

# Order 16564

*by* qaqa 1234

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## ***Q1 Financial System and Financial Instruments***

### ***(a) Double Coincidence of Wants***

Double coincidence of wants implies that two entities engaging in a transaction must have a mutual agreement on buying and selling a product. The problem occurs when the improbability of the wants, events or needs that create or encourage a transaction occurring at the same time and the same place (Berentsen and Rocheteau, 2000)

If two individuals equally equate the four <sup>1</sup>eggs and a loaf of a bread. Then this trade would be termed as double coincidence of wants as it will enable a smooth transaction. A barter economy is one in which individuals swap goods. For instance, a guy pays another to teach economics in exchange for eggs. <sup>1</sup>Clearly, a barter economy has significant limitations. It requires two people to have goods they are willing to swap. It is evident that the barter system has its limitations, it involves two individuals who are willing to exchange goods. If the above guy who want to sell his eggs and the second guy is offering economic teaching in exchange, such exchange would cease to exist since the first guy wouldn't essentially want to swap eggs for economic classes. Here in this case, there is no double coincidence of wants.

Noticeable argument exists on the fact that <sup>1</sup>double coincidence of wants is scarce, but in the real world, transactions happen on the basis of favours. For instance, a person might give lodging to another individual and then expect him to return the favour at some point in time.

### ***(b) Three Major Functions of Financial Intermediaries***

Financial institutions such as <sup>7</sup>banks, insurance companies, investment banks and pensions funds are classified as financial intermediaries. These institutions aids individuals and organizations in borrowing and lending money. It caters to the diverse needs of the customers and provide them facilities to make these processes easier. (Allen and Gale, 2004)



Financial intermediaries work by arranging the required sum for those in need through the movement of funds from individuals who have in excess to those who need it the most. This drives to create a market which is efficient and reduces the cost of conducting a business. These institutions help in connecting the right lenders with the right borrowers. They also help in the diversification of risk for your funds, for instance an entity, rather than lending all his money to a sole borrower can put their funds with an intermediary, who then can distribute the funds among different borrowers, which reduces the probability of defaulting borrowers. Banks help in empowering economies of scale that is the average costs are reduced. Another function in which these institutions assist heavily is with the convenience of amounts. For instance, finding a sole lender for a huge amount is quite difficult but if a borrower goes to a bank, then getting the required sum which he desires becomes easy since there is an extensive number of individuals depositing money in a bank (Allen and Gale, 2004).

*(c) Information Asymmetries*

The concept of information asymmetries is when in an economic transaction, the knowledge of one party is greater than the other party. The factor exists when the retailer of a specific good or a service possess greater knowledge regarding the product or service than the buyer of that product. Though, the possibility of a reciprocal exists. Almost every economic transaction includes information asymmetry (Rodrigues and Galdi, 2017).

Moral hazard is the risk that an entity has engaged into a contract with a bad faith or has delivered deceptive information regarding his liabilities, assets and credit capacity. Additionally, moral hazard may refer to the fact that an individual is willing to take uncalculated risks in order to make higher profits. The probability of moral hazards exists every time two parties come



together into a contract. Any of the participating entities have the edge to profit in an agreement by going against the rules set at the time of the contract (Lemennicier, 2014)

#### Example

Before the 2008 financial crisis, after the bursting of the housing bubble, on the side of the lenders certain activities can fall under the moral hazards part. For instance, a broker providing mortgage to the borrowers, might have been stimulated to generate commissions and thus provided loans to borrowers overlooking their financial position. Financial profits were made because the loans that were initiated were sold over to the investors which moved the direction of risk from the loaning institution and the mortgage broker, but the risk in this case had also spiked and the above risk eventually fell over the investors.

On the contrary, moral hazards were also faced by borrowers struggling to repay their debts when deciding either to try to meet their financial commitments or to give up and walk away from these debts which had gotten quite difficult to pay back. With a decline in the value of the properties, the borrowers faced yet another challenge on their loans. The homes that they had were valued less than the amount of their mortgages. Various borrowers might have perceived this as an option to walk away, as this would reduce the financial load by giving up the property.

#### *Q2 Capital Investment Decision*

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Option 1	80,000	20,000	30,000	30,000	10,000	15,000
Option 2	50,000	10,000	20,000	5,000	15,000	15,000

(a) *Undiscounted and Discounted Payback*

For Project 1 (Undiscounted):

In the first year the Red would receive 20,000 i.e.  $80,000 - 20,000 = 60,000$  GBP

In the Second year Red would receive 30,000 i.e.  $60,000 - 30,000 = 30,000$  GBP

In the Third year Red would receive 30,000 i.e.  $30,000 - 30,000 = 0$  GBP



Hence, the undiscounted Payback for the first project would be 3 years.

(Discounted)

The cost of capital is 5%, hence the discounted cash flows would be

	0	1	2	3	4	5
<b>Option 1</b>	80,000	20,000	30,000	30,000	10,000	15,000
<b>PV factor</b>	1	1.05	1.1025	1.157625	1.215506	1.276282
<b>Discounted CF</b>	80,000	19047.62	27210.88	25915.13	8227.025	11752.89
<b>Payback Period</b>		60,952	33,741	7,826	-401	

According to the above shown calculations, the PV factor has been calculated through the formula  $(1+r)^n$  and the discounted cash flow has been calculated through the formula [Cash flow/PV factor]. Hence, the discounted Payback period would be sometime between years 3 and 4.

For Project 2 (Undiscounted)

In the first year the Red would receive 10,000 i.e.  $50,000 - 10,000 = 40,000$  GBP

In the Second year Red would receive 20,000 i.e.  $40,000 - 20,000 = 20,000$  GBP

In the Third year Red would receive 5,000 i.e.  $20,000 - 5,000 = 15,000$  GBP

In the Fourth year Red would receive 15,000 i.e.  $15,000 - 15,000 = 0$  GBP

Hence, the undiscounted Payback for the first project would be 4 years.



(Discounted)

	0	1	2	3	4	5
<b>Option 2</b>	50,000	10,000	20,000	5,000	15,000	15,000
<b>PV factor</b>	1	1.05	1.1025	1.157625	1.215506	1.276282
<b>Discounted CF</b>	80,000	9523.81	18140.59	4319.188	12340.54	11752.89
<b>Payback Period</b>		70,476	52,336	48,016	35,676	23,923

The payback period in this project would be greater than 5 years.

(b) *ARR*

3  
Option 1

		Year 1	Year 2	Year 3	Year 4	Year 5
<b>ARR</b>		25.00%	37.50%	37.50%	12.50%	18.75%

The ARR, for option 1 has been calculated through the formula;

*ARR = Average Annual Profit / Initial Investment*

3  
Option 2

		Year 1	Year 2	Year 3	Year 4	Year 5
<b>ARR</b>		20.00%	40.00%	10.00%	30.00%	30.00%

The ARR, for option 2 has been calculated through the formula;

*ARR = Average Annual Profit / Initial Investment*

(c) *IRR*

Option 1

The IRR for the Option 1 of investment would be 10.89%, the IRR has been calculated through the formula;

$$IRR = 0 = \sum_{n=1}^5 \frac{C_n}{(1+IRR)^n} - C_0$$

Where  $C_n$  = Cash flow of year  $n$  and  $C_0$  = Initial Investment



#### Option 2

The IRR for the Option 2 of investment would be 9.19%, the IRR has been calculated through the formula described above in the Option 1

#### (d) NPV

##### Option 1

The NPV for the option 1 of investment would be £11,574.81. The NPV has been calculated at a discount rate of 5% as given. The formula used for the calculations

$$NPV = \sum_{n=0}^5 \frac{Rn}{(1+i)^n}$$

Where  $Rn$  = net cash inflows – outflows during a single period  $n$

And  $i$  = discount rate

$n$  = number of time periods

##### Option 2

The NPV for the option 2 of investment would be £5,787.63. The NPV for this option has been calculated using the same formula as above.

#### Best Option

The investment option 1 is the best option to choose because it has a shorter payback period both discounted and undiscounted. The ARR overtime is better for project 1 than the other project, the IRR of the first project is higher and also the NPV is greater. Without any doubt, the first project is a better investment than the latter but if we take into consideration the amount of initial investment, project 1 requires higher investment almost 30,000 GBP more than the 2<sup>nd</sup> project but all the above projections are in the favour of the first project.

#### 3a)



The Efficient Market Hypothesis (EMH) is basically a hypothesis in economics under financial terms which places emphasis on asset prices reflecting all the financial information available (Degutis and Novickytė, 2014). It further says that all the information available about investment securities in terms of stocks are taken into account with the value of shares. According to the concept of EMH it is not necessary for investors to be rational and they should act balance and randomly just like the market as being normal (Bariviera, 2017). For instance, a random or sudden reaction to unusual information would be termed as normal just like the crowd running toward a single will also prompt you to do the same. There are three different forms of EMH defined as follows:

### ***Different forms of EMH***

#### ***Weak Form***

The weak form implies that current stock prices reflect all past price data and that no method of technical analysis can be used effectively to help investors make trade decisions. While fundamental security analysis can provide information to an investor in the short term to generate returns above market averages. Basic analysis therefore does not provide a long-term benefit and technical analysis will not work (Hamid, 2017).

#### ***Semi-Strong form***

This means that neither fundamental nor technical analysis will give an investor an advantage and that new information is automatically priced in securities. Those who adhere to this version of the theory claim that only data which is not immediately available to the public will allow investors to raise their returns to a level of performance above the general market (Khan and Khan, 2016).



### *Strong Form*

This form stipulates that all data, both public and private, is valued in stocks and that no investor can take advantage of the whole market. Strong Form of EMH does not claim that some investors or money managers are unable to achieve unusual high returns as average outliers are always included (Hamid, 2017).

### *B)*

Random walk is a theory that suggest the stock price changes are independent of one another and have an equal distribution. It therefore means that a stock price or market's past movement or pattern cannot be used to forecast its movement of the coming years. In simple terms random walk tells that stocks take an unpredictable path that nullifies the use of all other ways of forecasting stock prices (Khuntia and Pattanayak, 2018).

Random walk theory is related to the concept of EMH in terms considering the role of fundamental and technical analysis. This theory tells that technical analysis are unreliable just like the weak form of EMH as individuals only buy or sell a security post developing an establish trend. Similarly, this theory finds fundamental analysis unreliable because of the inaccurate information provided by this method and its misleading interpretation (Mishra, Mishra and Smyth, 2015).

### *C)*

According to different studies **weak form** of EMH is considered as the most reliable form of EMH. As under weak form of EMH there is no point of going over through the stock prices as they do not play a part in forecasting future prices as a result investor can easily adopt a simple strategy of investing in shares under technical analysis (Nwachukwu and Shitta, 2015).

Under **semi-strong** form of EMH technical and fundamental analysis does not tell about securities that have been understated through which investors can make abnormal returns. Hence



under this method investors consider the high level of risk and trade their securities based on the most updated information.

While strong form of EMH is considered as one of the feasible and satisfying forms theoretically but the problem associated with this form is that investors would need to carry out a strong research before dealing in shares. Furthermore, investors would need research about the key terms in the financials before taking this form into consideration (Titan, 2015).

#### 4a) Risk, Return and Diversification

Business Conditions	Probability	End-price	Start Price	Dividend	Holding period return	Standard Deviation
Bust	0.1	5	15	0	-66.7%	93.33%
Normal	0.8	17	15	2	26.7%	
Boom	0.1	30	15	3	120.0%	
Average		17.33333				

The holding period and standard deviation tell the return on an asset portfolio held, while standard deviation measures the risk associated with the stock telling whether the investments will meet the returns expected or not. Hence according to the data calculated it as the total standard deviation is much higher while returns are not up to the mark depicting that the volatility of stock is very risky in terms of return and risk. Only under normal business conditions the risk associated with the stock is controllable in terms of the return. Moreover, these calculations also predict that as the stock is very risky, this means that in the coming years the prices of stock are likely to increase which will leads to increase in returns and profits in the long-run (Adam, Marcet and Nicolini, 2016).

#### B)

	Portion	Return
Stock Purple	0.9	26.7%



T-Bill	0.1	1%
Return	24.10%	
Std. Dev	18.15%	

The return and standard deviation according to 90% of stock purple and 10% of t-bill tells that the overall volatility of the portfolio would be profitable as compared to the only stock volatility in terms of risk. As the risk associated with the portfolio is 18% while return is 24% tells that it is profitable for traders to invest in stock purple as investors could gain long term profits from this investment.

### ***C) Effects of Diversification***

Diversification refers to a process of business increasing their range of products they produce or in other words it means allocating resources in such a way that it reduces the risk over one particular asset through the production of another product.

Diversification also helps in reducing risks associated with stocks. As in holding just one investment there is a big risk that the investment may not perform as expected and an individual could lose most of his money. But holding diversified portfolio with number of investments, there is a much lesser risk that whether all investments may not perform badly at the same time. Moreover, diversification also minimizes the variability when different asset prices are not correlating to one another. Hence as diversification allows potential investors to reduce the unique risks associated with stocks and asset, therefore diversification is an effective way of managing risks.



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