

# Investments

FNCE30001

Dr Patrick J Kelly

# Investments

- How costly choices translate to future benefits
- Concretely: Risk and Reward
  - compensated risk : expected to get a return on average eg. invest on stock*
  - uncompensated risk : eg. lottery, gambling*
- Our focus:
  - financial decisions,
  - financial market and
  - financial securities,but the lessons are more broadly applicable.

Did you skip straight to “Lecture Capture”?  
Please start from “Modules”

The **Modules** provide warm-up questions and  
Links to related material

# ASX200 Price Level



# The Price is Right

- A typical assumption in finance is that the price of a **traded good** is a **correct price**.
  - **Traded good**: anything that is bought and sold in a market where buyers and sellers **voluntarily trade**. Usually, we assume the trade is **frequent**.
  - **Correct price**: the price conforms to a model we believe in.

$$P_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1 + r_E)^t}$$

Note: the equity cost of capital is constant for all investment horizons. This is the same as what you saw in Principles of Finance.

# The Price is Right

- A typical assumption in finance is that the price of a **traded good** is a **correct price**.
  - **Traded good**: anything that is bought and sold in a market where buyers and sellers voluntarily trade. Usually, we assume the trade is frequent.
  - **Correct price**: the price conforms to a model we believe in.

$$P_0 = \sum_{t=1}^{\infty} \frac{E[\widetilde{CF}_t]}{(1 + \underbrace{E[\tilde{r}_t]})^t}$$

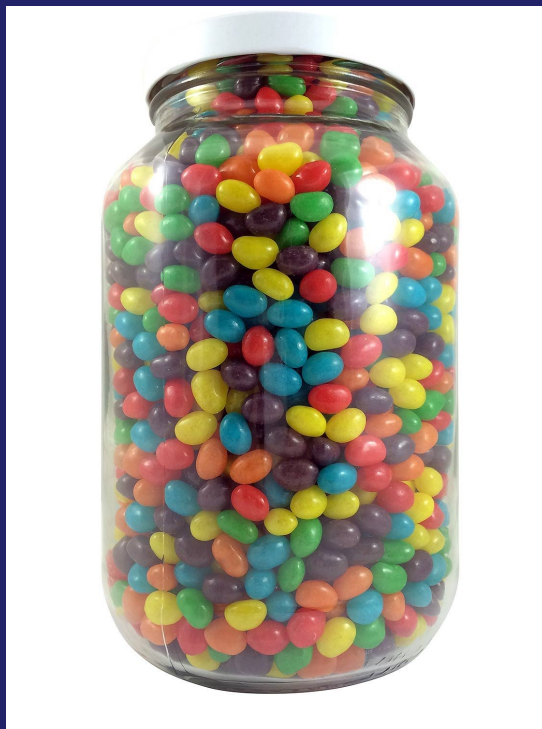
CF= Cash flow

~ on top means the variable comes from a random distribution.

$E[\ ]$  stands for investor “Expectations” about what’s inside the brackets.

The cost of capital is annualized, but we allow it to vary by the investment horizon.

# Is correct pricing a good assumption?



Student	Guess
1	1035
2	864
3	1333
Average	

# Guess the number of jellybeans

- In a reasonably sized group of people any one person's guess may be way off.
- BUT the **average** the guesses will be very close to the correct number.
- Why?



# Why is the average close to the correct answer?

- Why?

$$\textit{Your guess} = [\textit{The Truth}] + \textit{Error}$$

- Answer: if we can assume that the errors are random, then if we get enough guesses and the average error will approach zero – the errors cancel out.
- Stock prices are much the same.

## Similarly....

- In an actively traded market with low transaction costs, the price will reflect the average opinion of investors about the value of the asset.

$$P_0 = \sum_{t=1}^{\infty} \frac{E[\widetilde{CF}_t]}{(1 + E[\tilde{r}_t])^t}$$


- Implication of correct pricing:  
Smart **Investing is HARD**

... and **EASY**

# If the price is right, then...

- It is very **hard** to make investments that perform unusually well.
  - We will discuss in future lectures what “unusually well” means.
- If anyone is going to do particularly well, one might think it should be professional investors.
- Let's look at a real-life example.

# The Hard Part: Are Investors Smart or Just Lucky?



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Type of Managed Fund  
**Australian Shares - Large Cap**  
Investment Amount  
**\$25,000**





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Overview	Performance	Fees		
Company	Star Rating	5 Year Return (%)	Minimum Investment Amount (\$)	Annual cost for \$50,000 investment
<b>Platypus Australian Equities Fund - Wholesale</b>				
 ★★★★★	9.27%	\$5,000	\$440.00	<a href="#">Proceed</a>
<b>Bennelong Australian Equities Fund</b>				
 ★★★★★	9.81%	\$10,000	\$500.00	<a href="#">Proceed</a>
<b>Greencape Broadcap Fund</b>				
 ★★★★★	7.93%	\$10,000	\$595.00	<a href="#">Proceed</a>
<b>Wavestone Australian Share Fund</b>				
 ★★★★★	5.56%	\$10,000	\$485.00	<a href="#">Proceed</a>

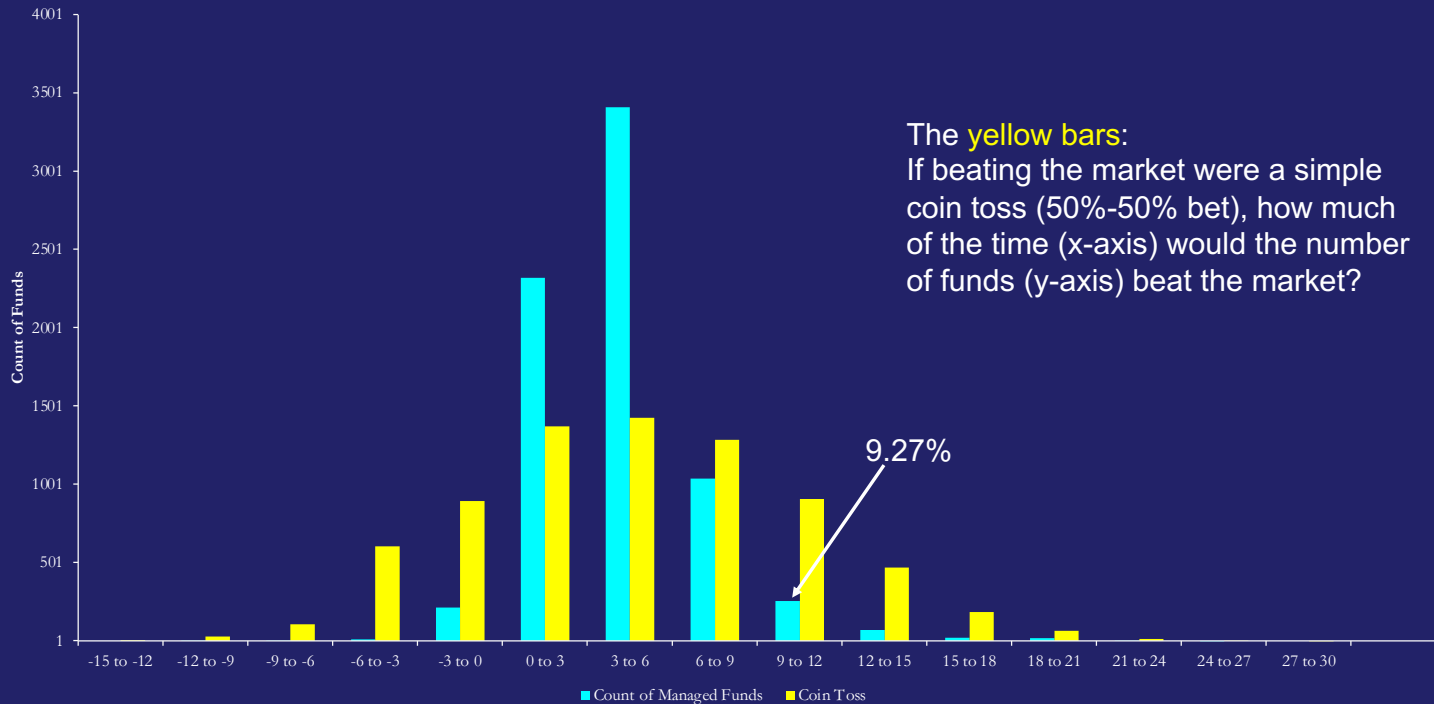
9.27% vs. 4.27% (ASX 200)

↑

# Superficially, these managers seem smart

- 9.27% is a lot better than 4.27%
  - But we don't know how risky the fund was.
  - It is hard to tell if it could have just been luck.
- Let's look at the distribution of a reported 5-year returns for all managed funds in Australia that report their returns to Morningstar.com.au

# Distribution of 5-Year Managed Fund Return



# The histogram suggests....

- Even if a professional manager performs well, it is really hard to tell whether it is any better than luck.
  - And if it is just luck, why do I need to pay them?
  
- So what do we do, if even the pros have a hard time?

# The Easy Part

- Easier anyway....
- Correct Pricing is good.
  - It means that prices reflect a fair compensation for the risks we face.
- If prices are correct, the best we can do is:
  - Be cognizant of the risks that we can get compensated for *diversified risk*
  - Minimize the risks we do not get compensated for. *undiversified risk*



# The major concepts of this subject

- ① • Prices of traded assets are always correct (almost)  
*stock is heavily traded,  
prices are always correct*
- Diversification we can
  - minimize risk and
  - maximize our reward for taking risk.
- The only risks we should expect to earn a return for is risk that is **undiversifiable**.
  - Anything else is just luck.
    - Or at least indistinguishable from luck.

# The Subject Guide: Admin Details

# Reading is important! Note about the textbook

- *Essentials of Investments* (11<sup>th</sup> edition)
  - by Bodie, Kane and Marcus, 2019
  - [www.booktopia.com.au](http://www.booktopia.com.au)
  - [www.mheducation.com.au](http://www.mheducation.com.au)
- *Very, very, very similar texts*
  - *Principles of Investments* (1<sup>st</sup> edition)
    - by Bodie, Drew, Basu, Kane and Marcus, 2013
  - *Investments* (12<sup>th</sup> edition)
    - by Bodie, Kane and Marcus, 2021
  - *Essentials of Investments* (12<sup>th</sup> edition)
    - by Bodie, Kane and Marcus, 2022

# Marking System

- Tutorial assignments 10%
  - Weeks 1 & 6: no tutorial assignments, no tutorial
  - Weeks 2 & 3: tutorial assignment, but not marked
  - Weeks 4, 5 & 7-12: tutorial assignment marked
    - You get to miss one for free
- Mid-semester exam 20%
  - On-line, open-book multiple choice exam through the Canvas LMS.
  - You MUST sit the mid-sem during the lecture in which you are enrolled
- Final 70%
  - Sometime during the exam period from 1 to 19 November
  - On-line, open-book exam through the Canvas LMS both long answer and multiple choice.

# Tutorials and Tutorial Assignments are important

- We will only touch on topics in lecture.
  - 20 min on one topic will be long
- Tutorial Assignments
  - Variations on ideas from lecture, so you can see the topic from different angles and get practice.
  - Questions will generally fall in four categories
    - Practice doing something similar to what you saw in lecture
    - Same idea as something from lecture, but different context or situation
    - Related to the week's topic, but designed to make you learn something new
    - A simple and/or boring topic, that you should know, but can easily learn on your own by reading the text (not every week).
- Tutorials
  - Review the tutorial assignments so you can make sure you learn these different ways of looking at the topics.

# Tutorials and tutorial assignments: marking

- Tutorial Attendance is not mandatory, but you would be foolish not to attend.
- Tutorial Assignments are due at 10:00am on the Monday before your tutorial in weeks 4, 5, and 7-12.
- There will be 2 types of assignments each worth 1.25 marks:
  - Type 1: Online Quiz on the Canvas LMS
    - Each question will be assigned a number of marks and accuracy matters!
  - Type 2: Handwritten assignments that are just like pre-pandemic days.
    - These are marked pass/fail. You must make a serious attempt for a pass.

# Tutorials and tutorial assignments: marking

- If you are sick or something horrible happens
  - File for special consideration
- There is a new rule about formally requesting extensions on time to complete. Please see the subject guide.
- If something happens that doesn't qualify for special consideration
  - We replace your lowest tutorial assignment with 1.25 marks

# ALL Content-Related Questions

- During tutorials and consultation hours with me or tutors  
!
- Through the “Discussions” board on the LMS
  - Questions get posted to a searchable FAQ
    - Good way to learn from the questions of others
    - Levels the playing field across students
  - I have instructed tutors to direct any and all content questions not during tutorials to the on-line tutor.
- My consultation hours via Zoom: (next slide)



# Subject Coordinator Consultation Hours

- My consultation hours via Zoom:
  - Thursday 11am to 1pm
  - These are public sessions. If you need a one-on-one meeting with me, please e-mail to schedule.
  - Priority is given to those who e-mail questions in advance to [patrick.kelly@unimelb.edu.au](mailto:patrick.kelly@unimelb.edu.au) – please put “Consultation Question” in the subject line.

# Contact for non-content questions: Admin and other....

- Please put FNCE30001 in the subject line
- Lecturer in charge: Dr Patrick J Kelly  
[patrick.kelly@unimelb.edu.au](mailto:patrick.kelly@unimelb.edu.au)
  - Please contact me, if
    - You see errors in the slides
- All content questions must go through the “Discussions” board
  - OR – ask in tutorial, or come to consultation hours, whether mine or another tutor’s.

# Academic Honesty

- Unless specifically instructed, all work in this subject is to be your own. Representing someone else's work as your own is unethical.
  - although group discussion prior writing up a tutorial assignment is fine.
- If you are caught representing someone else's work as your own, you will be punished to the full extent of the university's rules.

# Outline of Topic in Investments

# (Mostly) Stock Investing

- Why we invest?
- How should we invest?
  - Types of Assets and Asset Classes
  - Details of Trading (margin purchases and short sales)
  - Measuring risk and reward (return)
  - Portfolio theory
  - Managed Funds
  - Index Models
- Asset Pricing (Pricing Risk) → not in MST
- The mid-semester exam

Technical  
details

The important stuff, but  
mostly a repeat from  
Principles of Finance

# Adding Risky Debt

- More Asset Pricing and Forecasting
- Bond pricing
- Term Structure of Interest Rates
- Duration and Bond portfolio management

Similar to Principles, but introducing risk

## Bringing it all together

- Performance evaluation
- Market Efficiency

# Challenge: Real-world Finance is Wicked

- Finance is mathematical, but finance is not math.
- Psychologists describe 2 types of learning environments
  - Kind
    - Provides clear signals
      - Feedback directly linked to actions, frequent and quick
    - ex.: Math, chess, driving
  - Wicked
    - Signals are difficult to interpret
      - Feedback is not clearly tied to actions, is misleading or missing
    - Ex: Early 20<sup>th</sup> Century NY Dr. & typhoid.
- In wicked learning environments even smart people can learn the wrong lessons

# Build from simple to complicated

- Start with basic concepts
- Build in some real life complications
- Give you practice in tutorial assignments

This will be the pattern  
we follow for most topics



- How you can help make this a more effective learning experience
  1. Read the recommended reading
  2. Attempt or at least think how you would answer the warm-up questions.
  3. Sometimes during lecture segments, I will ask you to consider a scenario or solve a problem. Please pause and make an attempt.
  4. For higher grades and better learning: Watch lectures on a regular basis.
  5. Use tutorials, the Discussion board, or consultation hours for questions.
  6. Attend your Zoom-based (live) tutorials and ask questions during them.

# Extra Investments Discussions

Roughly every fortnight starting Week 1 (29 July 2021 at 10am)

- 1 hour, not-mandatory investments discussion
- Similar to the discussions you would get during or end of lectures.
  - Often, I will recommend an article to read, or maybe an exercise
- Also an opportunity to ask whatever random investments related question you might have.
- Schedule posted to the LMS under “Investments Discussion”
  - During lecture period, alternating the Monday and Thursday lectures.
  - All are welcome to either or both.

# Why invest?

Types of Investment Assets

Calculating Return

# Why do we invest?

- In order to
- Increase consumption and/or
- smooth our consumption *⇒ consume at similar level after they stop working*
  - Life cycle planning
  - Hedging
- Why do people save for retirement? *smooth our consumption*
- Why do most people buy houses or cars with loans?  
*by borrowing now, can consume at a higher level and consistent in the future*

# Why do we get (demand) a return from investing?

1. “Time value of money”
2. Risk
  - “Consumption timing” is important and
  - We need to be compensated for
    - not consuming *now* and for
    - the *risk* we may not be able to consume later

# Examples of Investments

- Stocks
  - Common, Preferred and Depository Receipts
- Bonds
  - Treasury Notes and Bonds, Certificates of Deposit, and more
- Derivatives: Calls, Puts, Futures
- Health Insurance, Life Insurance

Financial Assets

- A company's purchase of a factory
- Education
- Real Estate ? *not a pure investment*
- Children ?

*if buying and renting out  $\Rightarrow$  pure investment*  
*if buying to live and capital appreciation  $\Rightarrow$  consumption and investment aspect*

Real Assets

# Real vs. Financial Assets

- Real Assets:

- The stuff used in the production of goods and services

- Financial Assets:

- Claims to real assets and their income

*claim to those stream of cash flows*



*ownership*



- One Key distinction:

- With real assets, there is **no debtor**

*eg. company paid for machine ⇒ no debtor*

- With **financial assets one person's asset is another's liability**

*eg. company get machine with loans*

*⇒ the loan is asset for lender, liability for company*

# What is an investment?

- Anything that gives us **return** (or any benefit), in exchange for some cost and, usually, some **risk**
- Return** in this subject it is *profit as a percentage of the initial investment*

percentage !!

$$\text{Return} = \frac{\text{Revenue} - \text{Cost}}{\text{Cost}}$$

*Realized or Historic Return*

$$E_t[\tilde{r}_{t+1}] = \frac{E_t[\widetilde{\text{Revenue}}_{t+1}] - \text{Cost}_t}{\text{Cost}_t}$$

*Expected Return*



# You've seen this before

- This

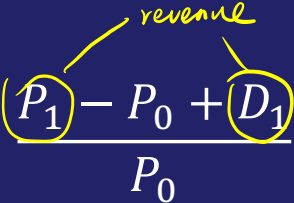
$$\text{Return} = \frac{\text{Revenue} - \text{Cost}}{\text{Cost}}$$

- Is the same as, something you might have seen in Principles

Holding Period Return =  $HPR = r_0 = \frac{(P_1) - P_0 + (D_1)}{P_0}$

*total return earned  
on an investment during the time it has been held*

*revenue*



- *It is just more general.*

# Trading Stocks

# The plan

- Raising Capital: The Primary Market
- Trading stocks: The Secondary Market
  - Details of trading
    - Costs of Trading
    - Limit order book
    - Types of orders
  - Margin trades
  - Short sales

# Raising Equity Capital

- There is only one time in the life of a stock that the firm actually gets the proceeds of the sale of a stock.
  - The **Initial Public Offering (IPO)** – the first time a stock is issued to the public.
  - **Seasoned Equity Offering (SEO)** – any issuance of new stock after the initial offering.
- Both occur on the **Primary Market** and are intermediated by Investment Banks.
  - The **Primary Market** is not a physical location, but just reference to the market for new shares that (usually) **investment banks** help create.
  - **Investment banks** act as brokers, like real estate agents, helping find buyers for the new issue of stock.

# Secondary Markets

- Once a stock has been sold to the initial investors, it can trade on a secondary market.  
*⇒ tradings are among investors  
not with the firm ⇒ no money goes back to the firms*
- Typically there are two forms of secondary markets:
  - Auction markets *from market open to close*
    - Usually a continuous and simultaneous double auction where there is bidding on both the buy and the sell side.
    - Example: ASX  
*sometimes : start the day or end the day with single price auction (集合竞价)*
  - Dealer markets:
    - ⇒ help bring more volume together and help set accurate price for illiquid stock*
    - A dealer is a firm that keeps an inventory of an asset and makes that asset available to sell and stands ready to buy.
    - OTC markets (Over the Counter) are dealer markets. NASDAQ in the US is a dealer market.  
*↓  
National Association Securities Dealers Quotations system*

# Costs of Trading (on secondary markets)

- Commission: fee paid to broker for making the transaction

*basis point of 2 per stock traded*

- Spread: cost of trading with a dealer or exchange

- Ask (Offer): price dealer will sell to you
- Bid: price dealer will buy from you
- Spread: ask – bid

- Price Impact: the temporary change in price that occurs as the result of placing a relatively large order.

# The Limit Order Book

The dealer or other investors are offering \$26.12 to buy up to 24,595 shares

## MICROSOFT CP (RT-ECN: MSFT)

Last Trade: **26.12**

Trade Time: **3:58pm ET**

The dealer or other investors are asking \$26.14 to sell up to 30,363 shares

Bid		Ask	
Price	Size	Price	Size
<b>26.12</b>	24,595	<b>26.14</b>	30,363
<b>26.11</b>	20,770	<b>26.15</b>	19,280
<b>26.10</b>	20,490	<b>26.16</b>	25,430
<b>26.09</b>	17,645	<b>26.17</b>	10,780
<b>26.08</b>	9,892	<b>26.18</b>	5,980

Source: <http://finance.yahoo.com/q/ecn?s=MSFT>

# Bid-Ask Spread

The Bid-Ask Spread is \$0.02

Ask - Bid = Bid-Ask Spread

$$\$26.14 - \$26.12 = \$0.02$$

Bid		Ask	
Price	Size	Price	Size
<b>26.12</b>	24,595	<b>26.14</b>	30,363
<b>26.11</b>	20,770	<b>26.15</b>	19,280
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Source: <http://finance.yahoo.com/q/ecn?s=MSFT>



# Market order

- *Market buy* occurs at the **Ask (Offer)**
- *Market sell* occurs at the **Bid**

bid: dealer buy, market sell  
ask: dealer sell, market buy

# The Limit Order Book

MICROSOFT CP (RT-ECN: MSFT)	
Last Trade:	<b>26.12</b>
Trade Time:	3:58pm ET

The last trade occurred at the bid, \$26.12

Bid		Ask	
Price	Size	Price	Size
<b>26.12</b>	24,595	<b>26.14</b>	30,363
<b>26.11</b>	20,770	<b>26.15</b>	19,280
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# The Limit Order Book

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26.09	17,645	26.17	10,780
26.08	9,892	26.18	5,980

What price?

A market buy order for 500 shares  $26.14$

A market sell order for 3000 shares  $26.12$

A market buy order for 35,000 shares  $26.14(30,363) + 26.15(4637)$

What if a market buy and sell for 400 shares came in at the same time?  $\text{buy } 26.14 \quad \text{sell } 26.12$

Source: <http://finance.yahoo.com/q/ecn?s=MSFT>

# The Limit Order Book: *from after hours trading*

Bid		Ask	
Price	Size	Price	Size
<b>26.14</b>	2,300	<b>26.15</b>	247
<b>26.13</b>	3,100	<b>26.16</b>	25
<b>25.85</b>	100	<b>26.17</b>	25
		<b>26.18</b>	25
		<b>26.19</b>	25

⇒ more liquidity

What price?

A market buy order for 500 shares    26.15 (247), 26.16 (25), 26.17 (25), ... 26.19 (25)

A market sell order for 3000 shares    26.14 (2300), 26.13 (700)

Source: <http://finance.yahoo.com/q/ecn?s=MSFT>

# Types of Orders

- Market Order

- Limit Order

- Buy when price falls below limit
- Sell when price goes above limit

*limit buy order*

*limit sell order*

- Stop Loss Order

- Sell when the price goes below a limit
- Buy when the price goes above a limit
  - (often accompanying short sales)

		Condition	
		Price falls below the limit	Price rises above the limit
Action	Buy	Limit buy order	Stop-buy order
	Sell	Stop-loss order	Limit sell order

Instructions to the brokers on how to complete the order

# The Limit Order

You place a limit buy order for \$26.10 for 200 shares

You place a limit sell order for \$26.17 for 100 shares

Bid		Ask	
Price	Size	Price	Size
26.12	24,595	26.14	30,363
26.11	20,770	26.15	19,280
<b>26.10</b>	<b>20,690</b>	26.16	25,430
26.09	17,645	<b>26.17</b>	<b>10,880</b>
26.08	9,892	26.18	5,980

*Handwritten notes:*

- For the bid at 26.10: "before 20,690" with an arrow pointing to "after your order 20,690".
- For the ask at 26.17: "before 10,780" with an arrow pointing to "after 10,880".

Source: <http://finance.yahoo.com/q/ecn?s=MSFT>

# Why Limit Orders?

1. To buy on a dip or sell on a rise

*take advantage of volatility*

① <sup>risk</sup>  
⇒ buy on the start of dip <sup>buy</sup>  
② <sup>sell</sup>

2. To avoid paying the spread

3. In the form of **stop orders** to prevent loss or lock in a gain  
(*more shortly*)

*eg stop sell : sell if price drop to some limit*

# Margin Trading



# Buying on Margin or an Investment Loan

Buying on margin is when you:

- Borrow money from your broker (or bank) to buy stock
  - Broker's call loan  $\Rightarrow$  *a loan can be called anytime*
- You can't borrow all the money to purchase as stock – you have to put up your own money as well.
- The money you put into the investment is called margin.

# Why buy stock on margin?

Suppose you wish to invest \$2000 in MSFT and you finance your purchase with \$1000 of your own money and \$1000 from a *margin loan* from your broker.

- What is your return on investment if MSFT increases in value by 10% during the next year, if your broker charges you 4% interest?

$$\text{Holding Period Return} = \frac{\text{Revenue} - \text{Cost}}{\text{Cost}}$$

# Cost?

Invest \$2000 in MSFT grows by 10%  
with \$1000 -- own money  
and \$1000 -- *margin loan* at 4% interest rate

- Answer:

cost \$1000

\$ out my pocket  $\Rightarrow$  cost

\$ into my pocket

# Revenue?

Invest \$2000 in MSFT grows by 10%  
with \$1000 -- own money  
and \$1000 -- *margin loan* at 4% interest rate

- Revenue

- MSFT grows by 10% *2000 → 2200*

- But *you have to pay back your 4% loan of \$1000 first*

$$\text{Revenue} = \$2000 \times 1.10 - \$1000 \times 1.04$$

$$\begin{aligned}\text{Revenue} &= \$2200 - \$1040 \\ &= \$1160\end{aligned}$$

# Why buy stock on margin?

Suppose you wish to invest \$2000 in MSFT and you finance your purchase with \$1000 of your own money and \$1000 from a *margin loan* from your broker.

- What is your return on investment if MSFT increases in value by 10% during the next year, if your broker charges you 4% interest?

$$\text{Holding Period Return} = \frac{\text{Revenue} - \text{Cost}}{\text{Cost}}$$

$$\text{Holding Period Return} = \frac{\$1160 - \$1000}{\$1000} = 16\%$$

# Margin Percent (also often confusingly called just “Margin”)

$$\text{Margin Percent} = \frac{\text{Net equity in account}}{\text{Value of Stock Purchased}}$$

$$\text{Margin Percent} = \frac{\text{Value of Stock} - \text{Loan}}{\text{Value of Stock}}$$

$$\text{Loan to Value} = \frac{\text{Loan}}{\text{Value of Stock}} = 1 - \text{Margin Percent}$$

# Trading on Margin

- Initial margin is the minimum amount of your own money you must invest.
  - If the minimum initial margin is 60% you can borrow up to 40% of the value of the stock you want to purchase (a 40% Loan to Value).
  - This initial margin can be set by law
  - Your broker may set a higher initial margin *↑ higher broker is safer*
- Maintenance margin: minimum amount equity your account can have before additional funds must be put into the account
- Margin call: notification from the broker that you must put up additional funds or assets will be sold.

## Margin Trading: Examples



# Margin Trading - Initial Conditions

X Corp	\$70
1000	Shares Purchased
50%	Initial Margin
40%	Maintenance Margin

## Initial Position

Stock	\$70,000
Equity	\$35,000
Borrowed	\$35,000

# Margin Trading - Maintenance Margin

Stock price suddenly falls to \$60 per share

## New Position

Stock 1000 x \$60 = \$60,000

Call Loan is still \$35,000

$$\text{Margin} = \frac{60000 - 35000}{60000}$$

What is our Margin Percent?

$$\text{Margin Percent} = \frac{\text{Value of Stock} - \text{Loan}}{\text{Value of Stock}}$$

$$\text{Margin Percent} = \frac{60,000 - 35,000}{60,000} = \frac{25,000}{60,000} = 41.67\%$$

# Margin Trading - Margin Call

How far can the stock price fall before a margin call?

$$\frac{1000P - 35000}{1000P} < 40\%$$

$$\text{Margin Percent} = \frac{\text{Value of Stock} - \text{Loan}}{\text{Value of Stock}}$$

$\frac{350}{P} > 6$   
 $P < \frac{350}{6}$

$$0.40 = \frac{1000P - 35,000}{1000P}$$

$$400P = 1000P - 35,000$$

$$35000 = 600P$$

$$P = \$58.33$$

# Your Turn

Y Corp	\$20
60%	Initial Margin
40%	Maintenance Margin
1000	Shares Purchased

## Initial Position

Stock	<u>20,000</u>	Equity	<u>12,000</u>
		Borrowed	<u>8,000</u>

# Your Turn

Y Corp	\$20
60%	Initial Margin
40%	Maintenance Margin
1000	Shares Purchased

## Initial Position

Stock	\$20,000	Equity	\$12,000
		Borrowed	\$8,000

# Your Turn

Stock price falls to \$15 per share

New Position

Stock 15.00

Borrowed \$8,000

Equity 7000

$$\text{Margin \%} = \frac{\frac{7000}{15000}}{1} = 46.67\%$$

# Your Turn

Stock price falls to \$15 per share

## New Position

Stock \$15,000

Borrowed \$8,000

Equity 7,000

$$\text{Margin \%} = \$7,000 / \$15,000 = 46.67\%$$

# Your Turn

How far can the stock price fall before a margin call?

$$\frac{1000P - 8000}{1000P} = 40\%$$

$$\frac{8000}{1000P} = 60\%$$

$$P = \$13.33$$

P = \_\_\_\_\_




How far can the stock price fall before a margin call?

$$(1000P - \$8,000) / 1000P = 40\%$$

\$13.33

# “Investment Loans”


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## Investment loans

Boost your investment power.



### Grow your earning potential with an investment loan

Borrowing to invest in the sharemarket can be a potentially effective and tax-efficient way to help grow your wealth. While most of us are familiar with borrowing to buy a home, not many of us consider borrowing to invest.

With an investment loan, you can put more money into your investments and increase your potential returns.

Before considering adding an investment loan to your portfolio, it's [important to understand the risks](#).

<https://www.anz.com.au/personal/investing-super/investment-loans/>

# Loan to Value, but Still Margin Calls

- List of stocks and the maximum loan to value

*loan to value = 1 - margin percent*

- Margin calls occur when price 5% higher than maximum loan to value

ANZ Investment Lending				
ANZ Investment Lending Approved Stocks				
ASX Code	Stock Name	Std %	Div %	Res
BKI	BKI Investment Ltd Fpo	50	70	
BKL	Blackmores Limited Fpo	40	60	
BKW	Brickworks Limited Fpo	50	70	
BKY	Berkeley Energia Ltd Fpo	-	40	Y
BLD	Boral Limited Fpo	70	75	
BLT	Benitec Biopharma Fpo	-	40	Y
BLX	Beacon Lighting Grp Fpo	-	40	Y
BNKS	BETA GLOBAL BANKS BETA GLOBAL BANI	65	75	
BNO	Bionomics Limited Fpo	-	35	Y
BOC	Bougainville Copper Fpo 1K	-	30	Y
BOL	Boom Logistics Fpo	-	50	Y

*max loan to value if good diversified portfolio*

*if 75% . you will get a call*

## Try this example

- Suppose you purchased 1000 shares of BLD at \$4.96 per share on Friday, 23 Aug. 2019. You decided to buy on margin with a 60% Loan to Value using an Investment Loan from a local bank.
  - The bank will make a margin call if the loan to value increases to 5% over the maximum loan to value of 70%.
  - At what price will the bank make a margin call?

# At what price will the bank make a margin call?

- Suppose you purchased 1000 shares of BLD at \$4.96 per share on Friday, 23 Aug. 2019. You decided to buy on margin with a 60% Loan to Value using an Investment Loan from a local bank.
  - The bank will make a margin call if the loan to value increases to 5% over the maximum loan to value of 70%.

$$\text{Loan to Value} = \frac{\text{Loan}}{\text{Value of Stock}} = 1 - \text{Margin Percent}$$

$$0.75 = \frac{.60 \times 1000 \times \$4.96}{1000P}$$

$$750P = \$2976$$

$$P = \$3.97$$