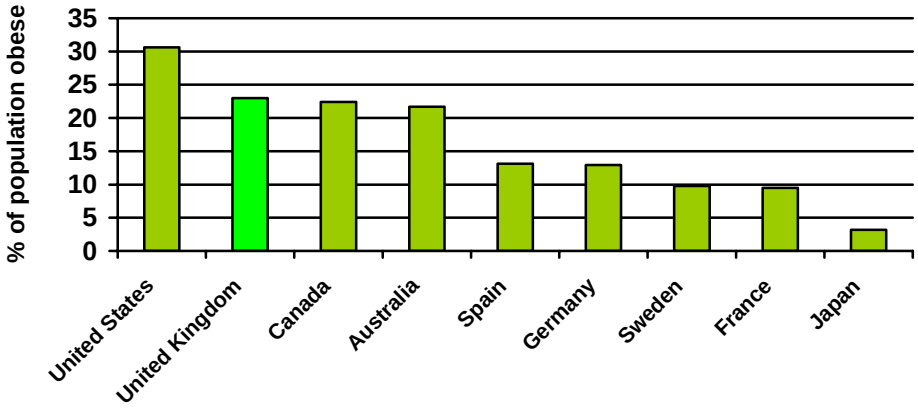
TAX THE FAT?

A rough guide to the economics of obesity, by Ali Muriel

It seems the British people just can't stop piling on the pounds. You've seen the newspaper headlines: "Britain's Obesity Timebomb", "Half of Britons Obese by 2050", etc., etc. The United States may be "the fat man of the world", but the UK is definitely a podgy cousin, with around one person in four classified as medically obese (see Fig. 1, below). Across the Channel in svelte France, by contrast, less than one person in ten is obese, while in Japan it's less than one in twenty.

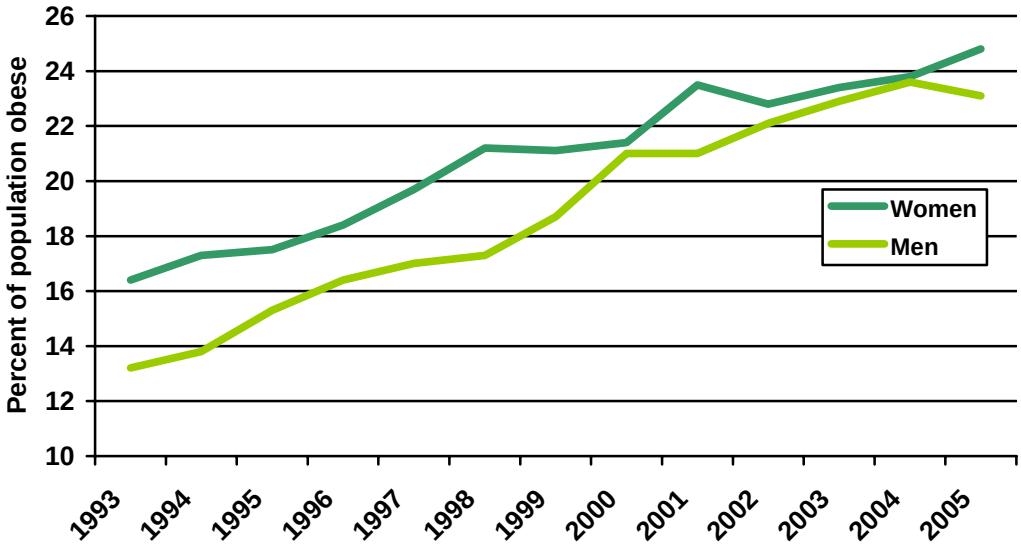
Figure 1 ***America leading, UK close behind*** **- Obesity rates in selected OECD countries**



Source: OECD Health Data 2006. Latest available data used for each country (2000 or after)

And British waistlines keep getting wider. Obesity rates for both men and women have surged in recent years, as Figure 2 starkly illustrates for England.

Figure 2 ***Piling on the Pounds*** **- Obesity rates in England, 1993-2005**



Source: Health Survey for England

Searching for the cause

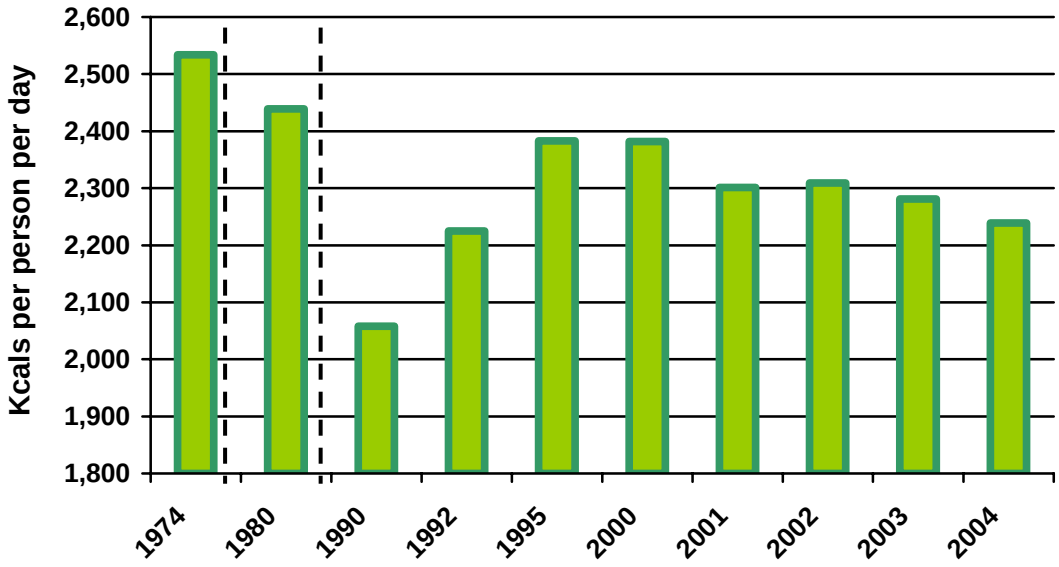
So why are British bodies swelling at such an alarming rate? Press and politicians have blamed a whole host of factors, from fast food outlets, TVs and lack of exercise to school dinners, king size snacks and Playstations. The implication seems to be that either people are getting greedier, or they're getting lazier – and that Britons and Americans must be the greediest and laziest of all.

It's certainly true that if you eat more calories than you use up, you put on weight. Since more people are getting obese, they must be eating more calories, or expending fewer calories – or both. But, being good economists, we don't want to rely on simplistic stories about greed or laziness – we want to look at some data.

Doing so reveals a strange (and not widely publicised) fact: Britons seem to be eating *less* than they used to. Figure 3, below, shows estimated daily energy intake in the United Kingdom in selected years. You can see clearly that in 1974 the UK consumed on average over 2,500 calories per person per day. By 2004 this had fallen by 10%, to just 2,250 calories. Perhaps McDonalds and Mars bars aren't to blame after all?

However, it's also worth noting that calories consumed in the UK *have* risen since 1990 – they had fallen as low as 2,050 calories per person per day, but we've seen a 'bounce' since 1990.

Figure 3 – *Eating Less Than In The Seventies* – Estimates of Energy Intake in the UK, 1974 to 2004



Source: Family Food 2004-5, Department for Environment, Food and Rural Affairs

So how do we explain this puzzle – a rise in obesity without a substantial rise in calorie consumption? This is where an economic approach can prove useful – in particular, a focus on the basic economic concepts of costs and benefits.

Consuming calories has clear costs and benefits. The cost is both the money you spend on the food (financial cost) and the time you spend preparing it (time cost). The benefits are also fairly obvious: food is tasty, and you don't starve to death.

Expending calories also has costs and benefits, but these vary hugely according to the sort of work you do. Coal miners and farm labourers, for example, are paid to do physical work – in a sense they are 'paid to exercise'. Lawyers and economists, by contrast, are mostly paid to sit behind desks – for them, expending calories may mean forking out money for gym membership, as well as spending time away from their well-paid job (which means a higher 'opportunity cost').

So how have these costs and benefits changed over the past century? Tomas Philipson and Richard Posner, two researchers at the University of Chicago, have pointed out that the cost of *expending* calories has risen enormously over the course of the 20th Century. This is because the proportion of people employed in highly active jobs (like mining and farming) has fallen substantially. Thus, for most people, the cost of expending calories has risen – they have to pay to exercise, instead of being paid. So Britain in 1974 managed to combine more calories with less obesity at least partly because far more people were employed in physically demanding jobs.

But we're not quite finished yet. While changes in work patterns may explain the rise in obesity through the 1980's, they can hardly account for the continuing rise since the 1990's. The structure of our economy hasn't changed *so* much since 1990, after all. This is where a focus on the costs of *consuming* calories is helpful.

In a paper with the admirably direct title 'Why Have Americans Become More Obese?', economists David Cutler, Edward Glaeser and Jesse Shapiro suggest an alternative explanation for the continued swelling of waistlines: the incredible changes in the technology of food preparation. Back in the 1960's, they point out, most families cooked their own food and ate it at home – peeling potatoes, making sauces, washing vegetables, etc., and all this preparation took a lot of time (the 'time cost' of consuming calories was high).

Today, a huge amount of food preparation is done for us. Our salads come pre-washed, pre-sliced and vacuum packed. New preservatives and microwave ovens mean you can make Chicken Chow Mein in five minutes, instead of forty-five. Deep freezers and pre-sliced oven chips mean you don't need to spend an hour peeling and chopping potatoes if you fancy some French fries. Division of labour making goods cheaper – an idea as old as economics itself.

This revolution in food preparation means that we can consume both greater quantities and a greater variety of food than ever before. In particular, Cutler et al. show that people aren't having bigger dinners (larger portions are not to blame), instead they're eating more often – the number of calories people get from snacks has doubled since the 1970's.

What's more, it's the countries which most rapidly embraced these technological changes (America and Britain in particular) which have seen the fastest rise in obesity, while countries with more heavily regulated food sectors (such as France) have been less affected.

In summary, then – technology is fattening. Changes in the technology of work (the rise of the computer-based office job) and the technology of food preparation (microwave ready meals) have reduced the cost of consuming calories, while raising the cost of expending them. Our bodies, which evolved to deal with the scarcity and physical exertion of the African savannah, simply aren't well adapted to the modern

age of sedentary jobs and plentiful calories. Taste buds and stomachs are much the same today as they were 200 years ago – but the world around us has changed dramatically. Does that mean we're simply doomed to ever higher levels of obesity?

What can be done?

Obesity has costs not just for the individual (increased risk of diabetes, heart disease, etc.) but also for society – the cost to the NHS of treating obesity-related health conditions could rise as high as £45 billion by 2050, according to the government's recent 'Foresight Report on Obesity'. Halting the rise in obesity has become a key government concern.

But it isn't proving easy – public information campaigns, imploring people to eat healthily and take exercise, haven't turned the tide. What other levers has the government got at its disposal? Economists Andrew Leicester and Frank Windmeijer, of the Institute for Fiscal Studies, have explored one other possible means of changing people's behaviour: a 'fat tax'.

The government already uses tax to influence behaviour, after all – with high taxes on cigarettes, alcohol and petrol, for example. So why should fattening food be treated differently? Couldn't we just tax foods according to the percentage of fat they contain?

Leicester and Windmeijer point out some clear difficulties with this approach: some fat is important to the human diet, so really we'd like to tax *overconsumption* of fat, not fat itself. What's more, fatty foods are consumed by rich and poor alike, which means that a fat tax would probably be regressive – hitting the poor particularly hard, because a greater fraction of their income is spent on food. Leicester and Windmeijer simulate one particular fat tax, and find that the poorest 2% of people would lose about 0.7% of their income in fat taxes, while the very richest would pay less than 0.1% of their income. This is a considerable political hurdle to the introduction of fat taxes.

Even if such a tax were introduced, no-one is certain how high it would have to be set to be effective. After considering such taxes back in 2004, the government got cold feet and the idea was quietly dropped.

So if taxes won't save us from our appetites, what will? The food industry (keen to avoid regulation and taxation) is pinning its hopes on a rather surprising saviour: technology. Their laboratories are cooking up 'reformulated' foods with surprising properties – foods which take longer to digest, for example, keeping you feeling fuller for longer; or using zero-calorie mushroom extracts in their recipes, instead of traditional fats, making tasty foods with dramatically lower calories.

Economic research suggests that technology caused the obesity 'crisis', after all. Is it too much to hope that technology might also provide some solutions?