

# RWS 15: FINANCIAL MARKETS and BANKING

## WHAT IS MONEY

### Specific Definitions as defined by the Bank of England

- Notes and coins: Notes and coins in circulation outside the Bank of England. The Bank of England (BoE) makes sure it creates enough banknotes to meet the public's demand for them
- M0: Notes and coin plus central bank reserves
- MZM: Notes and coin plus all sight deposits held by the non-bank private sector
- M2: Notes and coin plus all retail deposits (including retail time deposits) held by the non-bank private sector
- M4: Notes and coin, deposits, certificates of deposit, securities with a maturity of less than five years held by the non-bank private sector.

### Generalised Definitions

1. Narrow Money: The narrow money definition of the money supply is a measure of the value coins and notes in circulation and other money equivalents that are easily convertible into cash such as short term deposits in the banking system
2. Broad Money: Broad money is a measure of the total amount of money held by households and companies in the economy. Broad money is made up mainly of commercial bank deposits — which are essentially IOUs from commercial banks to households and companies — and currency — mostly IOUs from the central bank

### Characteristics and Functions of money

According to the Bank of England, in a modern economy, money is considered to be a 'Fiat' form of money. In other words, it is a type of IOU, but one that is special because everyone in the economy trusts that it will be accepted by other people in exchange for goods and services. The actual paper it is printed on is not intrinsically worth anything (or very much at all) compared to the perceived value of the note. In the past, we have had commodity money such as shells, cigarettes even, where a token is agreed on as a form of money. There is also 'representative money' where the token has 'intrinsic value' such as Gold. Before the 1930's it would have been possible to take your cash to the Bank of England to get a corresponding amount of Gold in return!

#### **Key Characteristics of Effective Money**

- Durability i.e. it needs to last
- Portable i.e. easy to carry around, convenient, easy to use
- Divisible i.e. it can be broken down into smaller denominations
- Hard to counterfeit - i.e. it can't easily be faked or copied
- Must be generally accepted by a population
- Valuable – generally holds value over time

#### **Key Functions of Money**

1. Medium of exchange: money allows goods and services to be traded without the need for a barter system. Barter systems rely on there being a double coincidence of wants between the two people involved in an exchange
2. Store of value: this can refer to any asset whose "value" can be used now or used in the future i.e. its value can be retrieved at a later date. This means that people can save now to fund spending at a later date.
3. Unit of account: this refers to anything that allows the value of something to be expressed in an understandable way, and in a way that allows the value of items to be compared.

**TASK:** Using the information above and the article handed out in class (or visit the RWS15 folder on GOL to get another copy), to what extent is 'Bitcoin', the virtual currency started in 2009, a form of money?

**How does Bitcoin work? (in a few sentences)**

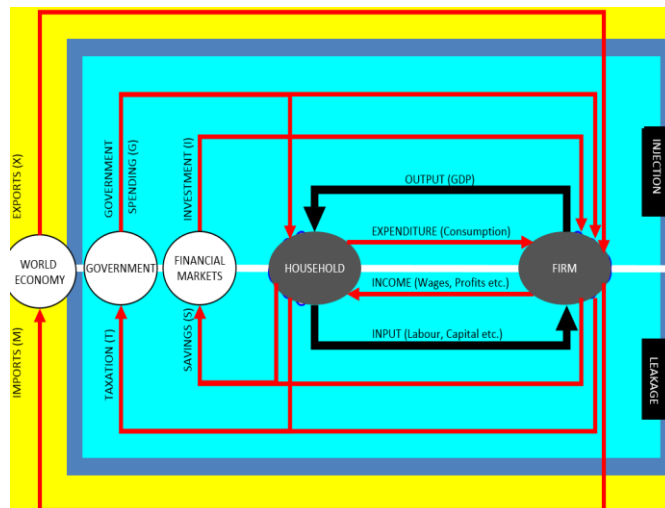
**Yes, a form of effective money**

**No, not a form of effective money**

# FINANCIAL MARKETS ('THE MONEY MARKETS')

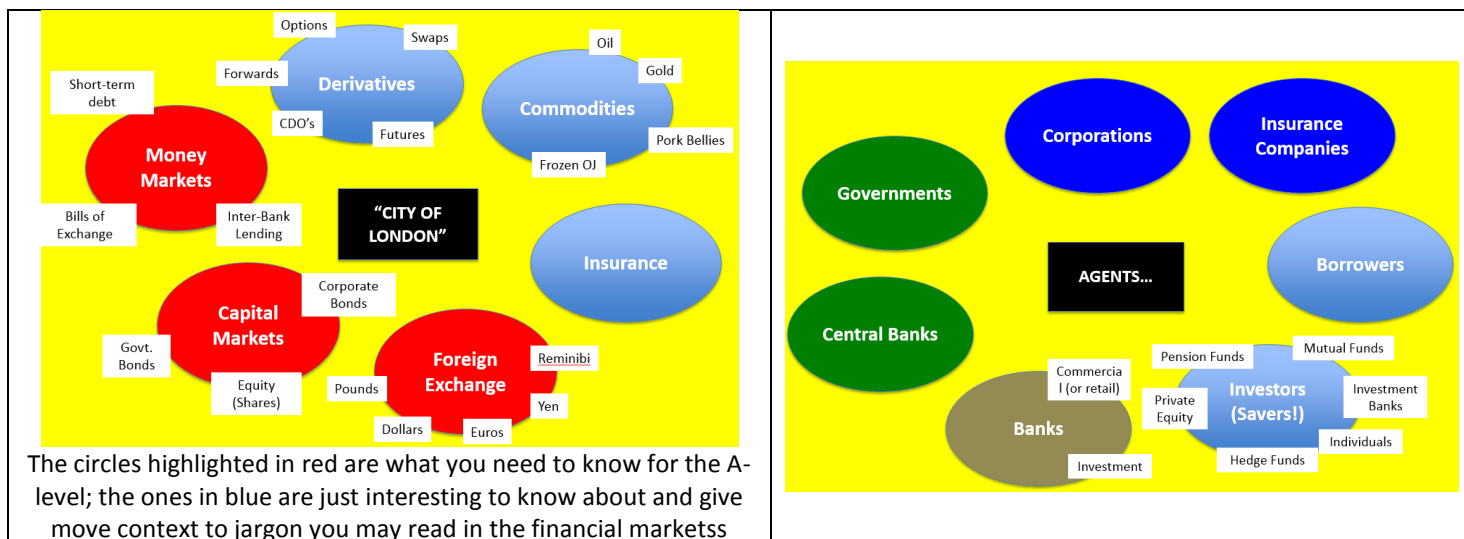
## Purpose of Financial Markets for the Wider Economy

You may remember the circular flow of income model from the first year when we explained how money movements circulated around the economy. One of the institutions was the Financial Markets! The fundamental purpose of financial markets is to channel funds from those who have surplus funds (those who wish to spend less than their income) to those who have a shortage of funds (those who wish to spend more than their income). For example, people may wish to save through a pension fund for their retirement whilst firms may wish to borrow funds to finance the expansion of their business. The process of channeling funds can take place through a financial intermediary, such as a bank, or take place or may take place directly through financial markets. In today's global economy, there are massive financial flows between economies. For example, the Norwegian government might invest some of its sovereign wealth funds in UK government bonds, or a pension fund might invest in shares on the Tokyo stock exchange.



## Introduction to Financial Markets in the "City of London"

In reality, financial markets are very complex and in the 'City of London' which includes the 'Square Mile' around the Bank of England as well as Canary Wharf. Funds can be channeled between savers (investors) and 'borrowers' in many ways that do not just involve banks!



### The money market

The money market is a financial market which provides short term finance to individuals, firms (including banks and other financial institutions) and governments. Short-term debt may have a maturity ranging from 24 hours to perhaps 12 months. Examples include interbank lending, lending to the UK government through the purchase of treasury bills and corporate bills of exchange.

### Capital markets

The capital market provides medium and long term finance to firms and governments. Companies may raise long term finance by issuing shares or corporate bonds but they can also, for example borrow from the banks. Governments issue bonds to finance their borrowing needs and fund deficits. The banks also raise money on capital markets to support their lending by issuing bonds.

### The foreign exchange market

The foreign exchange market is the market in which different currencies are bought and sold. International trade and international investment flows mean that economic agents will need to convert the funds they provide or receive from one currency to another eg pounds sterling into Euros or dollars. Gains or losses are made from the movement of exchange rates – speculative activity in the currency market is often high

**TASK:** Using the information above, identify whether the following statements are true or false (T/F)

1. Financial markets channel individuals/institutions with surplus funds to those people to those that have a shortage of funds
2. Channeling funds for loans must take place through banks
3. Foreign governments are not permitted to buy UK Government bonds
4. The Money market provides short-term loans to individuals, firms and governments.
5. Money markets are used when companies want to raise funds by selling shares in their companies

## How do Government's raise finance?

Government's need to raise finance to fund any budget deficits they may have. They can either raise short term finance on the Money Markets by issuing treasury bills or they can issue longer term debt called government bonds (or Gilts in the UK) on the Capital Markets. This is how they work:

- The Government wants to borrow £1000. So it issues a 10 year bond (or 'Gilt') which is essentially a contract between the Government and an investor (someone with excess money who wishes to save their money into this financial instrument).
- The investor is someone with excess money they haven't used for consumption. The investor may decide to buy a bond (so the Government gets £1000) rather than save their money using alternatives (e.g. buy a share). £1000 is the nominal value of the bond and this transaction between the Government and the investor is in the primary capital market.
- The investor will require the money back in say 10 years. Because the bond ties up the savers money, they will want compensation for this lack of liquidity. The yield or 'coupon rate' (long-term interest rate) they receive also compensates for risk. If the Government is a strong one, then the yield might be lower than a riskier Government where the yield would be higher.
- Therefore lets say the Government agrees to pay a 'yield' of say 5%? Every year, the investor receives an annual £50 (called a 'coupon payment') as compensation for not seeing their money again for 10 years. At the end of the process when the contract comes to 'maturity', the investor will have made £500.
- Government bonds are frequently traded on 'secondary' bond markets in the capital markets. Therefore, their market price may be quite different to the original price set by the government. So the original investor (investor 1) might decide to sell their bond to someone else (investor 2) at a price (probably higher than £1000 but not necessarily). Then the income stream from the Government and the final bond would now be transferred to saver 2 until the bond finishes when they would receive the remaining payments and the lump £10000 at the end.

**TASK:** Using the information above, answer the following questions

Explain why inflation is the enemy of the investor who owns a portfolio of bonds?	Why do companies, financial institutions and individuals want to buy bonds?	What factors might cause the demand for bonds to rise?
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## Why is there an inverse relationship between bond prices and bond yields (coupon rate/interest rates)

Economics students are often confused by the relationship between the price of bonds and long run interest rates. To understand the relationship, consider the bond in figure 1, which depicts the main characteristics of government bonds. This bond is a 30 yr bond with a face value of £100 carrying a guaranteed annual interest payment, known as the coupon payment, of £5. Simple arithmetic will tell you that £5 is 5% of £100. Suppose, however, that after the bond has been sold on its day of issue for £100, its second-hand price on the london stock exchange or bond market rises to £200. This means that the bond yield falls to 2.5% (£5 as a percentage of £200). This is why as the price of bonds rises, the yield falls. Equally, if this bond price fell to £50, then the yield would be 10% (£5 of £50).



**TASK:** The government sells a new issue of 50 year gilt-edged securities, each with a nominal value of £100 and a guaranteed yearly interest payment (or coupon) of £2.50. Five years after the gilt was issued, its second hand or current market price on the stock exchange falls to £50. Calculate the yield on the gilt-edged security at this date.

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**TASK:** Answer the following questions

Identify the i) Nominal Value, ii) Coupon and iii) Maturity Date for the Australian Government Bond (above).	Explain the difference between the PRIMARY and SECONDARY capital markets for bonds.	Is the 'coupon' a fixed rate of interest or a variable rate of interest?	What is the difference between a 'Corporate Bond' and a 'Government Bond' a.k.a. 'Gilt'?

## How do Firms raise finance?

You own a large aggro-chemical business that manufactures pesticides for use in used in farming. The company has been extremely successful over the past 5 years and now needs to increase its output to expand into new markets. The company therefore requires funds to grow, how could it get hold of the money necessary to grow?

1. *Issue Equity*: Create further opportunities for investors to buy a stake or share in their company. This may involve paying 'dividends' or shares of profits to the investor. The investor in return will pay a 'share price'
2. *Bonds (Corporate Bonds)*: Provide Short-Term Bills of Exchange on the Money Markets or Long-Term Corporate Bonds on the Capital Markets. This is a similar contract that Governments issue but obviously in this case firms are. The nominal value (or maturity value) is paid to the firm by the investor. In return, the firm would be expected to pay coupon payments annually and then pay the value of the bond back after the agreed period of time.
3. *Borrow directly from a bank*: Often firms might get short-term loans to cover any cash-flow problems. For example, a firm may have produced an order for a customer but their invoice will not be paid immediately and only after the product has been delivered. Therefore the producing firm will need to borrow money on a temporary basis to fund the materials they need to produce the order.

**TASK:** Place the following financial into either a 'debt' or 'equity' category below (you may need to use the internet to research some of these terms):

1. Mortgage	Debt
2. Shares	
3. Venture capitalists	Equity
4. Corporate Bond	
5. Bridging Loan	
6. Private Equity Fund	

### Debt .v. Equity: What is the difference?

Daily Telegraph October 2017

Whether setting up or growing a business, equity and debt financing are two ways for businesses to raise capital. So which is right for you?

Debt financing involves borrowing money from a lender such as a bank. Lenders look first for the repayment of their loan and the interest on it. They want to be sure that the company can make regular payments, most often from the very start of the loan period and will usually want some form of security. There is little flexibility. A tough call for a young business, or one that's facing change, has a high-risk project to fund, or uncertain short-term cash flow.

On the other hand, equity investors provide funding in return for a stake in the business. They take a calculated risk on its future and gain from shared success with management. Their involvement is a vote of confidence in an entrepreneur's ability to build a stronger, more valuable business.

**TASK:** State some advantages and disadvantages of debt financing .v. equity financing using the article above as a starting point

# THE ROLE OF BANKS

## The importance of interest rates

Three kinds of interest rate which are useful for you to know about are:

1. What is the Bank of England base rate? The official bank rate (also called the Bank of England base rate or BOEBR) is the interest rate that the Bank of England charges Banks for secured overnight lending. It is the British Government's key interest rate for enacting monetary policy. The security for the lending can be any of a list of eligible securities (commonly Gilts) and are transacted as an overnight repurchase agreement.
2. What is Libor? The London Interbank Offered Rate is the average of interest rates estimated by each of the leading banks in London that it would be charged were it to borrow from other bank. It is usually abbreviated to LIBOR. It is the primary benchmark, along with the Euribor, for short-term interest rates around the world
3. 'Coupon' rate – long term interest rates which determine the annual coupon payment an investor will receive from a bond contract from either a firm or Government.

## Types of Banks

1. *Central Bank*: For example 'The Bank of England' or the 'Federal Reserve' for the USA or the 'Bundesbank' for Germany or 'The European Central Bank' for the Eurozone area. It is a bank run by the Government which often issues state currency and controls monetary policy. The UK's central bank has Mark Carney as Governor and a MPC (Monetary Policy Committee) that sets the short-term interest rates for the UK every month.
2. *Commercial Banks*: For example Barclays or HSBC; these banks are also known as retail or 'high street' banks. The objective of these banks is to maximize profit by making themselves attractive to customers and situating themselves in high streets and other shopping centres. More recently, the internet has been one of the main ways that these banks conduct their businesses, meaning the 'high street bank' as it was known is on the decline.
3. *Investment Banks*: For example 'Lehman Brothers' (before it became insolvent) and Goldman Sachs. These banks used to be called 'merchant banks' until recently. These banks do not accept deposits from customers as commercial banks do. Rather, they help companies and other institutions (some financial) raise finance by selling shares or bonds to investors and to hedge against risks. For example an investment bank might oversee the launch of shares from a company and agree to buy up any excess shares which have not been bought in other words underwriting the equity release. Additionally investment banks will trade on the financial markets (money, capital, currency, derivatives, commodity) for clients. Often, the largest investment banks are a combination of commercial and investment. So HSBC has it's commercial arm but also an investment bank arm. The only banks to remain independent of the commercial banking sector are J.P. Morgan and Goldman Sachs, two US based investment banks. Critics of investment banks claim they are just 'casino banks', gambling with obscure derivatives (like mortgage backed ones!) in a fools' errand which places the financial system at 'systematic risk'. Systematic risk refers to the risk of a breakdown of the entire banking system rather than the failings of individual banks. This may result in a severe downturn for the wider economy as firms for example are unable to easily raise finance for their activities. Job losses and closures will result. There are worries that the intergration of commercial and retail banks can lead to 'insider trading' as the conflict of interest becomes problematic. By 2019, all banks need to ring-fence different activities within the bank to prevent this from happening. This ring fence is sometimes called a 'Chinese wall'.

## The Banking Industry in the UK

- The UK banking sector is dominated by a four very large banking groups, including the Lloyds Group, Barclays, the Royal Bank of Scotland (RBS), and HSBC. In response to the financial crisis, the UK banking sector went through a process of consolidation. In January 2009 the Halifax Bank of Scotland (HBOS) merged with Lloyds TBS to create the single biggest banking group, the Lloyds Group. By 2015 the market share of Lloyds Group in terms of personal current accounts had risen to 27% of the total market. Between them, the big four hold 77% of personal accounts and 85% of business accounts.
- There has been new entry into retail banking in recent years. Aldermore entered in 2009 providing business lending. Metro was the first new high street bank in more than 100 years when it received its banking licence in March 2010 and offers both PCAs (Personal Current Accounts) and SME (small and medium enterprise or businesses) banking including BCAs (business current accounts). Several other new entrants in PCAs have their roots in ancillary financial or retail services such as Tesco Bank (which entered in 2014), the Post Office (which entered in 2013/14), Virgin Money (which entered in 2014), and Marks & Spencer Bank (M&S Bank, part of HSBC) which entered in 2012. Santander entered the UK PCA and SME banking markets through its acquisition of Abbey National plc in 2004, followed by its acquisitions of Bradford & Bingley Building Society in 2008 and Alliance & Leicester Building Society in 2009.

**TASK:** Read the information above and label the following statements as TRUE (T) or FALSE (F)

1. Investment banks accept deposits from the public in the high street and then reinvest them in the financial markets
2. The Central Bank in the UK is run for profit
3. Commercial banks are a vital source of finance for firms
4. The UK Banking industry is a monopoly market
5. A Chinese Wall is the term used to describe the separation of certain banking activities in one bank to prevent insider information being used.

## How do Banks work as a business? The Importance of Balance Sheets

A balance sheet shows the monetary value of assets and liabilities of an organization and is usually created towards the end of the financial year to provide a rough overview of the financial health of the firm, organisation, charity etc.

**TASK:** In the space below, draw a balance sheet for your own financial health using the information in the right hand box and calculate your personal 'equity' – are you insolvent or not?!! HINT: The numbers at the bottom will always equal each other. If you need extra help, then access this video: <https://www.tutor2u.net/economics/reference/balance-sheet-for-commercial-banks>

Assets	Liabilities (and Equity)	<b>Assets on a Balance Sheet</b> Assets can include money in bank, capital, technology, work in progress, brand name and other intangible assets. Some assets, especially the intangible assets are difficult to quantify and there is scope for exaggerating their value for the benefit of balance sheets.  <b>Liabilities on a Balance Sheet</b> Liabilities include debt that the organization might have.  <b>Equity (and insolvency)</b> The net worth of a company is simply the total assets minus total liabilities. Therefore the assets minus liabilities equal the 'Equity' in the firm. This is the money you would have left if you got rid of all your debts and sold your assets (so called 'positive equity'). If liabilities are greater than assets (and so your equity is negative) then we say the company is insolvent. Confusingly, positive equity will appear on the right hand side of the balance sheet and negative equity will appear on the left hand side of the balance sheet!
Total	Total	

### Liquidity

Refers to the ability of the individual organization to convert their assets into cash in a short period of time. Cash is the most liquid form of asset as it can be readily exchanged without much risk of capital loss (apart from inflation!). If an asset is considered to be liquid, then it can be sold and converted to currency very easily. A house therefore is quite an illiquid asset whereas a Government bond or share in another company might be more liquid? Returns (interest rate payments etc.) on illiquid assets for a company are likely to be higher as it is harder for the organization to convert that into cash and therefore their money is 'tied up'. On the flip side, more liquid assets are likely to hold lower returns. Ultimately the most liquid asset, cash (notes and coins) has no return and because of moderate inflation might be losing its value.

**TASK:** How liquid are your assets above?

### Bank Balance Sheets

Assets and liabilities for a bank are a bit strange. If a customer (saver) comes in and makes a deposit, then this appears on the bank's balance sheet as a 'liability' because it is almost like a loan from the saver to the bank and this customer could demand its return at any moment. As we know, banks will take that deposit and then loan it out to another customer (borrower) who needs funds. Therefore the loan is considered to now be an ASSET for the bank. How good an asset will depend on the credit-worthiness of the customer who took out the loan from the bank!

**TASK:** Below is the balance sheet for three banks, A, B and C. Answer the following questions:

- Which of these banks is insolvent?
- Which of these banks has the most liquidity?

ASSETS	A	LIABILITIES (& Equity)	ASSETS	B	LIABILITIES (& Equity)	ASSETS	C	LIABILITIES (& Equity)
Loans to Customers		Customer deposits	Loans to Customers		Customer deposits	Loans to Customers		Customer deposits
Securities (Bonds etc.)		Money owed to other banks (loans)	Securities (Bonds etc.)		Money owed to other banks (loans)	Securities (Bonds etc.)		Money owed to other banks (loans)
Cash Reserves at the Bank of England		Equity			Equity	Negative Equity		

## Objectives of banks (security, liquidity and profit)

**TASK:** Using the information on the previous page and after reading pp 244-245 in your textbook (or see the sheet given out in class), answer the following questions:

How do banks make a profit?	
Why do banks have to be careful with the amount they loan out?	
CONFLICT 1: Can you give an example of a 'liquid asset' other than cash? Why will more liquid assets mean less profit for banks?	
CONFLICT 2: Can you give an example of a 'secure asset'? Why will more secure assets mean less profit for banks?	

**TASK:** Banks tend to have a lower '**leverage ratio**' than other firms; this is the proportion of debts (liabilities) that a bank has compared to its equity. This is because it means banks can bring in more debt to boost their assets and so make more profit. However some argue this can leave them vulnerable to insolvency and because the big four banks of the UK industry are so large, this brings with it the possibility of greater 'systematic risk'. With this in mind, research what 'Zombie Banks' are and write a few sentences below explaining this concept.

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## Criticisms of Banks in General

Banks do have a bad reputation. This is partly due to their role in the financial crash of 2007-8 but since then there have been a series of other issues. The Glass-Steagall Act was repealed in 1990's. This law prevented commercial and investment banking arms sharing their resources but in 1999 it was dissolved which meant that banks could use customer deposits, loans from other banks to invest into the financial markets especially the derivative markets! Some argue this is a primary cause of the financial crash. Since then, there have been further scandals to do with excessive board room pay and bonuses, the LIBOR scandal and the Flash Crash of 2010. We will look at Governmental regulation next year but it is important to note of some of the regulations that Government's have and could bring in to curb the 'excesses' of banks and to try and control the banks above especially since the size of the banks and their inter-relatedness means the 'systematic risk' is larger.

**EXTENSION TASK (optional):** To prevent banks from becoming insolvent or becoming illiquid, the Government could enforce the following ratios...see if you can research and find out what they are (this is hard so do not worry if you struggle, we will revisit it in the next revision worksheet)

Reserve Ratios	
Liquidity Ratios	
Leverage Ratios	
Capital Adequacy Ratios	

# MARKET FAILURE IN THE FINANCIAL MARKETS

Types of market failure in financial markets	
Type	Explanation
MORAL HAZARD	This exists in a market where an individual or organisation takes many more risks than they should do because they know that they are either covered by insurance, or that the government will protect them from any damage incurred as a result of those risks.
ASYMMETRIC INFORMATION	This type of market failure exists when one individual or party has much more information than another individual or party, and uses that advantage to exploit the other party.
MARKET RIGGING / MONOPOLY POWER	This type of market failure is effectively collusion or abuse of a power resulting from a concentrated market. When there is a small number of firms in a market, they may choose to work together to increase their joint profits and exploit consumers.
MARKET BUBBLES / HERD MENTALITY	A bubble exists when the price of something is driven well above what it should be, usually due to the behaviour of consumers.
EXTERNALITIES	A negative externality exists when a market transaction has a negative consequence for a 3rd party. A positive externality exists when a market transaction has a positive consequence for a 3rd party. We can also talk about network externalities, whereby there are knock-on effects of organisations working together – you could describe this as synergy if the effects are positive, or discord if the effects are negative.
PRINCIPAL-AGENT PROBLEM	This situation exists when one person (i.e. the agent) is able to make decisions on behalf of another person (i.e. the principal), but the principal is unable to adequately supervise the agent. This can result in the agent acting in his/her own best interests rather than the interests of the principal.
SPECULATION	This can be defined as a risky action in which a person or organisation tries to predict what will happen to the price of an asset and buys / sells accordingly in order to try and make a profit. A speculator takes advantage of fluctuations in market prices.
INCOMPLETE MARKETS	An incomplete market exists when the available level of supply is not enough to meet the needs and wants of consumers i.e. only a proportion of potential demand is met.

## THE SUB-PRIME MORTGAGE CRISIS

This crisis is regarded by many as being the main fuel that ignited the 2007/2008 financial crisis. **Sub-prime lending** refers to the lending of money, usually to buy a house, to people who are very risky to lend to. To compensate for the risk of lending, banks charge higher interest rates. When house prices were rising in the 2000s, banks decided that the risk of sub-prime lending had fallen, as the borrowers would simply be able to sell their houses for a higher price than they had bought them at in order to repay their mortgage if they ran into financial difficulties. In the US, many sub-prime loans were insured by the firms Fannie-Mae and Freddie-Mac. However, when house prices started to fall, sub-prime homeowners found themselves in **negative equity** and unable to repay their loans. This meant that banks lost out. This crisis spread quickly, because banks had sold on the debt in the form of **financial derivatives**. Effectively, they had 'chopped up' the safe loans and the sub-prime loans and 'repackaged' them together in a bundle, selling them for a higher price than they would have received for merely selling on the sub-prime loans. The financial institutions (such as pension funds) buying these derivatives didn't really understand the risk attached to them, because the derivatives had been given high ratings by the companies responsible for assessing risk ("**credit ratings agencies**"). This meant that many financial institutions owned some sub-prime debt. The US government ended up bailing out Fannie-Mae and Freddie Mac, and the UK government bailed out a number of UK banks.

**TASK:** Using the information above and your PREP notes, explain what type of market failures could be attributed to this scenario

## THE 2010 WALL STREET FLASH CRASH

On May 6th 2010, the price of shares on the US **Dow-Jones Index** plummeted nearly 1000 points in a matter of minutes, before rebounding within 30 minutes; this was the largest daily drop in the Index's history. This wiped a temporary \$1 trillion off the value of shares on the **New York Stock Exchange (NYSE)**. For years, the cause of the flash crash was unknown. Initially, analysts suggested that the cause could be due to slower IT being used on the NYSE compared with the IT used by financial firms, allowing changes in share prices to be exploited in a **bear market**. An alternative suggestion was that the crash was due to over-activity by **High-Frequency Traders (HFT)** – these are (usually) computerised trading programs that buy and sell shares within milliseconds to make a profit.

However, in April 2015, the US Department for Justice brought charges against Navinder Singh Sarao, a London-based HFT for his role in the crash. The US believed that he used commercially-available computer software to create large "sell" orders (i.e. instructions to sell shares) which would cause the price of those shares to fall, but then pull out of the sale at the very last millisecond in order to benefit from buying shares at the lower price. This practice is known as "**spoofing**". The US authorities think that he earned \$40m as a result.

**TASK:** Using the information above, explain what type of market failures could be attributed to this scenario

## THE LIBOR SCANDAL

The "**Libor**" is the London Inter-Bank Offered Rate – this is the interest rate charged by banks in London when they lend to each other in the short-term. It is calculated every morning by Thompson Reuters, a company specialising in producing financial data. The calculation is based on information provided by members of the British Bankers Association.

The scandal "broke" in early 2012, when a whistleblower from Barclays Bank went public with the information that banks including Barclays, RBS and HSBC amongst others had been under-reporting their inter-bank rate to Thompson Reuters. The bankers had believed that by under-reporting the rate they would make their banks look stronger, because a low rate would indicate that they were trustworthy and creditworthy i.e. not risky. This in turn would boost profits.

There were a number of losers from the Libor-fixing scandal. One loser were the many local government organisations around the world who had bought a financial product called an interest-rate **swap** to try and reduce fluctuations in interest payments on the variable-rate bonds they had issued. Swap-sellers exploited the lack of financial knowledge of local governments by linking payments to local government to the artificially-low Libor rate. The US government estimates that the extra cost to local governments in the US alone was \$6bn.

**TASK:** Using the information above, explain what type of market failures could be attributed to this scenario