

Implications of Irrational Action in Health and Education

Third Prize – 1st Year Undergraduate Category

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“If people want to be fat, smell like ashtrays and die early, let them.”¹This statement from *The Economist* argues that there is no place for government intervention in the health of its citizens. This viewpoint has been echoed by many individuals who fear paternalistic behaviour such as legislation that dictates the behaviour of consumers. The traditional economic view of consumers as rational agents seems to support the argument against government regulation of consumption behaviour. However, compelling evidence exists that these individuals do not behave in a wholly rational manner and their actions lead to negative consequences for themselves and society. Without some sort of intervention on the part of government and other organizations there would be vast implications for the economy and societal welfare. These irrational actions and the consequences thereof are most easily understood and observed through evidence from the areas of public health and education.

In part due to the National Health Service (NHS) in the United Kingdom the physical health of an individual has monetarily observable effects on society. People who make unhealthy decisions incur a greater cost on the system than those individuals who maintain a healthy lifestyle. In the western world as a whole obesity is becoming an epidemic. While the quote at the beginning of the article suggests that overweight individuals are making a rational choice about their health in the pursuit of maximizing their personal utility one can argue that not only is this not the case, but the costs of these behaviours are so great that intervention is required.

One report on obesity from the UK Department of Health suggests that there are four rationales for why government intervention might be justified. These rationales are given as externalities, imperfect information, vulnerable individuals/demerit goods, and time inconsistent

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¹ "Bans: No Smoking, Foxhunting, Sugar, Salt, Fat... What the government should and shouldn't do to make people live better lives." *Economist*. 18 NOV 2004: n. page. Print.

preferences.² If consumers have imperfect information or time inconsistent preferences then these consumers are unlikely to be serving their best interests effectively and are therefore not behaving in a fully rational manner. In the case of obesity imperfect information is pretty straightforward. Imperfect information may include a lack of knowledge about the health risks associated with obesity, the components of proper nutrition, and the foods that will lead to that proper nutrition. Time inconsistent preferences may also exist for obese individuals. This occurs because they have short term preferences for unhealthy food which they enjoy and gain utility from when they consume, but they later regret the decision to eat these foods or regret the pattern of instant gratification consumption that they followed which led to them having weight or health problems. There is also evidence that an unhealthy diet can be addictive. One study in which rats were fed high fat and high calorie diets found that their brains were affected by the diet much in the same way that the brain is affected by using addictive drugs such as heroin.³ The presence of addiction would certainly be evidence of irrational behaviour. The consumer being unable to fully control their actions leads them to not maximize their utility regardless of whether or not their preferences favour short term rewards or long term health.

The economic implications for assuming obese individuals are acting exclusively as rational agents are enormous. The most obvious burden that obesity puts on the economy is through the direct costs to the NHS incurred by the increased healthcare needs due to obesity. The National Audit Office (NAO) gathered data on the direct costs of treating obesity and they found that in 1998 alone the costs amounted to 480 million pounds which was equivalent to 1.5% of the total expenditure of the NHS.⁴ However these direct costs only begin to describe the true economic implications of obesity. There are other costs to society that must be considered due to obesity. These costs include lower worker productivity and health complications which lead to more days off due to illness or medical treatment. There are also major losses in productivity due to obese members of the workforce dying before the age of retirement. The NAO's figure which accounted for all of these costs in 1998 was given as 2.58 billion pounds.⁵ These numbers have come under some scrutiny however. The criticisms have been that the figures the NAO gave were actually too conservative and that the total costs to society were, according to the House of Commons Clerk's Office Department Scrutiny Unit, 3.3-3.7 billion pounds.⁶ This enormous economic impact shows the scope of the obesity problem. It also demonstrates the incredible savings that can be made by

² McCormick, B., and I. Stone. United Kingdom. Department of Health. *Economic Costs of Obesity and the Case for Government Intervention*. London: , 2006. Print.

³ Johnson, Paul, and Paul Kenny. "Dopamine D-2 receptors in addiction-like reward dysfunction and compulsive eating in obese rats." *Nature Neuroscience*. (2010): 634-641. Web. 23 Feb. 2013

⁴ United Kingdom. National Audit Office. *Tackling Obesity in England*. London: , 2001. Print.

⁵ UK., Audit Office. *Tackling Obesity*.

⁶ United Kingdom. House of Commons Health Committee. *Obesity*. London: , 2004. Print.

tackling the problem. By over-assuming rational behaviour by obese individuals, some of which may be suffering addiction-like effects or have issues of incomplete information or time inconsistent preferences, society is forced to bear a burden that is not only tremendous but also, in large part, avoidable. The first step to diminishing these costs is to realize that one cannot assume totally rational consumption behaviour in a society with an obesity problem like ours.

Further evidence of irrational consumption in the field of public health can be found through the issue of smoking in the UK. A typical economic approach would assume that individuals that smoke are also rational agents. The utility that they gain from smoking must outweigh the health complications that arise because of the behaviour. If the benefits did not outweigh the risks then people would just quit smoking. This argument breaks down very quickly because it assumes completely rational behaviour when dealing with an extremely addictive substance. The entire point of addiction is that the preferences of the individual, particularly in the long term, are being over-ruled by the chemical or physical addiction that they face. One study, published in the journal *BMC Public Health* lends credibility to the argument that smokers are not behaving in a rational manner. Their study found that in the UK over 80 percent of smokers had a desire to quit.⁷ This means that one could argue most smokers can not be assumed to be rational agents.

Similar to the case of obesity the societal costs of smoking have been studied and found to contain much more than the costs to the NHS. The British think tank Policy Exchange looked at the costs of smoking in British Society. They found that the costs to society from smoking tobacco are 13.74 billion pounds. The largest component of this cost was the loss in output from the early deaths of smokers. This cost was followed by the loss in productivity from smoke breaks and the cost to the NHS for treating smokers. The true cost is not actually 13.74 billion however. The report also cites the approximate 10 billion pounds in revenue from taxation of smoking as a benefit. Even subtracting the tax revenue the costs are over 3 and a half billion pounds for a behaviour in which 80% of individuals are participating unwillingly. The UK government has already intervened to reduce smoking with regulations of what must be displayed on packs of cigarettes as well as taxes which should encourage fewer individuals to smoke or to reduce the consumption of those individuals. If the UK were to assume complete rationality on the part of smokers they would reduce these taxes and remove the regulations about cigarette packaging. This would certainly lead to higher costs to UK society from smoking. Even if the removal of taxation on cigarettes had no effect on consumption, which basic supply and demand tells us is not the case, then the costs to the UK would still be higher because none of the 10 billion pounds in revenue would be

⁷ Thyrian, Jochen, et al. "The relationship between smokers' motivation to quit and intensity of tobacco control at the population level: a comparison of five European countries." *BMC Public Health*. 8.2 (2008): n. page. Print.

available to redress the harm done to society by smoking. In short, assuming total rationality of smokers in the UK would be disastrous for society in terms of public health, as well as the government revenue available to compensate for the harm smoking does to society.

Education is a quite unique area in which treating potentially irrational individuals, also known as students, as rational agents can be particularly harmful especially when considering the economic prospects for the country. Part of why education makes for such an interesting situation is because of the age of students. Children are not the backbone of the economy in terms of their expenditure. They have little disposable income and most of their choices are made for them by their parents. The reason for this is, in large part, because they are not viewed as being capable of making rational and informed choices about their lives. This is reasonable to assume as well because the brain in a teenager does not have a fully connected frontal lobe which means they tend to be more selfish and make more short-sighted decisions.⁸ Because young people are notoriously short-sighted they require government intervention just to get them through the door of a school. This is seen as acceptable because of the time inconsistent preferences for education exhibited by children and young adults.

It is very well established that high educational attainment is hugely beneficial for society. One study that looked at all of Europe concluded that for the United Kingdom specifically the benefits of having educational achievement levels as high as Finland's (the highest in Europe) would have a future increase in GDP of over 10 billion euro.⁹ This clearly shows there is a lot at stake in education. If one were to over-assume rational behaviour on the part of students then the negative effects would be just as pronounced as the positive effects from better attainment. The reason for this is that student's attitudes towards education demonstrate that they are not necessarily happy about being in school. In a report analysing the reasons for differences in educational attainment across different socio-economic backgrounds one of the statistics they reported was the percentage of students from the study that wanted to stay in full time education when they were sixteen years old. The results showed that particularly among teenagers from poorer families the attitudes towards staying in school were less positive. Only 79% of respondents from the poorest bracket wanted to continue pursuing their education.¹⁰ The current assumption is that these students are rational and able to decide for themselves at sixteen years old whether or

⁸ Knox, Richard. "The Teen Brain: It's Just Not Grown Up Yet." *Natioal Public Radio Articles*. 01 MAR 2010: n. page. Web. 23 Feb. 2013. <<http://www.npr.org/templates/story/story.php?storyId=124119468>>.

⁹ Hanushek, Eric, and Ludger Woessmann. European Union. European Expert Network on Economics of Education. *Cost of Low Educational Achievement in the European Union*. 2011. Print.

¹⁰ Goodman, Alissa, and Paul Gregg. "Pooer Children's Educational Attainment: how important are attitudes and behaviour?." *Joseph Rowntree Foundation*. (2010): n. page. Print.

not being in school is the best choice for them. However, starting in 2015 compulsory schooling is going to extend until the age of 18. This indicates that policy-makers believe that the current law overstates the rationality of these teens.

The implications for over-assuming that students are rational are massive. The education level of the workforce is paramount in determining productivity as well as what sorts of jobs and industries will be available for the workforce. Companies are going to move where they can find the workers with the right skills. If students were left in complete control of when they were allowed to quit school then there would be a slip in the average education and training level of young workers. Over time this would lead to lower per worker productivity, as well as trend towards lower skill jobs and industries in the UK which would pay correspondingly lower wages. In turn this would lead to an overall decline in the wealth of the nation due to the diminished supply of high quality human capital. At a macro-economic level this would affect the poor disproportionately as wealthier families would be more likely to induce their children to remain in school, and cause a further widening in the gap between the poorest citizens and the richest. Social programs would be further stressed as well. More individuals would need to go on benefits due to the low wages they are making. This burden on the government would also have implications for the debt of the United Kingdom and may well lead to very difficult budget decisions as to which programs can or cannot be funded. This rather gloomy scenario shows the avalanche of problems that could be created by assuming that a teenager knows best when he or she should terminate his or her education. Though the decision is their own, the impact of that decision is shared by everyone and therefore the decision is being guided through the legislation of individuals representing the majority view of society.

Revisiting the quotation from *The Economist* that suggests that the government should let people smoke and eat unhealthy and die an early death it is worth noting that it begins by saying "if people want to". In terms of obesity and smoking, two of the biggest liabilities to public health, what people want is not necessarily the important determinant of their actions. There is compelling evidence that in both cases the individual is not acting rationally, in part, due to an inability to completely control their behaviour due to addiction. Additionally it can be argued that imperfect information and time inconsistent preferences play a role in their irrationality, particularly in the case of obesity. Both obesity and smoking currently have massive impacts on society due mainly to healthcare costs and loss in productivity. Assuming that obese individuals and smokers are acting in a manner that perfectly reflects their true preferences is not supported by the evidence at hand and has dangerous implications for society from a financial and health perspective. Education also grants insight into how over assuming rational agents can lead to a

myriad of issues. If teenage students were granted a fuller degree of control on their educational futures from a younger age than they are currently it is likely, based on attitudes towards education particularly among poorer demographics, that there would be an overall decrease in the average quality of human capital available to drive the economy forward. This in turn would be disastrous for the finances of the government, the job market, and the overall wealth of the UK. These examples of the costs created by assuming rational action when it is not wholly present suggest that perhaps we should not let our fellow citizens be fat, smell like ashtrays and die early, if for no other reason than our own rational self interest.

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