calls	OCT	$59	$3.94		Puts
	OCT	$59	$2.09		
Calls	OCT	$60	$3.40		Puts
	OCT	$60	$2.54		
Calls	OCT	$61	$2.91		Puts
	OCT	$61	$3.04		
Calls	OCT	$62	$2.47		Puts
	OCT	$62	$3.59		

Q5   How much would you have to pay for the October $60 call
option?
a) $254.00
b) $2,540.00
c) $340.00
d) $3,400.00
e) $3,940.00

Q6   If you bought the October $59 call option and at expiration the ABC shares was $61.20, what would be your dollar gain or loss?
a) $2,200.00 gain
b) $3,940.00 loss
c) $1,740.00 gain
d) $1,740.00 loss
e) $2,090.00 gain

Q7   If you bought the October $58 call option and at expiration the ABC shares was $64.65, what would be your dollar gain or loss?
a) $2,120.00 gain
b) $2,120.00 loss
c) $4,530.00 gain
d) $2,090.00 loss
e) $6,650.00 gain

Q8   You are bullish on the outlook for ABC shares. You decide to buy a synthetic long at $61.00. At expiration the ABC shares was $66.34, what would be your dollar gain or loss?
a) $5,470.00 gain
b) $5,340.00 gain
c) $5,950.00 gain
d) $5,470.00 loss
e) $5,340.00 loss

Q9   You bought ABC shares at $60.00 and write the October $62 call option. At expiration the ABC shares was $66.34, what would be your dollar gain or loss?
a) $4,470.00 gain
b) $2,470.00 gain
c) $4,470.00 loss
d) $6,340.00 gain
e) $3,870.00 gain

Q10   You bought ABC shares at $60.00 and write the October $61.00 call option. At expiration the ABC shares was $57.78, what would be your dollar gain or loss?
a) $3,040.00 loss
b) $690.00 loss
c) $2,910.00 gain
d) $690.00 gain
e) $2,220.00 loss

Q11   You write the October $59 put option. At expiration the ABC shares was $56.43, what would be your dollar gain or loss?
a) $480.00 gain
b) $2,090.00 gain
c) $480.00 loss
d) $2,090.00 loss
e) $2,570.00 loss

Q12   If you bought the October $58 put option and at expiration the ABC shares was $62.10 what would be your dollar gain or loss?
a) $4,100.00 gain
b) $1,700.00 loss
c) $0.00, the option expires worthless
d) $1,700.00 gain
e) $4,100.00 loss

USE THE FOLLOWING INFORMATION FOR THE NEXT TWO
PROBLEMS

Stock Price: $5.00

Call Series:	$4.00	$4.50	**$5.00**	$5.50
Option Premium:	$1.10	$0.65	$0.30	$0.15

Stock Price: $5.00

Put Series:	$6.00	$5.50	**$5.00**	$4.50
Option Premium:	$1.10	$0.65	$0.30	$0.15

Q13   What is the time value for the $4.50 call option?
a) $0.50
b) $0.65
c) $0.15
d) $0.00
e)   None of the above

Q14   What is the intrinsic value for the $4.50 put option?
a) $0.15
b) $0.50
c) $0.00
d) $0.10
e)   None of the above

Q15   A type of charting which normally disregards both time and volume is the
a)   Bar chart.
b)   Point and figure chart.
c)   Pie chart.
d)   Line chart.
e)   A linear regression graph.

Q16   A price range at which technicians would expect a substantial increase in the demand for a stock is called
a)   Demand threshold.
b)   Resistance level.
c)   Support level.
d)   Resistance limit.
e)   Technical restraint.

Q17   Which of the following statements is a true definition of an in-the-money option?
a)   A call option in which the exercise price exceeds the stock price.
b)   A call option in which the stock price exceeds the exercise price.
c)   A put option in which the stock price exceeds the exercise price.
d)   An index option in which the exercise price exceeds the stock price.
e)   A call option in which the call premium exceeds the stock price.

Q18   For the retail investor, which one of the following is *not* one of the benefits generally associated with investing in derivatives?
a)   Protecting the value of existing stock holdings from price falls.
b)   Maximising the dividend return from the underlying investments.
c)   Gaining broader exposure to the sharemarket.
d)   Gaining leverage for speculative purposes.
e)   All of the above

Bill Bloggs bought a 6 month XYC put option with an exercise price
of $18.00 for a premium of $2.27 when XYZ was selling for $15.50
per share.

Q19   If at expiration XYZ is selling for $13.63, what is Bill's
dollar gain or loss?
a) $2,100.00 gain
b) $2,100.00 loss
c) $2,270.00 loss
d) $2,270.00 gain
e)   None of the above

Q20   What is Bill's annualised gain or loss?
a)   18.5% gain
b)   185% gain
c)   18.5% loss
d)   185% loss
e)   None of the above

Q21   If at expiration XYZ is selling for $15.87, what is Bill's
dollar gain or loss?
a) $14.00 gain
b) $14.00 loss
c) $140.00 gain
d) $140.00 loss
e) $330.00 loss

Q22   What is Bill's annualised gain or loss?
a)   12.3% gain
b)   12.3% loss
c)   1.23% gain
d)   1.23% loss
e)   29.1% loss

Kathy Kline has a margin account with a balance of $30,000. Initial margin requirements are 40 percent, and ABC Industries is currently trading at $40 per share.

Q23   How many shares of ABC Industries can Kathy buy?
a)   875
b)   1,250
c)   750
d)   1,875
e)   1,750

Q24   What is Kathy's profit if ABC Industries price rises to $50?
a) $12,000
b) $75,000
c) $7,500
d) $18,750
e) $17,500

Q25   Which of the following technical analysis indicators is <u>not</u> a leading indicator?
a)   Relative strength index (RSI).
b)   Weighted moving average.
c)   Directional movement index (DMI).
d)   Momentum.
e)   Moving average convergent/divergent (MACD).

Sam Silver is considering the following alternatives for investing in Big Bank, which is trading for $44 per share:
1) Buy 500 shares, and
2) Buy six month call options with an exercise price of $45 for $3.25 premium.

Q26   Assuming no commissions or taxes what is the annualised percentage gain or loss if the stock reaches $50 in four months and a call was purchased?
a)   161.54% gain
b)   53.85% gain
c)   161.54% loss
d)   11.11% gain
e)   53.85% loss

Q27   Assuming no commissions or taxes what is the annualised percentage gain or loss if the stock is at $30 in four months and the stock was purchased?
a)   9.54% loss
b)   95.45% loss
c)   0.9545% gain
d)   95.45% gain
e)   9.54% gain

USE THE FOLLOWING INFORMATION FOR THE NEXT THREE PROBLEMS

POW WOW Limited
Stock Price: $22.00

	Date	Exercise Strike	Exercise Price
Calls	OCT	$19	$3.32
Calls	OCT	$20	$2.43
Calls	OCT	$21	$1.65
Calls	OCT	$22	$1.03
Calls	OCT	$23	$0.59
Calls	OCT	$24	$0.24
Calls	OCT	$25	$0.15

Stock Price: $22.00

	Date	Exercise Strike	Exercise Price
Puts	OCT	$19	$0.04
Puts	OCT	$20	$0.14
Puts	OCT	$21	$0.35
Puts	OCT	$22	$0.72
Puts	OCT	$23	$1.26
Puts	OCT	$24	$1.96
Puts	OCT	$25	$2.79

Q28   You buy 1000 POW WOW shares on margin account at $22. Initial margin requirements are 50 percent and write an October $23 call and $21 put option. Option expiry is in 3 months time. At expiration the POW WOW shares are $24.34. Assuming 1% brokerage, 8% margin interest and 10% GST, what would be your dollar gain?

a) $1,214.66 gain
b) $1,492.06 gain
c) $1,226.66 gain
d) $2,340.00 gain
e) $1,216.66 gain

Q29   You decide to employ a *Synthetic Long Buy Write* on POW WOW Limited. You decide to buy a synthetic long at $22.00 and write a $24 call option. At expiration the POW WOW shares are $24.34. Assuming brokerage is $70 per trade and 10% GST, what would be your dollar gain? (Assume you close out your positions).

a) $1,645.00 gain
b) $1,545.00 gain
c) $1,699.00 gain
d) $1,445.00 gain
e) $2,256.00 gain

Q30   You decide to employ a *Bull Spread with Calls* on POW WOW Limited. You decide to buy a $21 call and write a $24 call option. At expiration the POW WOW shares are $23.67. Assuming brokerage is $70 per trade and 10% GST, what would be your dollar gain? (Assume you close out your positions).

a) $1,030.00 gain
b) $1,029.00 gain
c) $1,028.00 gain
d) $1,040.00 gain
e) $1,039.00 gain

Q31   Dividend growth is a function of

a)   Return on equity.
b)   The retention rate.
c)   The payout ratio.
d)   All of the above.
e)   None of the above.

Q32   The earnings multiplier is defined as the

a)   Current price divided by the next 12 months earnings.
b)   Current price divided by the past 12 months earnings annualised.
c)   Current price divided by the average 12 months earnings over the past five years.
d)   Dividends rate times the return on equity.
e)   None of the above.

Options Made Easy Solutions

Question 1: Answer B

Question 2: Answer A

Question 3: Answer B

Question 4: Answer C. All the other factors are required to calculate the value of an American call option.

Question 5: Answer D.
$3.40 * 1,000 = $3,400 (1 option contract equals 1,000 shares)

Question 6: Answer D.
(($61.20 - $59.00) - $3.94) * 1,000 = $1,740.00 loss

Question 7: Answer A.
(($64.65 - $58.00) - $4.53) * 1,000 = $2,120.00 gain

Question 8: Answer A.
($66.34 - ($61.00 + $2.91 - $3.04)) * 1,000 = $5,470 gain

Question 9: Answer A.
$62.00 - $60.00 + $2.47 = $4,470.00 gain

Question 10: Answer D.
$57.78 – ($60.00 - $2.91) = $690.00 gain

Question 11: Answer C.
$56.43 – ($59.00 – $2.09) = $480.00 loss

Question 12: Answer B

Question 13: Answer C

Question 14: Answer C

Question 15: Answer B

Question 16: Answer C

Question 17: Answer B

Question 18: Answer B

Question 19: Answer A.
$18.00 - $13.63 - $2.27 = $2,100.00 gain

Question 20: Answer B.
($2,100 / $2,270) * 2 = 1.85 or 185% gain

Question 21: Answer D.
$18.00 - $15.87 - $2.27 = $140.00 loss

Question 22: Answer B.
(-$140 / $2,270) * 2 = -0.123 or 12.3% loss

Question 23: Answer D.
$30,000 / 0.40 = $75,000. $75,000 / $40.00 = 1,875 shares

Question 24: Answer D.
($50.00 - $40.00) * 1,875 = $18,750.00

Question 25: Answer B.
The moving average is a confirming indicator.

Question 26: Answer A.
{($50.00 - $45.00 - $3.25) / $3.25} * 3 = 1.615 or 161.5% gain

Question 27: Answer B.
{($30.00 - $44.00) / $44.00} * 3 = -0.954 or 95.45% gain

Question 28: Answer A.
Interest cost: [{($22.00 * 1,000) *0.5} *0.08] / 4 = $220.00
Brokerage (in) cost: $22,000 * 0.01 = $220.00
GST on brokerage: $220.00 * 0.1 = $22.00
Brokerage (out) cost: $23,000 * 0.01 = $230.00
GST on brokerage: $230.00 * 0.1 = $23.00
Call option brokerage: $590 * 0.01 =$5.90
GST on brokerage: $5.90 * 0.1 = $0.59
Put option brokerage: $350 * 0.01 = $3.50
GST on brokerage: $3.50 * 0.1 = $0.35
Total costs: $725.34

($23.00 - $22.00 + $0.59 + $0.35) * 1,000 = $1,940.00 gross profit
$1,940.00 - $725.34 = $1,214.66 gain

Question 29: Answer B.
Total costs incurred: $385.00 (5 transactions incurred @ $77 each
including GST)
Synthetic cost: $1.03 - $0.72 = $0.31 debit
($24.00 - $22.31 + $0.24) * 1,000 = $1,930.00 gross profit
$1,930.00 - $385.00 = $1,545.00 gain

Question 30:
Answer B. Total costs incurred: $231.00 (3 transactions incurred @
$77 each including GST)
Spread cost: $1.65 - $0.24 = $1.41 debit
($23.67 - $22.41) * 1,000 = $1,260.00 gross profit
$1,260.00 - $231.00 = $1,029.00 gain

Question 31: Answer D

Question 32: Answer A

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