

Teacher Notes – Financial risk

Getting Started

Starter question

- You are about to get a legal pay-out of £100,000, but there is a hitch at the last minute and the pay-out depends on the decision of a court.
- Your solicitor tells you not to worry as there is a 95% chance of you winning the case.
- Someone offers you a deal, they will pay you £90,000, but they keep anything won in the case.
- **Would you accept the offer?**

Try to prompt thinking by asking questions like:

Do you think most people would take the deal? Why?

Why do you think the company is prepared to offer the deal? Is there a profit to be made? How much?

You are aiming to draw out that the company is likely to make this offer to lots of people in similar situations, so, in the long run, they will most likely make a good profit. However, for an individual this is a one-time deal.

A prediction of the company's earnings can be made by examining what would be expected to happen in 100 runs of the decision.

Gains: 95 wins at £100,000 each time = £9,500,000

Loses: Payments to customers = 100 x 90,000 = £9,000,000

Balance: Profit = £500,000

Even when other items such as court costs are considered it is likely a profit will be made.

To summarise – It is important, when making a decision, to consider the number of times, period of time, or both, that you are going to be exposed to the risk. This is true for financial and other risks.

The stocks and shares game on the next page can be used to investigate/exemplify this.

The students can play this in teams, using the spreadsheet. One option would be to have two pairs playing against each other. With opposing pairs operating the spreadsheet for their opponents to minimise the risk of cheating.

Instruction for the game and spreadsheet are given on the next 3 pages.

Financial risks – Stocks and share game

Game play

The cards below show the investment prospects of 12 different companies.

The projected dividend is the amount you can expect to receive per share if the company is successful. The probability of you receiving this dividend is also given.

You have £10000 to invest. The starting price of each share is £2000.

Share prices fluctuate, attractive investments rise in value, whilst less attractive ones fall. To model this:

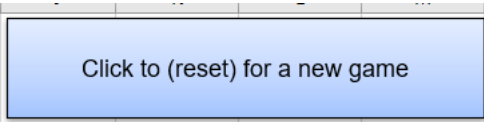
- Any share which doesn't pay-out in a round will lose half its value in the next round
- Shares that pay-out in a round will increase in value by £100 in the next round

Investment information

Company A Projected Dividend £80 Probability of Receiving the Dividend 100%	Company B Projected Dividend £200 Probability of Receiving the Dividend 95%
Company C Projected Dividend £400 Probability of Receiving the Dividend 90%	Company D Projected Dividend £600 Probability of Receiving the Dividend 80%
Company E Projected Dividend £1,000 Probability of Receiving the Dividend 70%	Company F Projected Dividend £2,000 Probability of Receiving the Dividend 50%
Company G Projected Dividend £2,700 Probability of Receiving the Dividend 45%	Company H Projected Dividend £3,000 Probability of Receiving the Dividend 40%
Company I Projected Dividend £9,000 Probability of Receiving the Dividend 20%	Company J Projected Dividend £20,000 Probability of Receiving the Dividend 10%
Company K Projected Dividend £75,000 Probability of Receiving the Dividend 3%	Company L Projected Dividend £300,000 Probability of Receiving the Dividend 1%

How to use the shares simulation spreadsheet.

1. Click on the reset button



2. Choose your first-round shares by entering the number of shares you wish to buy from a particular company into the correct cell in the table.

The example below shows 1 share of company A, 2 shares of company B and 2 shares from Company C.

Round 1	Choices	Fund value now	£10,000	Fund value
Company	Number of shares	Random Number	Gain/No Gain	Amount Gained
A	1		?	£0
B	2		?	£0
C	2		?	£0
D			?	£0
E			?	£0
F			?	£0
G			?	£0
H			?	£0
I			?	£0
J			?	£0
K			?	£0
L			?	£0
Remaining fund	£0.00		Round earnings	£0

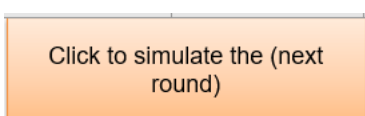
Remaining fund value after the shares have been bought

Note you are not allowed to spend more than the current value of your fund.

The share prices change after each round, you can see the current prices in the share prices so far table. Below is the table at the start of round 1.

Share prices so far						
Company	Start	R1	R2	R3	R4	R5
A	£2,000.00					
B	£2,000.00					
C	£2,000.00					
D	£2,000.00					
E	£2,000.00					
F	£2,000.00					
G	£2,000.00					
H	£2,000.00					
I	£2,000.00					
J	£2,000.00					
K	£2,000.00					
L	£2,000.00					

3. Once you have selected your shares, click on the simulate button (see below) to simulate round 1.



The round 1 table will update and show the performance of your investment. Example below

Round 1	Choices	Fund value now	£10,000	
Company	Number of shares	Random Number	Gain/No Gain	Amount Gained
A	1	3	Gain	£80
B	2	22	Gain	£400
C	2	53	Gain	£800
D		38	Gain	£0
E		21	Gain	£0
F		72	No Gain	£0
G		58	No Gain	£0
H		97	No Gain	£0
I		28	No Gain	£0
J		81	No Gain	£0
K		8	No Gain	£0
L		10	No Gain	£0
Remaining fund	£0.00		Round earnings	£1,280

This the amount earned from dividends

4. After round 1, follow the instruction and scroll down to the round 2 table.

Scroll down and fill in your share choices for Round	2
--	----------

Round 2	Choices	Fund value after R1	£11,780.00	
Company	Number of shares	Random Number	Gain/No Gain	Amount Gained
A				
B				
C				
D				
E				
F				
G				
H				
I			?	£0
J			?	£0
K			?	£0
L			?	£0
Remaining fund	£11,780.00		Round earnings	£0

Fill in your next round share choices in the same way you did in round 1

Remember not to overspend. The share prices so far can be found in the table opposite.

You may not be able to spend all of your fund on shares, any remaining money will be added to your next round fund.

When you have made your choices, click the simulate button again to run the round.

- Repeat step 4 for the rounds 3,4 and 5.
- After round 5 has been completed, you can view the final finishing value of your investment. See below

L		84	No Gain	£0
Remaining fund	£0,085.00		Round earnings	£3,500
Final total	£14,135.00			

Discussing the Game.

At the end of the game ask the students if they had any strategies which worked well, and any that didn't.

Would they play differently next time?

Ask the students to sort the cards into three piles:

- Low risk investments
- Medium risk investments
- High risk investments

Investigating the performance of different investment strategies

Ask the students to use the spreadsheet to experiment with different starting portfolios, examining how they perform over 5 rounds.

Some questions to investigate are given below:

- If you choose a portfolio with only high-risk investments, would your fund run out before you make any profit?
- How does the fund perform with only medium risk investments? Low risk investments?

There are also opportunities for a critical analysis of the model used for the game.

To conclude, you could encourage students to think about reasons why people invest:

- to prepare for retirement, a pension fund started early in their career.
- for a personal income
- as long-term savings

How might the reasons for investment affect their strategy? You could, ask the students to do some independent research on this and report back to the group in another lesson.

This site <https://www.moneysavingexpert.com/savings/investment-beginners/> offers 5 golden rules of investing which I have paraphrased below:

1. Greater return usually involves greater risk
2. Don't place all of your cash in one investment or type of investment – limit your exposure to risk
3. Investments which pay out regularly are generally better for short term investors.
4. Check how your investment is going regularly
5. Investments can go down as well as up.