

Obesity and the
economic need for
government
intervention
economics essay



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Obesity has been rising rapidly throughout the world over the past twenty to thirty years. In recent years, increased media and political scrutiny has been placed on the issue and we are all well aware of the effects, yet obesity shows no signs of slowing. But obesity is not just a health problem, it is an economic phenomenon. Most people understand the risks of obesity but still choose to consume more than they require and it is unclear whether this is due to a lack of information, or down to consumers simply maximising their utility. This increase in obesity is beginning to place a strain on health care services within the UK. Costs on the NHS are estimated to be upwards of £1 billion a year, whilst the effects on the economy as a whole in 2004 were “conservatively” estimated by the House of Commons Health Select Committee (HSC) (2004) at £4 billion a year increasing to £7 billion when the cost of overweight people are included. This study will explore the economic reasons behind this recent increase in obesity, the economic consequences from obesity and to discuss if there is a need for government intervention.

The World Health Organization (2000) defines obesity as “a condition of abnormal or excessive fat accumulation ... to the extent that health may be impaired”. Put more simply, obesity is the condition where weight is gained by people consuming more calories than they need, leading to possible health problems such as heart disease, hypertension and an increased risk of strokes. Obesity is most commonly measured by using the Body Mass Index (BMI) which assesses a person’s weight in kilograms against their height in metres squared. For adults, a person is classified obese if their BMI is greater than 30.

The costs to the economy and society from obesity are huge. The National Audit Office (2001) estimated the direct costs of treating obesity and its consequences at £480 million in 1998, with indirect costs through loss of earnings, productivity and premature mortality at £2. 1 billion. This has been revised upwards to give the total estimated costs of obesity to the entire economy at nearly £4 billion rising to £7 billion when the costs of the overweight are also included (House of Commons Health Select Committee (HSC), 2004).

Obesity has been on the rise in the past 30 years and has reached epidemic proportions. The prevalence of obesity in just the UK has more than quadrupled from around 6% in the early 1980's to 25% in 2005 (Foresight Commission, 2007). The WHO (2003) now estimates that more than 1 billion adults in the world are overweight of which at least 300 million of them are clinically obese. This upward trend has largely been followed throughout the world with few exceptions, yet there are massive variations in the levels of obesity across countries (Figure 1). The highest rate of obesity in the world is in Samoa at 75% yet the lowest in the world is Japan, which only has a rate of 5%. Both of these rates are likely to be due to social and environmental aspects rather than economic. It is also worth noting that obesity in England, according to the NHS Information Centre (2008), is the second highest in Europe, just behind Malta (Table 1).

Figure 1: Trends in Adult Prevalence of Obesity

Source: Reproduced from Foresight (2007)

Although obesity has been increasing for both men and women, recent data (NHS Information Centre, 2009) has shown that the prevalence is different not only across countries but also within them across different income groups, regions, ages and ethnic groups.

Source: Statistics on Obesity, Physical Activity and Diet January 2008, NHS Information Centre (2008)

The high costs of obesity, both private and social, give the government huge incentives to reduce obesity by intervening but this may not be warranted on economic grounds. It needs to be assessed as to whether the Government should intervene and for what reasons. Before this rise the majority of the population were a healthy weight. This begs the question; was there an economic cause around 1980 that caused this rise? Has increases in technology, along with longer working hours and imperfect information caused this rise or are has previous intervention by the government caused distortions in other markets with policies such as the Common Agricultural Policy? Or is it purely consumers maximising their utility? There is one important message to take from this - obesity is rising and will have massive effects on the economy.

Chapter 2: The Economic Costs of Obesity

The exact costs of obesity are open to great debate as they not only include the direct costs of health care but also indirect costs such as lost productivity through sick days or the opportunity cost associated with premature death and costs to individuals of domestic care or slimming products. These are ultimately the main issues that will be assessed by the Government in

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making a decision in whether to intervene or not. There are very few studies that have tried to calculate the costs of obesity, although HSC (2004) and Foresight (2007) were commissioned by the Government to look at the costs now and into the future although some of the data is very limited and has had an impact on the costs being reported.

The Direct Costs

When we look at direct costs we are looking at the costs of the NHS in response to obesity and the problems caused by obesity itself. The direct costs are dependent on how we define obesity. As we have already stated the definition that we are using is when a person's BMI is greater than 30. If the costs associated with overweight and obese people the figures are considerably higher. The House of Commons Health Select Committee (HSC) in 2004 conservatively estimated that the cost of treating obesity was £45.8-£49.0 million whilst the costs of treating the consequences of obesity at £945-£1,075 million where 50% of the costs come from the prescriptions for drugs. Combined this equated to 2.5% of NHS expenditure in 2001-02. Foresight (2007) used these figures and revised them upwards where they state that the cost to the NHS attributable to obesity is £2.3 billion where if the costs of the overweight are also included it could reach costs of £49.9 billion in 2050.

The Indirect Costs

The indirect costs are considerably larger. The two main indirect costs are that there is a loss of productivity through sick days and also a premature loss of life accounting for lost years of working. The more openly available and recent figures come from the HSC (2004). The only way that we can <https://assignbuster.com/obesity-and-the-economic-need-for-government-intervention-economics-essay/>

estimate productivity losses is by estimating the lost earnings from sick days or money given to people claiming incapacity benefits who are obese. This isn't necessarily the case as a person can be highly productive but not paid much and vice versa but it is the best proxy that we have available. This was valued at £1300 - £1450 million to account for the 16 million lost working days in 2002. In 2008 there were 509, 090 deaths registered in England and Wales (ONS 2008) - around 35500 of which are attributable to obesity. This equates to over 45000 years of working life lost, or £1, 170 million in lost earnings using today's average salary. The most recent work (McCormick, 2007) has suggested that the impacts of obesity on employment are considerably higher than the likes of the HSC thought, in the region of £10 billion a year.

Effects on obesity on wages - cawley shows a 11. 2% lower wages for obese white females

Remarks

From this we can draw some quick conclusions. Firstly that the costs of obesity from different studies vary considerably depending on what definition of obesity is used and how good the data sources are. Even using some of the highest estimates obesity is costing the economy upwards of £10billion a year. This only accounts for 0. 49% of the UK's GDP a year.

Chapter 3: A Model of Obesity

As has already been asked, is obesity just a case of consumers maximising their utility? To an individual being either underweight or overweight could in fact be their optimum weight given their constraints - providing of course

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that they are rational and taking all costs into consideration. Here I will provide a basic model to show that consumers will maximise their utility given a budget constraint. The idea from this comes from Philipson & Posner (1999).

We need some simply assumptions. Firstly, that all consumers want to maximise their lifetime utility regardless of any other goals. Secondly, that all consumers are completely rational and finally, that all consumers have complete information. To formulate the utility function we need to work out what to include. Suppose the consumer gains utility from many different things - eating (E), drinking (D), consumption of goods (C), leisure activities (L) and health (H). These can be put in a general equation to show how a consumer gains utility:

$$U = u(E, D, C, L, H)$$

Now the health function (H) is itself made up of several different factors. These include weight (W), exercise (X), diet (T), medical treatment (M), education (B), smoking (S), alcohol consumption (A), amongst others (O) such as access to clean water and sanitary conditions which are usually out of the control of the consumer.

$$H = h(W, X, T, M, B, S, AO)$$

Again inside this function we have weight. Weight is again a function of other variables. Weight is gained by over consuming calories and not expending enough calories. Consumption of calories is given by (I) whilst expending calories is done through exercise, (E).

$$W = w(I, E)$$

As with every maximisation problem we must have a budget constraint. I will also include time constraints in this. Income is equal to the wage rate (WR) times by the total hours worked (H). Total hours worked is calculated by total time (T) less leisure time (LT) less time spent in the house (HH).

$$Y = WR(T - LT - HH)$$

To maximise utility the consumer must set the utility that they gain, with health and weight included equal to that of the budget constraint.

$$WR(T - LT - HH) = p_{EE} + p_{DD} + p_{CC} + p_{LL} + p_{HH}$$

Consumers will choose levels of calorie consumption, drinking, consumption of goods, leisure activities, health (which includes weight) to maximise their utility given the budget constraint depending on the prices that all of these goods have. This allows us to predict the way that consumers will behave if factors that they cannot control change such as the prices of foods and exercise. It needs to be stated that this is far from being the most complete model ever. We could continually expand this to get ever more variables to explore. One important point that we can draw from this is that as consumers will maximise their utility, the weight that they choose may not be the most ideal weight or even healthy but is the optimum weight to maximise their lifetime utility. As such it may make complete economic sense, providing that this consumer is rational and has complete information, to be obese.

Chapter 4: Plausible Economic Causes of the Obesity Epidemic

It is undisputable as to what causes obesity; it is the long term effects of consuming more calories than are expended. This imbalance can result from either consuming too many calories or from not doing enough energy to expend the calories. The rise in obesity can be explained by an imbalance of just 100 calories a day - this equates to eating an apple more than needed a day (Hill et al 2003). Therefore we need to find the economic reasons for why either calorie consumption has increased or calorie expenditure has decreased. In the past few decades there have been remarkable changes in the way we live. For the most part it is the increases in technology across all parts of life that have been responsible for both increased consumption and decreased expenditure of calories as it has lowered the price of food whilst increasing the cost of exercising. Technology will play an important role in the coming years helping to combat obesity. Through technological improvements we will be able to better understand obesity, its causes, control it and hopefully find a way to curb the upwards trend. The issue we face is asserted by Prentice, " We have never seen anything like this, where we have the coming together of the technological, electronic, television revolution and the highly available, high energy-dense and very cheap foods" (HSC, 2004).

Using the model that we formulated in the last chapter we can explore the effect that technology has had and what it means for the maximisation of lifetime utility for consumers. We can again assume for now that consumers' are both rational and completely informed.

Food Prices and the Common Agricultural Policy

Over the past 30 years there was a steady decline in the price of food. This was broken in the late 2000's, with a global food shortage pushing many prices higher than ever seen before. Taken as an overall group, food is generally considered a normal good. There will of course be inferior goods within the market but there will be greater demand for the higher quality brands and foods such as Ben and Jerry's over a supermarket own brand ice cream. It is a basic fact of economics that as prices fall demand for the good will rise and as such with food this is no different.

Technology has allowed agricultural producers to become more productive. As they have become more productive yields have increased and costs have fallen allowing consumers to purchase food goods at lower and lower prices. In real terms foods are now considerably lower than what they were in the 1960's and 1970's as shown on Figure 3. This would seem to match up with the timings of the start of the obesity epidemic. But we also need to look at the prices of individual foods to see if they all decreased at the same rate or if there are any discrepancies.

But is there another reason for these prices to have behaved that way that they have. Food programs, such as the Common Agricultural Policy (CAP), have played a large role in the production of food in the developed world since WWII and have also had substantial external effects on developing nations. The general idea was to provide farmers with a fair price for their goods whilst ensuring that the food shortages that occurred during this time period wouldn't happen again. Until recently the CAP essentially paid farmers to produce massive surpluses of food and would guarantee them a "fair" <https://assignbuster.com/obesity-and-the-economic-need-for-government-intervention-economics-essay/>

price, but providing artificially high prices has distorted the free market allowing farmers to produce 3800 calories per European per day (Neroth, 2004). This led to considerable overproduction, especially of high fat and high calorie goods such as butter. This resulted in two differing effects on the developed and developing world. In the developed world this excess supply has led to lower prices which in turn have contributed to the obesity epidemic. But in the developing world these low prices of food goods have lowered the growth of the agricultural sector, which unfortunately has hindered the reduction of poverty and hunger (Elinder, 2005). It is however very difficult to find any research that has a definitive answer on this and would be very difficult to prove that they were the sole cause of the epidemic.

Figure 3: Extended Annual FAO Food Price Index (1998-2000= 100) sad. jpg

Source: Reproduced from FAO (2008)

Changes in the Economic Environment

The economic environment within developed countries has changed radically over the past 30 years as production has shifted out of the agricultural and manufacturing sectors into the service and research and development sectors leading to a remarkable increase in sedentary lifestyles. It is generally accepted that this has led to a reduction in energy expenditure as there are less manual jobs, increased time saving devices within the household (which we will discuss shortly) and increased personal transport usage.

Even as late as the 1970's a large percentage of the labour force were involved in jobs outside of the service sector. This generation needed high calorie diet to sustain them through the manual labour jobs they were performing such as farming and mining. This has been declining over the past 40 years, where the service sector now accounts for around 85% of the labour force in so called blue collar jobs. Today there are considerably more people sitting at desks in the " 9 to 5" lifestyle than ever before and the average working week in the UK is 41. 4 hours a week (European Industrial Relations Observatory 2007). Although this has remained relatively constant over the past 15 years it is restricting the opportunities to expend energy after the working day. Along with these effects, over the past 40 years the percentage of the workforce commuting long distances to work has increased significantly. With increases in technology this has become a considerably more viable option. Regardless of if this through additional time in the car or on public transport we as a nation are spending, on average, 4. 5 hours travelling to and from work a week (TUC, 2008) There is an obvious opportunity cost between time spent at work and being able to exercise; the longer we work and take travelling to and from work, the greater the time constraints and the less time we have to gain the required amount of exercise to expend the calories that we are consuming. This is especially true for poorer families where some people need to hold down two or more jobs in order to support their families. This said people would not behave in this manner if they were going to damage the amount of utility and welfare that they were going to achieve. Some people may well find it prudent to work in a high paid, blue collar job and not exercise so much as a means to maximise their welfare.

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A very big change in the economic environment is the involvement of women in the labour force, especially mothers. Whilst the amount of men participating in the labour force has decreased from 95% in 1971 to 84% in 2007, the amount of women participating has increased from 59% to 74% in the same time period (Wahba, 2009). The major impact of this has fallen on to children but also spouses. Children are especially vulnerable with regards to obesity as they often do not have the capability to make an informed choice. Within most families the mother stays at home whilst the father is the main breadwinner but as more mothers enter the labour force there is no one to prevent the children from snacking at home. There is also the effect of time constraints already discussed leading to these families becoming more reliant on ready-made meals to save time. This may not necessarily be directly attributable to obesity rising but it is taken that these meals tend not to be as healthy as a home prepared meal.

The Effect of the Increase in Technology on Food Production

It is widely accepted that technological growth is a key driver of economic growth. Without technological change, economic growth would all but stop. There has been much advancement in technology in the past few decades that has helped us to save time but has also lowered energy expenditure.

As a society we are obsessed with getting everything done quickly in order to maximise our utility. This has resulted in numerous inventions which we now take for granted that save us time, but also energy around the home and also in the work place. Just a few examples include vacuum machines, washing machines and dishwashers. The ONS (2005) revealed that the <https://assignbuster.com/obesity-and-the-economic-need-for-government-intervention-economics-essay/>

average time spent doing housework in the UK had decreased by 30 minutes in 2000. This is a significant time difference and suggests the amount of time that was spent doing housework 30 years ago was considerable.

Even as recently as the late 1960's the main way to produce food was done by families getting the raw ingredients and transforming them into meals.

This took a great deal of time and effort. In the past 30 years, the time to prepare food has fallen by almost half (Cutler et al, 2003) as there has been a significant shift towards mass production and utilising economies of scale.

These factories can now also produce ready-made meals, which can be brought for a fraction of the cost that the raw ingredients would cost.

Advancements have also been made in the way that we preserve food. With the likes of vacuum packing food, along with more efficient fridges and freezers, the standard shelf life of food has increased. This has decreased the amount of times that people need to shop a week and reduced the amount of spoiled food being thrown away. Lastly there have also been large advancements in the way that we prepare food at home. Inventions such as the microwave oven and blenders have significantly reduced the amount of time that is required to get food from the fridge to plate. With increases in technology it is now possible for factories to produce considerably more food, in less time than what a cook can at home allowing more time for people to spend working or on other leisure activities as well as, usually preserving food for longer reducing the amount needed to be spent on food.

The Social Effects of Increases in Technology

Children born in the 1970's and today are growing up in vastly different

environments. Today we have access to hundreds of television channels,
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along with high end gaming consoles and the internet which have caused significant changes in the way that we spend our time and socialise.

Source: ONS (2005)

We now spend over 50% of our leisure time watching TV or engaging in sedentarily activities with only a small amount spent on exercising - 7 and 13 minutes respectively for women and men - far short of the governments advisory targets (ONS, 2005). With advancements in digital recorders like Sky+ and online services such as the BBC's iPlayer service providing on demand programmes, only more time will be spent in front of the TV in coming years. The internet has also revolutionised how we shop and socialise. It is now possible to order pretty much anything online, including food, without having to move from the sofa. It is hard to make well informed decisions about what food to buy as often information on calories and healthier options are scarce on supermarkets websites. Instead of having to go out to socialise we can now do this from our computers via services such as MSN, Facebook and the likes of Xbox Live. These services allow for people to talk and play games together without having to expend much energy.

From these short examples we can see how the increases in technology has led to a more sedentary lifestyle where we are consuming more and expending less energy, although it has enabled agents to increase the constraints that face them and have allowed for a much higher utility to be achieved, especially with regards to time constraints.

The NHS

The NHS seems like an unlikely culprit to be involved with the rise of obesity but let us take a deeper look in the reasoning behind this. The force at work here is one of moral hazard. Moral hazard occurs when someone acts differently when they do not have to pay for the full cost of their actions to if they had to. In the UK, the NHS provides free health care at the point of use. In addition, technology has progressed in this time to be able to treat a lot more conditions attributed to the side effects of obesity than ever before making obesity “healthier” than previously. Because of this people know regardless of what they do the NHS will be there to sort them out, at no cost to themselves. This although, makes perfect economic sense – people are maximising their utility. If they knew that they were going to have to pay for the operations, medicine or other treatments later in life they may not live their lives in the way they do currently.

Chapter 4: Is There a Case for Government Intervention?

There are a few select justifications that allow for government intervention, where most economists would agree that this should be restricted to private markets that fail to allocate resources appropriately, also known as market failure thus high costs do not necessarily warrant the intervention by government from an economic perspective, yet intervention could still be justified on equity grounds. The idea of having a government intervening follows the idea that without some kind of regulation a completely free market cannot operate efficiently as it fails to define property rights appropriately and as such the market fails to optimise the total surplus. Accordingly, as Pareto improvements and providing that the government has

proved it can obtain a better allocation than the free market alone, there is a compelling case for government intervention. If the government intervenes without good economic reasoning it can end up leading to distorting other markets, causing what is known as government failure.

There are five main reasons why the government might intervene on market failure grounds to correct for the problems caused by obesity. These are: externalities, public goods and imperfect information, lack of rationality, market power and labour market discrimination. Equity issues are more centred on the idea that with these improvements, they should be distributed fairly amongst the population and not just too a few individuals. There is a significant trade off between efficiency and equity when the government is making policies and is often why intervention by the state often slips into government failure. This is because the optimal Pareto efficient allocation where we have obtained the best allocations possible for the resources available may not be the fairest in terms of equity. We will consider all of this in turn.

Reasons:

Externalities - Actions of one agent which affects a third party.

Public Goods & Imperfect Information - PG are often under provided - information on good diet, not enough government funded gyms/swimming pools - It leads to consumers making decisions that do not maximise their welfare. 1) Individuals not being able to understand the risks and consequences of their diet and being obese 2) not enough information on what makes a good diet 3) individuals unaware that they are obese
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Lack of Rationality - Time inconsistent preferences ie consumers prefer consumption today instead of tomorrow - value the short term gains over the long term costs.

Market Power - When there are only one or two firms controlling the market - causes prices to rise. This is not the case here as prices have been falling, Maybe a bit of market power and rising prices is what is required

Labour Market Discrimination - perceived difference in productivity between healthy weight and obese and the effect that it has on earnings.

Externalities

An externality is a spill over effect that affects a third party that is not involved in the original transaction where the net effect can either be a positive or negative. In the case of obesity an individual may well rationally decide to consume too many calories and expend too few, which may be utility maximising for them but if they do not pass any of the costs on for their actions to society, then there is no externality (McCormick et al, 2007). But if the external cost does exist, then in a competitive market we would be over-consuming the goods as the individual does not take into account the cost of this externality on society.

The main externalities of obesity are borne on the NHS. This is due to the moral hazard argument already put forward. As people know that they will be looked after without having to pay the full costs then they will behave differently that if they had to. Also, because of obesity hospitals are equipping their wards with bigger beds and other specialist equipment such as lifting arms to get obese patients into bed. This, although can be argued is <https://assignbuster.com/obesity-and-the-economic-need-for-government-intervention-economics-essay/>

the idea behind the NHS – to provide free health care at the point of need, regardless of why it is needed.

Positive externalities??

Also include another externality. – such as someone taking up too much space on public transport – should they have to pay the price for two tickets so as not to disadvantage the other customers.

Money required to “fix” these externalities – is it really worth it?

Public Goods and Imperfect (Asymmetric) Information

The nature of a public good is that they are non-excludable; once a good is supplied no one can be excluded to use it, and non-rival; use by one person doesn't stop others from benefiting from it. Because it is difficult to charge to use a public good the Government often has to intervene to provide it such as street lights, as they would often be underprovided by the private sector.

When we look at obesity we can consider that information on a good diet and for example government funded gyms or swimming pools are a public good.

The case of imperfect or asymmetric information arises when one side has more information than the other and can often stop consumers from maximising their welfare. There are several different ways in how this can happen. Firstly, it could be the case that there is not enough information provided to consumers to understand the true costs and consequences of their diet. As already expressed this could be the fault of the NHS within the UK as people do not have to pay the full costs of their medical care. There is also the case that there is not enough information on what creates a good

diet. For example, within the UK it is still not a legal requirement to include <https://assignbuster.com/obesity-and-the-economic-need-for-government-intervention-economics-essay/>

the nutritional information for foods. This leads to a situation where the manufacturers can take advantage of the consumer by not informing them for if the customer knew how many calories were in the particular good would they consumer it or not. Consumers have become more aware of this in previous years and are investigating this more than ever. Because of this the Food Standards Agency - a Government Agency - introduced a traffic light rating system. Although this is only voluntarily at the moment it can still be abused as the information is giving on a per serving calculation. This can again be misleading for the consumers as they may not see this or may choose that this portion size is too low. Finally there is also the case that obesity has now become the norm and as a result, people do not believe that they are obese. A recent study by YouGov & Slimming World (2009) found that three quarters of obese people in the UK do not believe that they are. There seems to be a need for re-education, especially within this area.

Is there a case when we look at public goods and imperfect information; well the government is already providing many of these things. It is providing information on how to live a healthy life style, how to eat healthily and is publicising these intensively through campaigns such as Change4Life which is currently sponsoring the Simpsons. It would be a very tough call to say that the government was not providing enough public goods for people to make an informed choice but perhaps they should be providing more again boiling down to if it is worth the cost.