Edexcel A level Economics (A)
Theme 3
Markets and business behaviour

Course Companion 5

The labour market:
Demand for labour
Supply of labour
Wage determination
Government intervention

Name: _____
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Block: ___

3.5.1 Demand for labour:

a) **Factors that influence the demand for labour**
b) **Demand for labour as a derived demand**

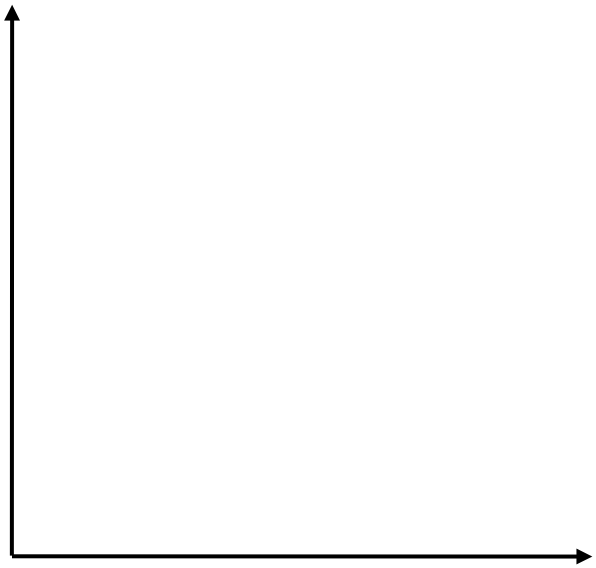
The demand for labour is the number of workers that firms are willing and able to hire in a particular job or industry for a given wage

The downward-sloping demand curve for labour

See Appendix A (p29) for (extension) derivation using marginal productivity theory

Explain why the demand for labour curve slopes downwards from left to right

Shows how many workers will be hired at a particular wage rate. Label the y-axis 'wage rate' and the x axis 'quantity of labour'. The higher the price of labour (wage), the less labour will be hired; the lower the price (wage) of labour, the more labour will be hired, hence, downward-sloping



(a) Factors that influence the demand for labour:

(i) **Movements up** (contraction) **and down** (extension) the labour demand curve – caused by changes in real wage rate only. Higher real wages increase costs of production and reduces the profit from each unit produced – firms may substitute away from labour and into more capital-intensive processes, and vice versa.

(ii) **Shifts of** the labour demand curve – caused by any other non-real wage rate factors:

The **demand for the product** being produced – a higher demand for the product (e.g. due to successful advertising) will increase the (derived – see p4) demand for workers

The **productivity** of labour – an increase in labour productivity which makes using labour more cost efficient than using capital equipment will increase the demand for labour

A government **employment subsidy** which reduces the cost of employment will increase the demand for labour

Changes in **technology** – new technology might reduce the demand for a particular type of labour

Shifts of the labour demand curve

The labour demand curve can shift in the same way as the demand for a product. A rise in the demand for labour would cause the curve to shift to the **right** and a fall in the demand for labour would cause the curve to shift to the **left**.

Explain in one sentence what would happen to the curve in each of the following scenarios:

1. A fall in the cost of capital

2. An increase in demand for the product

3. The Chinese government allows foreign companies to invest in China

4. An increase in the productivity of British workers

5. New technology which makes capital more efficient

Question:

Hundreds of oil workers will see their wages cut by nearly 10 per cent as the world fuel pricing crisis deepens. One of the leading oil companies in Scotland said lower prices have led to the cuts - but the reductions come while motorists continue to reap the benefits of the global glut of crude oil. Aberdeen-based Wood Group PSN announced plans to scythe the rates paid to around a third of its UK based company contractors by an average of nine per cent, which it insists is the same as other firms offer. *Glasgow Herald 20.2.2016*

Why were some North Sea oil workers facing pay cuts in 2016?

(b) Demand for labour as a derived demand

The demand for all factors of production is *derived from* the demand for the products produced by them

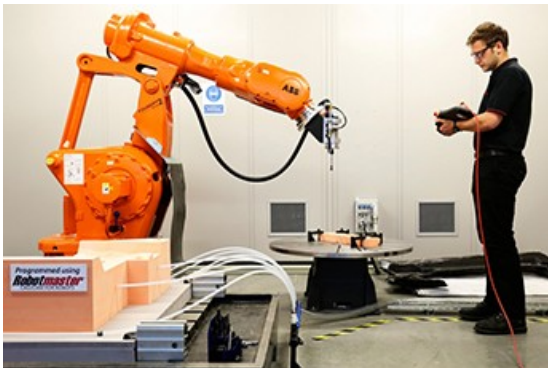
- In a growing economy the total demand for labour will rise as AD rises
- In a recession the total demand for labour will fall as AD falls
- If demand for a product is rising, the workers with relevant skills will be in greater demand
- In declining industries the demand for labour will fall

Case study: robot engineers

"…with increasing automation of production in sectors such as car-making. In turn, that has increased demand for new skills such as programmers for robots" (Guardian 29.3.16)

"The shortage of people who know how to build, program, maintain, and repair robots has gotten so severe that, in some parts of the country, qualified candidates can practically write their own ticket" (Fortune, US)

"While many blue-collar and even some white-collar jobs may be filled by robots, especially in manufacturing, a new set of jobs are being created. According to data from the Robotic Industry Association, the market for industrial robots continues to rise. This year has seen record pace for robot sales, compared to previous years, with automotive, food, and consumer goods manufacturers driving the largest growth in orders. However, as more robots enter the workforce, companies that use them face a shortage of workers with the skills to program and maintain the complex machinery." (PTC.com)



Questions:

1. Explain why the demand for sound engineers has fallen in recent years

2. Explain how advances in technology can lead to an increase in the demand for some workers and a decline in the demand for others.

3.5.3(d) The significance of the elasticity of DEMAND for labour [and the elasticity of supply of labour]

Elasticity of demand for labour is the responsiveness of the quantity demanded of labour (QD_L) to changes in the real wage rate (RWR – the 'price' of labour).

It is measured by the formula: $$\frac{\%\Delta QD_L}{\%\Delta RWR}$$

<u>Elasticity of demand for labour depends on:</u>

- **Labour costs as a proportion of total costs:** If labour cost is a large proportion of total cost, demand for labour will be very responsive to changes in wage rates (i.e. more elastic) but if labour cost is a small proportion of the total then a change in wages will have little effect on the demand for labour.
- **The ease of substituting other factors for labour:** If it is easy to substitute capital for labour, demand for labour will be more responsive to wage rate changes (more elastic).
- **PED of product being produced:** If demand is price elastic, demand for labour will be wage elastic e.g. if there is a rise in the wage cost of producing electricity, the price of electricity will rise but demand for electricity will remain largely unchanged, so the number of workers in the industry will remain unchanged.
- **Time:** The longer the time period, the easier it is to substitute labour for other factors of production or vice versa. In the short run a firm may have little choice but to employ the same number of workers even if wages rise rapidly. In the long run it can change methods of working or find suitable capital to replace the labour.

Case study

Reasons why there is a growing demand for engineers in the UK

- **Cyber security**
  With demand for cyber skills set to grow by 13 percent per year up to 2017, companies are already dealing with a shortage of knowledge and expertise

- **Smart power**
  As interest in 'smart grid' systems increases, engineers will play a vital role in developing new ways of managing the flow of electricity, while utilities firms will need to invest in IT to support plans.

- **3D printing**
  The increased demand for 3D printing expertise is for people are needed to research the technology and its applications.

- **Agri-tech**
  As demand for improved food production increases, technology will be required with a growing role for engineers. Informatics which gives data-driven insight into the way we use land, satellite imaging, remote sensing, meteorology and agri-engineering will all play a role in driving innovation in food production in future.

- **Robotics**
  An industry which will be fundamental to increasing manufacturing competitiveness.

3.5.2 Supply of labour:

(a) Factors that influence the supply of labour to a particular occupation
(b) Market failure in labour markets: the geographical and occupational mobility and immobility of labour

(a) Factors that influence the supply of labour to a particular occupation

The supply of labour is the number of workers willing and able to work in a particular job or industry for a given wage

Shows how many workers will be willing and able to work at a particular Real Wage Rate (RWR): the higher the price (wage) of labour, the more labour will be supplied; the lower the price (wage) of labour, the less labour will be supplied, hence upward-sloping. [**NB:** may be *backward-sloping* as individuals substitute (non-paid) leisure time for (paid) worktime beyond a certain real wage rate which is deemed sufficient to support their chosen lifestyle, and so higher wages may perversely lead to a *decrease* in the labour supply.

Explain why the labour supply curve slopes upwards from left to right

Label the y-axis 'wage rate' and the x-axis 'quantity of labour'
Draw the labour supply curve on the diagram below:

Factors influencing the supply of labour to a particular occupation:

(i) **Movements up** (extension) **and down** (contraction) the ~~labour supply curve – RWR only:~~

The higher the wage offered, the more people will want to do that job

(ii) **Shifts of** the labour supply curve – any other non-RWR factors:

- **Substitute occupations:** wage differentials between different occupations will cause some to switch jobs
- **Barriers to entry:** artificial restrictions to an occupation e.g. minimum entry requirements will restrict those able to work in the industry.
- **Non-monetary characteristics:** e.g. risks, non-social hours, job security
- **Net migration of labour:** a rising flow of people seeking work in the UK is making labour migration an important factor in determining the supply of labour available to many industries – e.g. to relieve shortages of skilled labour in the NHS or education, or to meet the seasonal demand for workers in agriculture and the construction industry.
- **Retirement age:** if this rises, the supply of labour increases.
- **Income tax rates:** alters the incentives to work plus those on low incomes looking to earn more are hit by high 'marginal withdrawal rates' (up to 90%) as not only do they pay tax on additional earnings but also lose entitlement to benefits.

The labour supply curve can shift in the same way as the supply of a product. A rise in the supply of labour would cause the curve to shift to the right and a fall in the supply of labour would cause the curve to shift to the left. **Explain in one sentence what would happen to the curve in each of the following scenarios:**

1. A rise in the retirement age

2. A fall in income tax

3. A rise in unemployment benefits

4. A subsidy for child care

5. Government labour regulations

6. A rise in immigration

7. A rise in emigration

8. Removal of regulations requiring that employees must be a member of a trade union

3.5.3(d) The significance of [the elasticity of demand for labour and] **the elasticity of SUPPLY of labour**

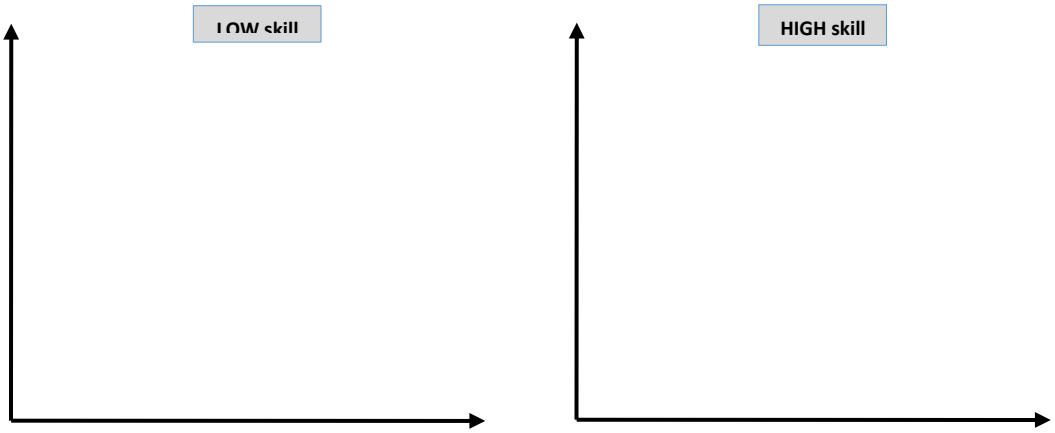
Elasticity of supply of labour is a measure of the responsiveness of the quantity supplied of labour to changes in the real wage rate (RWR).

It is measured by the formula: $\frac{\%\Delta QS_L}{\%\Delta RWR}$

Determinants of elasticity of supply of labour to an industry:

1. **Degree of skill needed**

If there is a LOW level of skill required then there will be many more workers able to supply themselves for any given increase in the wage rate. If there is a HIGH level of skill required, fewer workers will be available for any given wage rise:



2. **Amount of training required/ease of entry**

If much training is required then there may not be many available workers so supply will be less elastic

3. **Time**

Over a longer period, more workers could become trained and supply could become more elastic in response to a wage rise.

4. **Extent of unemployment and underemployment in the economy**

If there is very low unemployment in the economy there will be fewer available workers to an industry for any given wage rise.

5. **Occupational and geographical mobility**

How easily people can move for jobs (geographical mobility) or acquire the qualifications/skills needed for certain jobs (occupational mobility)

Case study: UK teacher shortages

As children around the country returned to school this week, some will have discovered for themselves what recent statistics had suggested: there are not enough teachers to teach them. Figures published on August 17th by the Universities and Colleges Admissions Service, which handles applications to teacher training courses, showed that the number of graduates applying to be teachers will fall short of government targets for the third year running. Last year one in 100 teaching posts in England was vacant or filled temporarily, after the number of people beginning teacher training courses fell for the sixth consecutive year, to 32,000, down from 39,000 in 2009. This year's figures suggest that in some subjects the shortages are particularly acute: according to an analysis by John Howson, a former government adviser, the number of people applying to train as English and maths teachers in 2015 fell 11% short of the government's target, while those applying to teach some niche subjects were in more limited supply still (less than half as many applied to teach design and technology as targets required). *(Economist 5.9.2015)*

Comment on the elasticity of supply of teachers

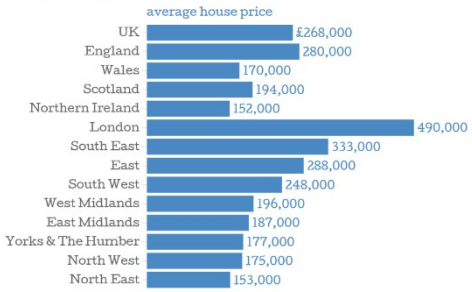
3.5.2(b) Market failure in labour markets: the GEOGRAPHICAL and OCCUPATIONAL mobility and immobility of labour

Geographical immobility refers to the inability of workers to move to different *places* to seek and find work.

Occupational immobility refers to the inability of workers to move between *jobs* as they lack appropriate skills, qualifications or training.

Causes of GEOGRAPHICAL immobility – expand on the following:

- Family and social ties
- The financial costs involved in moving home including the costs of selling a house and removal expenses.
- Job search costs
- Huge regional variations in house prices leading to a shortage of affordable housing in many areas
- The high cost of renting property



2015

- Differences in the general cost of living between regions and also between countries
- Migration controls e.g. a cap on inward migration
- Cultural and language barriers

Causes of OCCUPATIONAL immobility of labour – expand on the following:

- Lack of appropriate skills of those unemployed to move into job vacancies
- Low levels of transferable skills and training
- Structural unemployment caused by decline of industries- mismatch between skills and vacancies

Market failure will mean job vacancies exist in some areas while there is unemployment in other areas

Exercise

High levels of unemployment should mean that firms can recruit workers easily, without increasing their rates of pay. However, despite relatively high unemployment nationally, firms are finding it difficult to recruit workers with the right skills. According to a survey of 400 job agencies by the Recruitment and Employment Confederation (REC) and KPMG, the professional services firm, the availability of candidates to fill permanent job vacancies fell at their sharpest for almost 17 years in May 2014. Starting salaries for permanent and temporary staff had increased in recent months. Kevin Green, the REC's chief executive repeated his call for the easing of visa restrictions so that more highly skilled workers could be recruited from overseas.

a. Explain what is meant by elasticity of supply of labour

b. Explain whether economic theory would predict that the elasticity of supply of labour would be high or low if there were high unemployment in the country

c. Explain what would happen to the elasticity of supply of labour if there were an 'easing of visa restrictions'.

d. Explain why occupational and geographical immobility causes labour market failure.

3.5.3 Wage determination in competitive and non-competitive labour markets

(a) Diagrammatic analysis of labour market equilibrium
(b) Understanding of current labour market issues
(c) Government intervention in the labour market:

- **maximum and minimum wages**
- **public sector wage setting**
- **policies to tackle labour market immobility**

(a) COMPETITIVE labour markets – diagrammatic analysis

In a competitive labour market wages are determined by the demand for labour and the supply of labour.

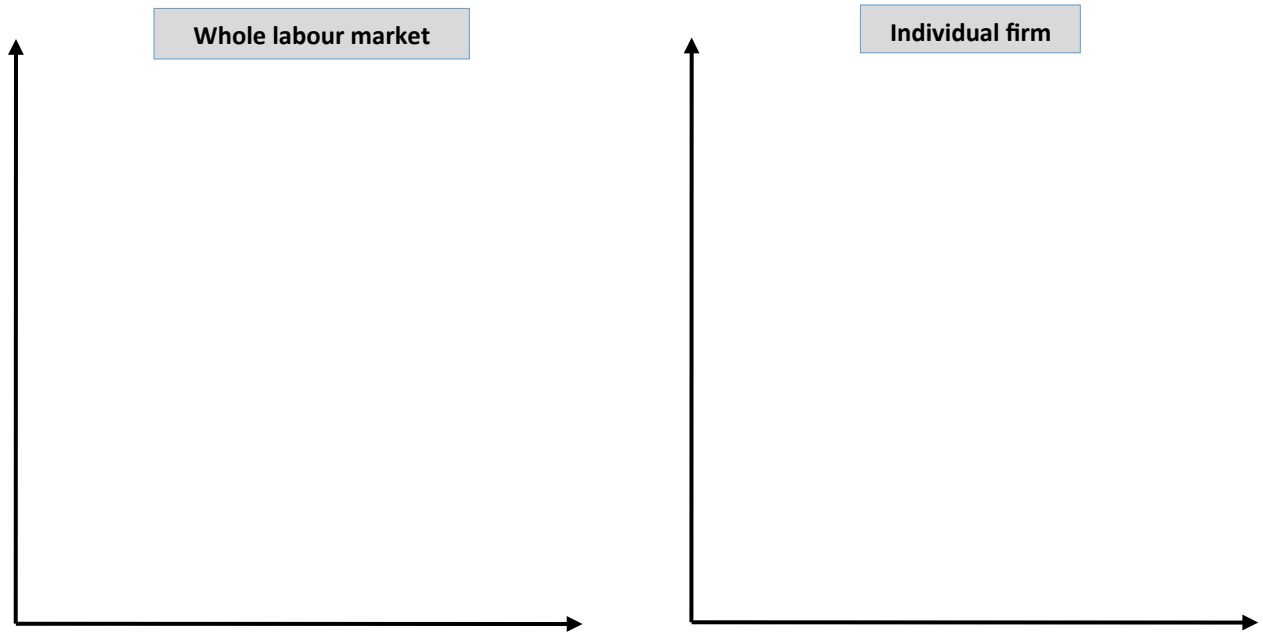
Assumptions:

1. **Freedom of entry to labour market**
   i.e. no barriers to workers moving into a job or occupation

2. **Perfect knowledge**
   workers know about what jobs are available and conditions of employment; employers know what labour is available and how productive it is

3. **Firms are 'wage takers'**
   i.e. have to pay the going wage rate determined by market conditions

4. **Homogeneous labour**
   all workers have the same productivity, are equally skilled and motivated



Task:

Explain why the supply of labour for the firm is a horizontal straight line.

Exercise:
Which of the above assumptions about a competitive labour market would be correct for the following?

a. Supermarket checkout operators

b. Agricultural workers

c. Crane operators

d. Economics teachers

e. Call centre workers

Why do wage rates differ?

In the real world wage rates differ because labour is not homogeneous. Workers differ by the degree of human capital they have as well as by ability.

Reasons for wage differentials:

In the real world wage rates differ because labour is not homogeneous. Workers differ by the degree of human capital they have as well as by ability. Factors causing differences in wages include:

- Elasticity of demand and supply of labour
- Differing demand for labour
- Differing levels of supply of labour
- Compensatory reasons – skills/qualifications/experience/region/productivity/age
- Hours worked (social/unsocial)
- Public versus private sector workers
- Problem of a monopsony employer for certain workers
- Impact of trade union membership
- Impact of immobility of labour
- Level of responsibility, e.g. company manager compared to a cleaner in the company
- Impact of discrimination
- Gender pay gap
- Current labour market issues – gig economy/zero hours/austerity/gaps in employment for carers

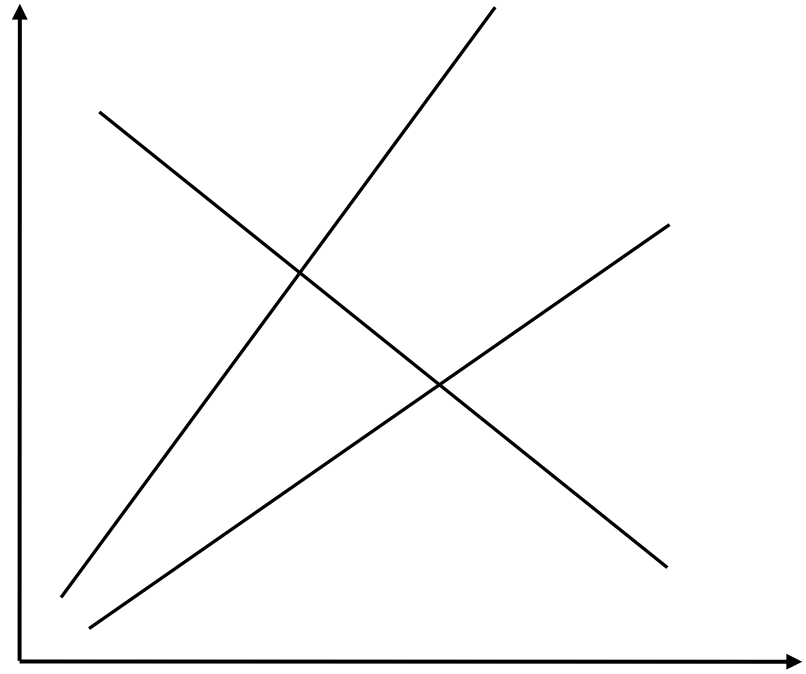
Essay question:
In July 2017 it was announced that only a third of the BBC's 96 top earning presenters were women and that its seven highest-paid presenters were all men. According to the High Pay Centre, in 2018, UK chief executives can earn 120 times more than the average full-time worker earning £28 758.

With reference to an industry of your choice, evaluate why wage differences exist within the UK labour market.

(a) NON-COMPETITIVE labour markets – diagrammatic analysis

1. Monopoly BUYER of labour (monopsonist)

If a firm/employer is the only buyer of a certain type of labour it can use its market power to force down wages. As the only employer, if the firm wants to employ one more worker it must offer a higher wage to attract that worker, and pay that higher wage to all other workers. Therefore the **marginal cost of employing one more worker is HIGHER THAN the average wage**, as shown below:



1. Label supply curve for labour (average wage)
2. Label MC curve (wage for last worker)
3. Label demand curve (MRP – see Appx A) for labour
4. Indicate profit-maximising level of employment (MC=MRP)
5. Mark in the wage that needs to be paid to attract this number of workers

Compare this wage rate and level of employment with that of a competitive labour market:

Give examples of monopsony employers:

Case study: Junior doctors vs NHS dispute (adapted from www.bbc.co.uk April 2016)
Junior doctors' leaders are objecting to the prospect of a new contract in England.
The starting salary for a junior doctor is currently just under £23,000 a year, but with extra payments for things such as unsociable hours, this can quite easily top £30,000.

Junior doctors at the top end of the scale can earn in excess of £70,000. But it's important to remember these doctors can be in charge of teams, making life-and-death decisions and carrying out surgery. They are really only behind consultants in seniority.

In total, there are 55,000 junior doctors in England - representing a third of the medical workforce.
Basic pay is to be increased by 13.5% on average. But that comes at a price: other elements of the pay package are to be curbed, including what constitutes unsociable hours. Day hours on a Saturday will be paid at a normal rate, while extra premiums that are being offered for night and the rest of the weekend are lower than what is currently paid. Guaranteed pay increases linked to time in the job are also to be scrapped and replaced with a system linked to progression through set training stages.

Ministers have promised to protect the pay of existing doctors for the first three years. A small number - about 1% - who do lots of extra hours and qualify for premium payments that are being scrapped could lose out however.
But these changes are not just about winners and losers on day one. They have partly been designed to make it cheaper to roster extra doctors on at weekends. Therefore, medics are likely to find they are working more weekends, which, under the existing contract, would have led to extra pay.
What is more, some of the changes will take time to have an effect. For example, the ending of guaranteed pay rises linked to time-in-the-job will mean some doctors find their pay will go up more slowly during their time as a junior medic. And, of course, new doctors starting their career in the NHS under this contract may be worse off than they would have been if they started under the current deal.

To what extent does this illustrate monopsony power of the NHS?

2. Monopoly SELLER of labour (trade union)

A trade union is an organised association of workers in a trade or profession which is formed to promote the interests of workers.

Examples:

- BMA (British Medical Association)
- NEU (National Education Union)
- FBU (Fire Brigades Union)

As workers will have little power as individuals and be in a weak bargaining position, they are better off if organised in a union which can represent workers collectively when negotiating pay and working conditions.

A strong trade union might be able to push the wage above the competitive level.
What factors would increase the strength of a union?

Trade union effect on wages (real wage or Classical unemployment):

Explain why this higher wage might be at the expense of jobs

3. Bilateral monopoly – one BUYER vs one SELLER

If a trade union operates in a monopsony labour market then the 'only buyer' is facing the 'only seller' of labour.

Example:

- NHS vs BMA

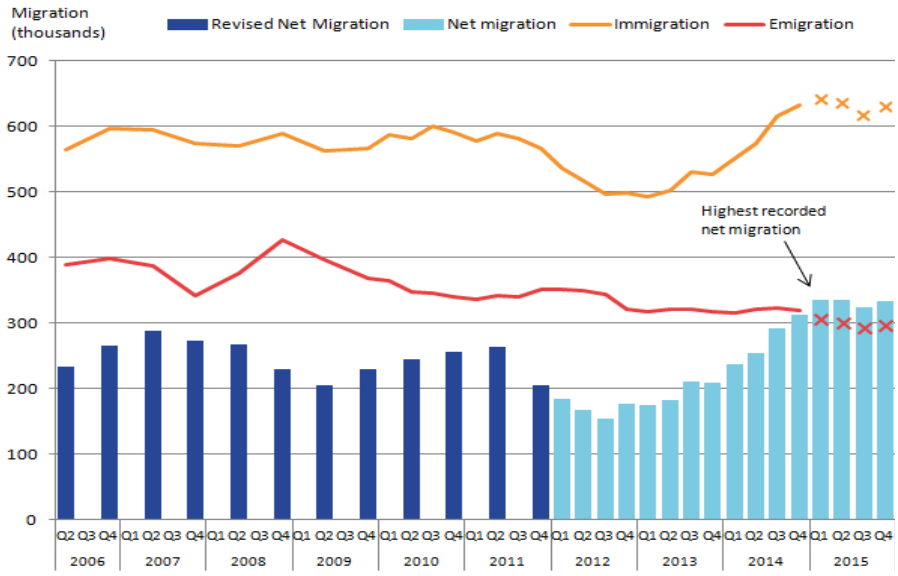
The monopsony employer will want to pay a lower wage and the trade union will want a higher wage for its members.

What factors will determine the actual wage?

3.5.3(b) Understanding of current labour market issues

1. Migration

2015 saw the highest ever net inward migration into the UK
Source: ONS May 2016



The most commonly stated reason for immigration to the UK is work ... In December 2015, 308,000 people immigrated for work, an increase of 30,000 from the previous year and the highest estimate on record. Of these, 178,000 (58%) had a definite job to go to and 130,000 (highest estimated) arrived looking for work – a statistically significant increase. ***ONS***

The impact of immigration is to increase the labour force. There are potential effects on employment, unemployment and wages.

The labour market effects of immigration

In theory, the impacts of immigration on wages and employment of existing workers critically depend on whether and to what extent migrants' skills are complements or substitutes to the skills of existing workers, and on how immigration affects the demand for labour

The impacts of immigration on the labour market critically depend on the skills of migrants, the skills of existing workers, and the characteristics of the host economy. They also differ between the short and long run when the economy and labour demand can adjust to the increase in labour supply. The immediate short run effects of immigration on the wages and employment of existing workers depend particularly on the extent to which migrants have skills that are substitutes or complements to those of existing workers. If the skills of migrants and existing workers are substitutes, immigration can be expected to increase competition in the labour market and drive down wages in the short run. The closer the substitute, the greater the adverse wage effects will be. Whether and to what extent declining wages increase unemployment or inactivity among existing workers depends on their willingness to accept the new lower wages. If, on the other hand, the skills of migrants are complementary to those of existing workers, all workers experience increased productivity which can be expected to lead to a rise in the wages of existing workers.

In addition to expanding labour supply, immigration can also increase the demand for labour. Migrants expand consumer demand for goods and services. In the medium to long run, immigration can be expected to lead to more investment. Both effects result in greater demand for labour and thus increased wages and employment in the economy. In other words, the number of jobs in an economy is not fixed (the "lump of labour fallacy"). Immigration can increase competition for existing jobs but it can also create new jobs. The extent to which investment and labour demand respond to immigration depends on the characteristics of the economy. During an economic downturn labour demand may respond more slowly than during times of economic growth.

The Migration Observatory, University of Oxford, 2015

A report published by The Bank of England in December 2015 used statistical analysis to show that the immigrant to native ratio has a small negative (downward) impact on average British wages, i.e. in occupations where this ratio is higher, wages tend to have been affected more. The biggest impact of immigration on wages is within the semi/unskilled services occupational group.

Q: To what extent would you expect there to be a downward effect on the wages of care workers and hotel cleaners as net immigration grows?

2. Skills shortages

The government produces a 'shortage occupation list' which provides information for employers of recruiting migrant workers under the points-based system for issuing visas (and what such workers might be paid.)
The list includes:

- Physical scientists and engineers (of may types)
- Medical practitioners (including specialist nurses, radiographers)
- Computer programmers
- Secondary school teachers (of maths and science)
- Skilled classical ballet dancers
- Chefs

'If an occupation is on the shortage occupation list, this means that there are not enough resident workers in the UK to do the available jobs in that occupation." The Home Office

UK needs plumbers, builders and engineers as skill crisis hits economy *Guardian 10.2.15*

Britain is facing its biggest skills shortage for a generation. From plumbers and builders to engineers, there are talent gaps across a range of professions that threaten to derail attempts to re-energise the economy.
The scarcity of skills in key sectors has big repercussions – from projects having to be put on hold to soaring pay for some of those most in demand – such as bricklayers and plumbers.

The construction industry, a key economic driver, has been particularly hard hit. It accounts for about 7% of GDP and a survey by the recruitment consultant Manpower recently revealed that the outlook for the sector was at its strongest level since 2007. Mark Cahill, managing director of Manpower Group UK, said the upturn presented its own problems. He also noted that the shortage of skilled Britons was so acute that building firms in the capital were hiring Portuguese bricklayers on wages of £1,000 a week – double the normal £500 weekly pay for bricklayers.

The Union of Construction, Allied Trades and Technicians, blames the shortage on "a 30-year failure to train apprentices". In 2013, just 7,280 apprentices completed their training across all trades while Construction Skills, the training body, estimates the industry needs 35,000 new entrants just to stand still – and this figure will grow as the sector continues to recover.

Pimlico Plumbers, one of the biggest plumbing firms in London, has also been forced to take action to plug a yawning skills gap. As a result of a chronic shortage of good plumbers inside the M25, it has launched a national recruitment drive in an attempt to attract talent from outside the capital. Charlie Mullins, its chief executive, said: "The growth in the economy and the returning spending confidence of businesses and consumers has seen demand for our services soar. But the availability of skilled engineers is heading in the opposite direction." Mullins said it presented a great opportunity for experienced plumbers to cash in on their skills: "Our plumbers can earn up to £100,000 a year," he said.

Analysis by the Royal Academy of Engineering suggests Britain will need more than a million new engineers and technicians by 2020 – which will require a doubling of the current number of annual engineering graduates and apprentices. Without them, any chance of riding on the coat-tails of an infrastructure-led economic revival appears to be wishful thinking. Philip Greenish, chief executive of the RAE, said there was a skills shortage in all sectors "from transport to high-value manufacturing". He added: "Only significant investment in higher education will unlock the engineering talent that the UK economy needs to succeed."

A spokesman for Airbus, which has one of the country's biggest engineering graduate and apprentice schemes, summed up the predicament. "Britain has not given enough scope or credibility to our engineering prowess. We have allowed it to lapse as we have veered into a service based economy."

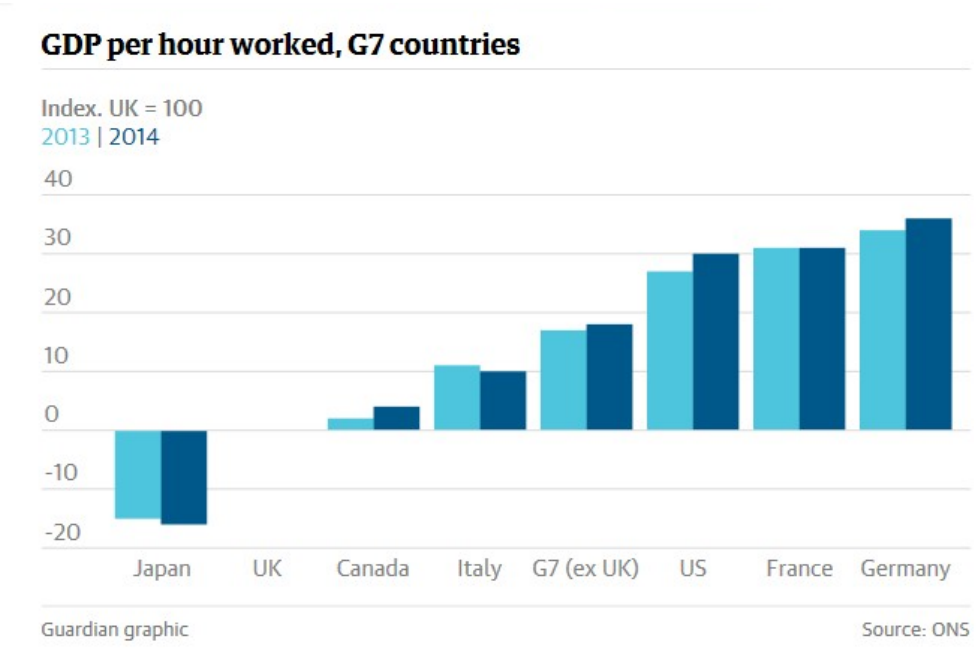
1. Outline **three** causes of the UK skills gaps
2. Discuss **two** policies to reduce the gap
3. Discuss the possible impact on the UK economy of lack of skilled engineers, construction workers and plumbers the

3. Low productivity

Labour productivity is output per worker for period of time. For many years UK productivity has been lower than that of other industrialised countries. UK productivity has also been very slow to recover since the financial crisis.
Revision: determinants of productivity:

UK productivity gap widens to worst level since records began Guardian 7.5.16

Britain's poor productivity record has been highlighted by government figures showing the biggest gap with other leading western economies since modern records began in the early 1990s. Output per hour worked in the UK was 18 percentage points below the average for the remaining six members of the G7 group of industrial nations in 2014, the Office for National Statistics said.



The gap – up one percentage point on the previous year – was the widest since 1991 and showed a particularly marked deterioration since the onset of the financial crisis and deep recession of 2007-09. The shortfall was slightly smaller than the 20-point gap reported in the ONS's preliminary estimates released in September 2015. In the first half of the 2000s, the UK narrowed its productivity gap with the rest of the G7 to just 4 percentage points but the period since has seen that trend go into reverse.

The ONS's final international estimates of productivity in 2014 found that output per hour in the UK was now 36 percentage points behind that in Germany - the biggest gap ever recorded with a fellow G7 country and up two points on 2013.

Britain had a 30-point productivity shortfall with the US in 2014 - up three points on the previous year - and an unchanged 31-point gap with France. Only Japan of the G7 countries had a worse productivity record, the ONS said.

What is the significance of the productivity gap for the UK economy?

Other current labour market issues:

i) Gender pay gap

The gender pay gap is calculated as the difference between average hourly earnings (excluding overtime) of men and women as a proportion of average hourly earnings (excluding overtime) of men's earnings.

*One of the reasons for differences in the gender pay gap between age groups is that women over 40 years are **more likely to work in lower-paid occupations** and, compared with younger women, are less likely to work as managers, directors or senior officials.*

For age groups under 40 years, the gender pay gap for full-time employees is now close to zero. Among 40- to 49-year-olds, the gap (currently 11.4%) has decreased substantially over time (from 24% in 1997).

*Among 50-to 59- year-olds, and those over 60 years, the gender pay is over 15% and is not declining strongly over time. In the case of those over 60 years, the gap has grown from 7.3% in 2004 to 15.4% in 2019. **The introduction in 2010 of the higher state pension age for women** can be expected to have affected the working patterns of some women (more likely those in lower-paying jobs) in this age group.*

*Although the gender pay gap for full-time employees is close to zero between the ages of 18 and 39 years, for all employees the gender pay gap already stands at over 10% in the age group 30 to 39 years. This coincides with **an increase in women working part-time from this age** and suggests an important step towards women earning less per hour (because part-time jobs pay less per hour than full-time jobs).*

*Other employment changes are also likely to have an effect as households move towards having **greater caring responsibilities, often from the mid 30s upwards**. For example, research conducted by the Office for National Statistics (ONS) has identified that, compared with men, women are more likely to leave their job over a long commute.*

*These factors may affect the occupations that women work in, either at age 30 to 39 years or at later ages. **Occupation has been identified in research by the ONS as having a notable impact on the gender pay gap.***

Source: ONS - Gender pay gap in the UK: 2019

1. What factors contribute to the gender pay gap?

ii) The rise of the Gig Economy

What is the 'gig' economy?

*In the gig economy, instead of a regular wage, workers get **paid for the "gigs" they do**, such as a food delivery or a car journey.*

*In the UK it's estimated that **five million people** are employed in this type of capacity.*

*Jobs include **couriers, ride-hailing drivers** and video producers.*

*Proponents of the gig economy claim that **people can benefit from flexible hours**, with control over how much time they can work as they juggle other priorities in their lives.*

*In addition, the flexible nature often offers benefits to employers, as they **only pay when the work is available, and don't incur staff costs when the demand is not there**.*

Meanwhile, workers in the gig economy are classed as independent contractors.

*That means they have **no protection against unfair dismissal, no right to redundancy payments, and no right to receive the national minimum wage, paid holiday or sickness pay.***

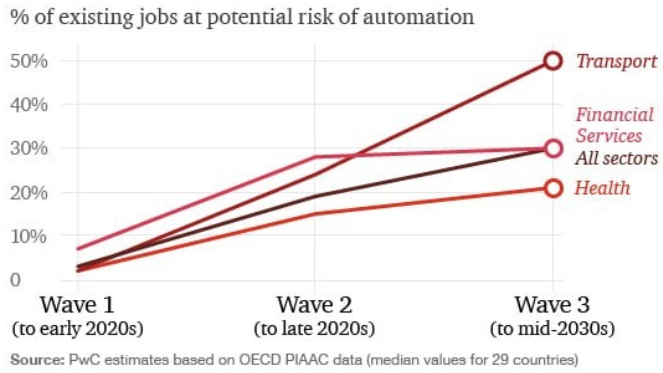
Source: BBC News - 10 Feb 2017

1. What are the pros and cons of the gig economy for businesses and workers?

iii) Automation / robotics and the future pattern/level of employment – will robots really steal our jobs?

*Automation will **vary significantly by industry sector** and vary over time.*

*In the short term, the largest impacts could be on sectors like **financial services** where algorithms can lead to faster and more efficient analysis and assessments. In the longer term, however, the development of **autonomous driverless vehicles could mean that the largest impacts are seen in the transport sector**.*



*In contrast, while no sector will be unaffected by these technologies, **areas like health may be relatively less affected due to a greater reliance on social skills and the human touch**. AI (Artificial Intelligence) and robots will have an important role in health care in future, but more working **alongside** human doctors and nurses than replacing them. The same would be*

Education and retraining is critical to adapting to new technologies

*In the short term, the impact of automation may be low for workers of all education levels, but in the long run our estimates show that **those with lower education levels could be much more vulnerable to being displaced by machines.***

*Governments and business need to work together to **help people adjust to these new technologies through retraining and career changes**. A culture of adaptability and lifelong learning will be crucial for spreading the benefits of AI and robotics widely through society, particularly with an ageing population where we need people to be able to work for longer.*

***Improved STEM skills will be important** in allowing people to take the high technology jobs that will arise out of AI and robotics, but **soft skills will also be important in making people adaptable and employable** throughout their working lives.*

Source: PwC

1. Which jobs might be most and least affected by automation?
2. What measures can the government take to ensure workers adapt to new technologies?

3.5.3(c) Government intervention in labour markets

(c)(i) MAXIMUM wages

Governments are more likely to impose minimum wages. However, some forms of maximum wage limits have been set in the past or might be set e.g.

1. As part of a prices and income policy, to control inflation, maximum pay **rises** were set by the UK government in the 1970s
2. There has been discussion recently of methods to setting a possible maximum reward for chief executives of companies e.g. setting a ratio of chief executive pay to that of the lowest earner in the business. The reason for this is degree to which executive pay has increased far more than that of workers.
   Watch video clip at http://highpaycentre.org/blog/new-film-income-inequality-in-the-uk
   What statistics are presented about the pay gap in the UK?

   What is the case presented here for a policy to reduce the pay gap?

3. The government might set maximum pay limits for public sector workers.
   In 2010 the UK government announced a 3 year pay freeze for all public sector workers. Since 2013, annual pay rises have been limited to 1%

Impact of a maximum wage

Show the effect of a maximum wage rate for an industry set below equilibrium.

What would be the significance of a maximum wage if demand and supply were both inelastic?

Case study 1: Executive pay

Ministers should consider forcing companies to cap executive pay at a fixed multiple of their lowest paid employee, a lobby group has urged. The High Pay Centre said in a report that, since the 1990s, executive pay had grown from 60 times that of the average UK worker's pay packet to nearly 180 times. Radical action was needed if the gap was to return to more proportionate levels.
Investors in luxury group Burberry on Friday voted down a £20 million pay deal for new Chief Executive Christopher Bailey. This followed other pay revolts by shareholders at FTSE companies including Barclays and HSBC.
The High Pay Centre said the perception of an executive elite reaping all the reward from economic growth was damaging trust in business, while the threat of widening inequality could also cause political and economic instability. (FT 14.7.14)

a. Using a diagram, explain the possible impact on pay and employment if the pay of top executives was capped 'at a fixed multiple of their lowest paid employee'.

b. Using the concept of the divorce of ownership and control, explain how chief executives can reap 'much of the reward of economic growth'.

c. Discuss whether chief executives would be less effective at their jobs if they were paid half as much as at present?

Case study 2: Football

Until the 1960s there was a maximum wage imposed for footballers in the UK.

In 2012 a petition was raised for Parliament to consider reintroducing a maximum wage in football.

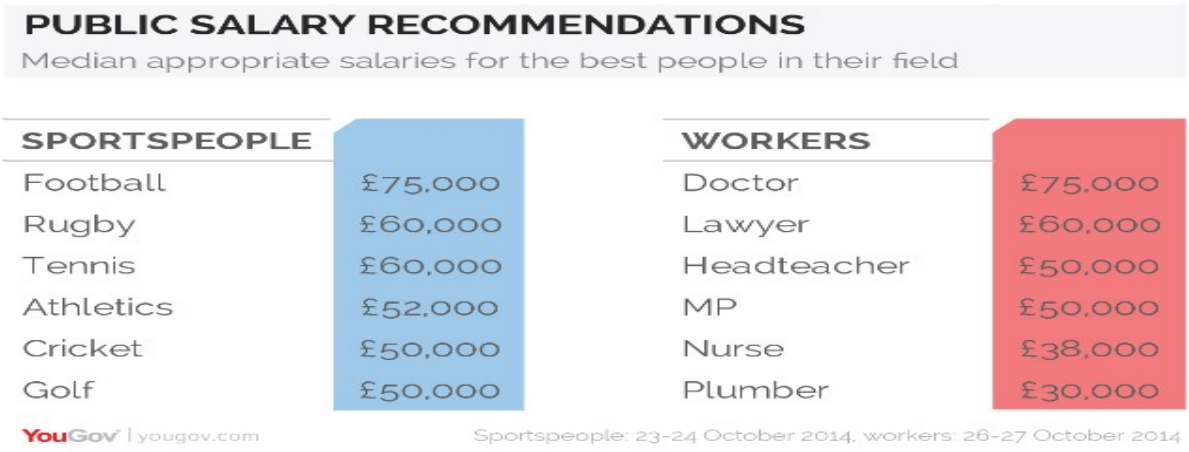
"Money is ruining football, why should players like Sergio Aguero and Wayne Rooney earn £200,000 a week for just kicking a ball around? LIMIT HOW MUCH FOOTBALLERS EARN. STOP MONEY KILLING THE BEAUTIFUL GAME."

However, the petition was rejected by the government who commented that: *The Government is, however, monitoring the situation and is in contact with the FA about a number of issues including this one.*

YouGovUK (2014) Top footballers should earn £75,000 – the same as doctors

According to the public, an appropriate salary for a top footballer would be £75,000 – the same as for a top doctor.

Since 1961, the salary of a miner has increased by 6,037%, while that of a top footballer has increased by 1,439,900%. Christiano Ronaldo, last year's highest earner in football, received a £15 million salary, or £288,000 a week even after tax and not including sponsorships. The wages are remarkable, and they keep getting bigger: this year, Wayne Rooney will earn £1,785 every hour. That's more than what the average ritish earner makes in a month. New YouGov research consults public opinion on what the very best sportspeople in their field *should* be earning, comparing this to responses on appropriate annual salaries for workers, and when it comes to football the British public think wages should be taken back to roughly 1960s levels.



Task: Summarise the arguments for and against a maximum wage for footballers

(c)(i) MINIMUM wages

A statutory minimum wage is the legal minimum rate per hour which employers must pay their workers

In many countries governments intervene to set a statutory minimum wage to protect the low paid.
The NMW was introduced in the UK for the first time in 1999 at £3.60 an hour. Before that some industries had minimum wages but there had been no national policy. Employers have to pay the minimum wage or face legal and financial penalties.

Show the effect of a minimum wage in a labour market where the minimum is above the equilibrium wage rate.
Summarise the effects:

A minimum wage might be imposed to tackle market failure. *What is the nature of such market failure?*

Low pay is *more* likely for:

- Temporary workers rather permanent workers
- Private sector rather than public sector workers
- Workers employed by small firms rather than large firms
- Newly employed workers
- Those working in occupations with low average earnings

- Those working in industries with low average earnings

Minimum wages and unemployment

If the minimum wage is set above the equilibrium wage rate it will cause an excess supply of labour and therefore create unemployment.

Explain how this will depend on:

1. How much the minimum wage exceeds the equilibrium wage rate

2. Elasticities of demand and supply for labour

3. The industry in question

Question

Extract A

Professor Sir George Bain, founding chair of the Low Pay Commission, which recommends the amount that should be paid as the minimum wage, said that it had been successful, but had 'pretty much run its course'. When it was first introduced in 1999, predictions of heavy job losses were not borne out by what actually happened. However, today, although there are only just over a million workers on the minimum wage, many more workers earn just above the minimum wage. In some sectors, such as parts of the retail industry, the minimum wage had become the going rate. Around 5 million workers are low paid today, defining low paid as earning two-thirds of the typical hourly wage. He said that the first objective of government should be to get people into jobs. The second was to ensure that those jobs paid workers sufficiently so workers can maintain a decent standard of living. One way of raising the minimum wage without causing unemployment would be to raise it at a higher rate than economic growth in average earnings at a time of sustained economic expansion or when unemployment was low of falling. *FT 21.2.14*

Extract B

More than 90 employers who have failed to pay their workers the National Minimum Wage have been named and shamed, Business Minister Nick Boles announced today (5 February 2016).
Between them, the 92 companies named owed £1,873,712 in arrears, and cover sectors including hairdressing, social care, hospitality and security services. *GOV.UK press release*

Extract C

Mike Ashley has admitted that Sports Direct effectively paid staff less than the national minimum wage and is in talks about compensating warehouse employees after a Guardian investigation last year that revealed the company was paying less than the legal minimum. Ashley admitted that at a "specific time" Sports Direct effectively paid workers less than the minimum wage because they were held back at the end of their shift and searched by security before leaving the company's warehouse. He said that HMRC were investigating the company and it was in talks about a deal to offer back pay to staff. *Guardian 7.6.16*

a. Using a diagram, explain why the introduction of a minimum wage might have caused 'heavy job losses (Extract A)

b. Using another diagram, explain why the introduction of the minimum wage in the UK in 1999 did not cause significant job losses.

c. Why would raising the minimum wage at a time of sustained economic growth be less likely to lead to unemployment?

d. Why are firms in sectors such as social care, catering, retail and hairdressing more likely to pay below the minimum wage?

The living wage

The concept of a 'living wage' (LW) is one which would provide a reasonable standard of living and enable a person to live debt-free. It is calculated in the UK by Loughborough University Centre for Research in Social Policy and until 2016 was something firms could voluntarily adhere to in the pay policy.

In the 2016 Budget, George Osborne announced that the 'national living wage' (NLW) would replace the national minimum wage for those over the age of 25 but critics claim it is only a living wage in *name* and not in *substance*.

Extract A

The "National Living Wage" – its scale and timeline (Resolution Foundation.org 2015)
The National Living Wage (NLW) announced in the Summer Budget represents a radical shift in the UK's approach to low pay. The NLW was introduced on 1st April 2016, with a starting rate of £7.20. This will be the new legal wage floor for all workers aged 25 and over with the current NMW becoming in effect the 21-24 year old rate. The rise from £6.70 to the NLW of £7.20 is a 7.5 per cent nominal increase, the largest since 2004. If we look at the year-on-year change, i.e. comparing the minimum legal rate applying in April 2015 to that in April 2016, it equates to a 10.8 per cent increase. This equals the highest ever rise which occurred in 2001.
It is worth noting, however, that the large increases in the NMW in the early 2000s were applied to a much lower base, with the NMW then equal to just 45 per cent of the typical (median) hourly wage.
This ratio between the minimum wage and that at the median, known as the 'bite', is higher today standing at 54 per cent. As such, the NLW will have a large impact, with an estimated 2.7 million people expected to directly gain as a result. More than 3 million others further up the earnings ladder will also potentially benefit from a 'spillover' effect, if firms choose to retain some pay differentials between employees.
This is a major and very welcome gain for millions of the lowest-paid workers in the UK. Today, one in five employees fall below the low pay threshold, equivalent to two-thirds of the hourly median wage across all workers, many of whom will benefit greatly as a result (not taking account of other tax credit and benefit changes). In terms of future policy on low pay, there are, however, a number of important implications and outstanding questions.

Extract B

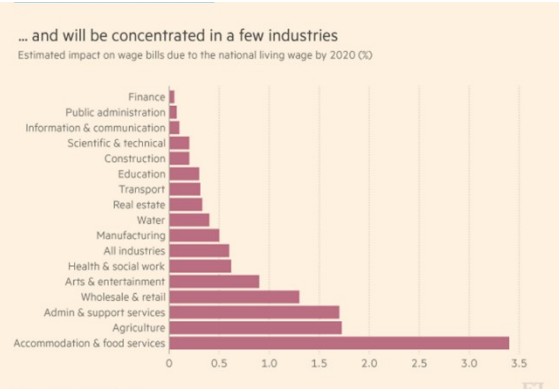
Boosting productivity *FT.com*

The government believes the living wage will prompt employers to invest more in training and technology to make their workers more productive, breaking the UK out of its "low-pay, low-productivity" trap.

Some employers do seem to be heading in this direction. Premier Inn, the hotel chain, has started to introduce self-service "speedy check-in" kiosks in some of its hotels, for example. Still, Rob Payne, Best Western's chief executive, warns this path might not be possible — or desirable — for small, labour-intensive businesses that rely on the human touch. The worst-case scenario, economists say, is that unemployment rises because employers, instead of training the lowest-skilled, simply do without them.

Keith Walford, who runs the Linton Lodge Hotel in Oxford, says he used to replace staff when they left but has started to think twice. He could ask the housemaids to clean 11 rooms instead of 10, which would technically increase productivity, but he frets about the effect on his staff and customers. “Customer service will suffer and workloads will increase as well.”

Extract C *FT.com*



The steep rise in the minimum wage could widen the disparity between the fortunes of London and the rest of the country because the higher rate is less likely to cause any job losses in the capital, a think-tank said on Wednesday.

A report from the Centre for London found the rise in the minimum wage to £7.20 for the over-25s — dubbed the “national living wage” — would cause “negligible” job losses in the capital. The figure would have to reach £8 an hour before employment was affected.

Extract D Living wage will lead to sharp job losses in North East *Telegraph 18.9.15*

The North East will suffer more job losses than in any other parts of the country as a result of Government plans to introduce a national living wage. The new minimum wage was introduced by Chancellor George Osborne in July's summer Budget and will come into force from April next year. It will start at £7.20 and will rise to £9 an hour by 2020, replacing the £6.50 minimum wage currently in place. It will only apply to people over the age of 25.

But the impact “does not look to set to be evenly spread”, with areas such as the North East, where unemployment rates are already far higher than in other regions, “set to be hit especially hard”, according to a new report from Capital Economics. As a result, the North East is likely to suffer “sharper falls” in employment. Firms could also be forced to raise their prices more swiftly than in other parts of Britain to offset the higher salary costs - making their businesses less competitive.

And while the Office for Budget Responsibility (OBR) estimated that just 60,000 jobs will be lost as a result of the measure, Capital Economics’ analysis suggested that some sectors will come under far more strain than the rest. Those seeking work in retail, hotels, restaurants and the social care sector will be most vulnerable.

Watch the video clip at:
http://www.bbc.co.uk/news/business-36161581
‘We are losing out’

In the table below summarise the advantages and disadvantages of the introduction of the National Living Wage in the UK for those over 25 (include both micro and macro factors)

Advantages	**Disadvantages**

Evaluation:

3.5.3(c)(ii) Public sector wage setting

The government is a significant employer in the UK, although the numbers have declined since 2010.

Total UK public sector employment March 2016 (ONS)

Figure 1: Total UK public sector employment, March 1999 to March 2016, seasonally adjusted

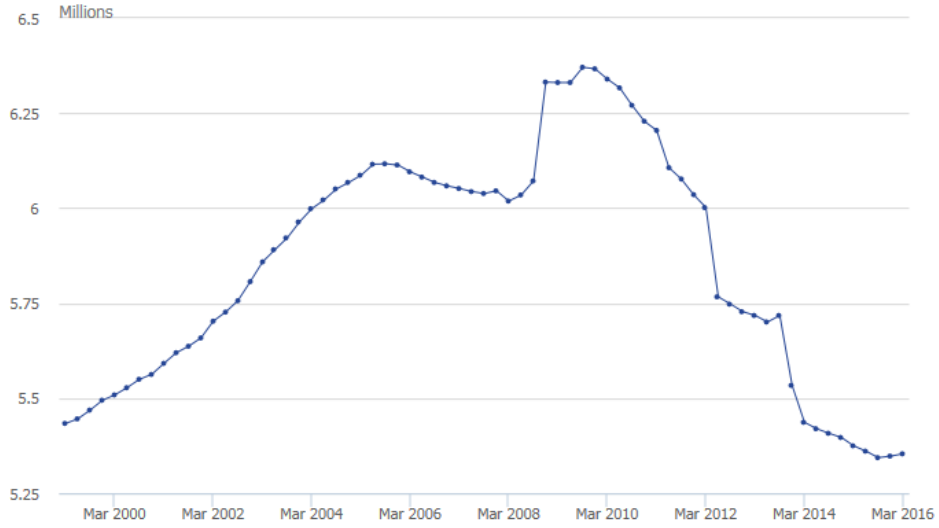
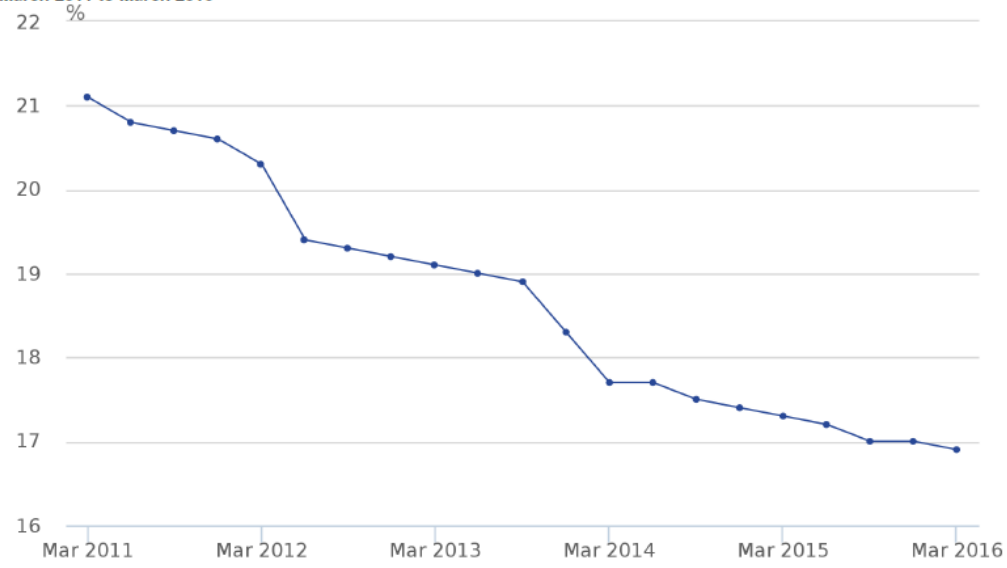


Figure 5. UK public sector employment as a percentage of total UK employment, seasonally adjusted

March 2011 to March 2016



Source: Quarterly Public Sector Employment Survey: Office for National Statistics

Task: Comment on the trends in public sector employment in the UK

- The government has significant influence over wages for public sector workers and for many employees acts as a monopsony employer (teachers, nurses)
- Where trade unions represent public sector workers there will be a process of collective bargaining, with resulting pay depending on the relative strength of the trade unions and the monosony power of the government.
- Where trade unions are weak wages will be lower.
- From 2010 to 2015 there was a public sector pay freeze in the UK.
- In some countries public sector unions are stronger and command higher wages e.g. France
- In the UK there is little difference between private and public sector pay when all factors are taken into account such as levels of skill
- In some developing countries public sector jobs are highly prized and wages higher than in the private sector

Lower wage rises in the public sector may cause:

Public sector pay restraint

Extract A

Public sector pay rises frozen at 1% for next four years (Public Sector Executive 8.7.15)

The chancellor has announced that the government will only fund public sector workforces for a pay award of 1% for four years from 2016-17 onwards. He said that this will save approximately £5bn and that the government expects pay awards to be applied in a "targeted manner" within workforces to support the delivery of public services.

During George Osborne's Budget Speech, he said: "To ensure we have public services we can afford, and protect more jobs, we will continue recent public sector pay awards with a rise of 1% per year for the next four years. "Public spending should reflect public priorities – and we have to make choices."

Osborne added that, overall, levels of pay in the public sector are now, on average, comparable to those in the private sector. However, public sector workers continue to benefit from a significant premium once employer pension contributions are taken into account.

Extract B

UNISON (10.7.2014) Ending public sector pay cap would raise millions and create jobs

Calling time on the Government's devastating public sector pay cap would create thousands of jobs and pump millions of pounds into the UK economy, according to a landmark report by former IFS senior economist Howard Reed.

The research coincides with a strike by hundreds of thousands of UNISON local government and school support workers in England, Wales and Northern Ireland, who are set to walk out today (10 July) in an increasingly bitter dispute over pay. This year's pay offer from the Local Government Employers would represent a derisory 1% pay increase for 90% of the workforce, on the back of three years of pay freezes and a below-inflation 1% rise last year.

The latest research, uses figures from the International Monetary Fund to show that every 1% increase in public sector pay would generate between £710 million and £820 million for the Government in increased income tax, National Insurance contributions and expenditure tax receipts, and reduced benefit and tax credit expenditure. It would also inject between £470 and £880 million of extra value into the economy.

The report also reveals that a public sector pay increase could create up to 18,000 full-time jobs.

Task: Using the information from the extracts and your own knowledge outline the arguments FOR and AGAINST public sector pay limits

3.5.3(c)(iii)Policies to tackle labour market immobility

See Theme 2 notes on occupational and geographical immobility of labour.

Policies might include:

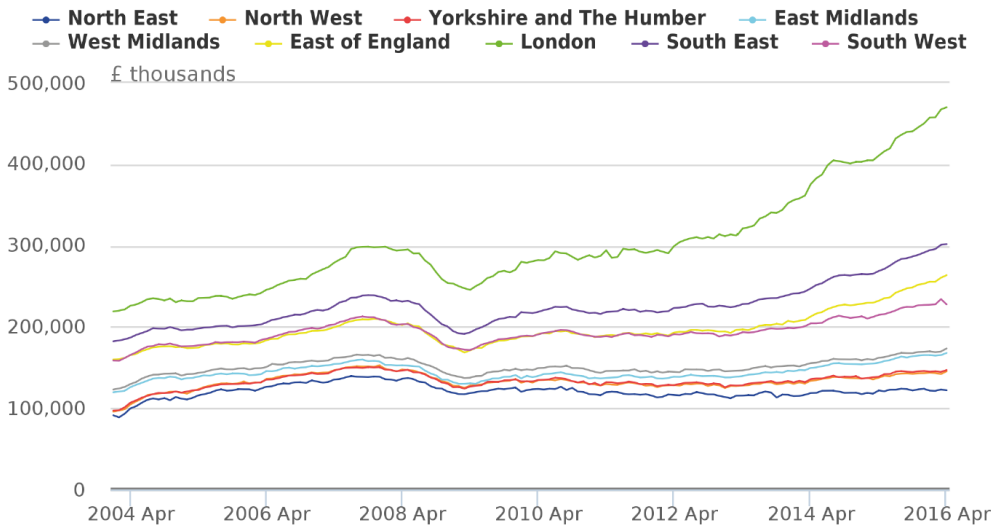
1. Improving education and training to incorporate more transferable skills
2. Improving information about job vacancies
3. Better transport infrastructure
4. Relocation subsidies
5. Provision of low cost housing
6. Reducing discrimination in the labour market
7. Subsidising firms to locate in areas of high unemployment
8. Reducing barriers to entering occupations

Which of the above would be appropriate to reduce **occupational** mobility and which to reduce **geographical** mobility?

What would be the macroeconomic benefits of a more mobile labour force?

To what extent might regional house prices differences contribute to labour immobility in the UK?

Figure 4: Average house price, by English region, January 2004 to April 2016



Extension Appendix A

Deriving the demand curve for labour: Marginal Revenue Productivity (MRP) theory

We assume firms aim to maximise profits
In a goods market this means producing up to the point where **MC = MR**
In the labour market the firm will maximise profits where the **marginal cost of employing one more worker** is equal to the **marginal revenue from the output of the last worker**.

If an additional worker added **more** to revenue than the cost of employing the worker, profit would rise.

If an additional worker added **less** to revenue than the cost of employing the worker, profit would fall.

Marginal revenue product
The marginal revenue product is the addition to total revenue from the last worker employed.

- As more workers are employed and added to fixed factors in the short, their productivity will fall due to diminishing returns- each worker will add less than the previous one and therefore earn less revenue for the firm.
- Eventually the revenue added from one more worker will be the same as the wage rate, the cost of employing the worker. At that point no more workers will be employed.

Assumptions of MRP theory:

- Workers are homogeneous
- Firms have no buying power when demanding labour i.e. must pay going market wage
- There are no trade unions (who might influence wages)
- The productivity of each worker can be easily measured
- The supply of labour is perfectly elastic
- The product is sold in a perfectly competitive market

Exercise:

1. Calculate MPP and MRP
2. How many workers will be employed at a wage rate of £70, assuming a profit-maximising firm?

MRP = MPP x price of product

1	2	3	4	5	6
No. workers	**Total output (units)**	**Marginal physical product (units)**	**Price of product £**	**Marginal revenue product (3x4) £**	**Wage per worker £**
1	8	8	10		70
2	17		10		70
3	25		10		70
4	32		10		70
5	38		10		70
6	43		10		70

The firm will continue to employ workers as long as the worker adds more to revenue (MRP) than cost (wage).

How many workers will this firm employ?

If the wage rate were to fall to £50, how many workers will the firm employ?

The MRP curve shows the number of workers the firm will employ at any given wage rate and therefore it is the demand curve for labour. It is downward sloping as the MRP falls as output increases (caused by diminishing productivity of labour).

The firm's demand curve for labour – derived from MRP:

At a lower wage rate more labour will be demanded and at a higher wage rate less labour will be demanded.

Evaluation of MRP theory

- In many cases it is hard to measure labour productivity – if there is no physical output
- In many cases wages are set with no consideration of demand for labour e.g. in the public sector
- It is useful as a model of the demand for labour in many cases, but to analyse wage differentials, supply side information is needed too.

That concludes the MICRO content of Edexcel A level Economics (A)

GOOD LUCK…

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