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Expanding Waistlines

Americans are putting on the pounds. In the 1960s the average American male weighed 168 pounds; today he tips the scales at about 180. Over the same span, the average American woman put on ten pounds, rising to 152 pounds from her previous 142 pounds. More significantly, these weight gains have been larger among people who were heavier to begin with. As a result, obesity in America has more than doubled over this period: Over 30 percent of Americans now have a body mass index (BMI, a measure of weight relative to height) in excess of 30, the level at which doctors say a person passes from overweight to obese.[1] What explains these developments? Not surprisingly, economics has a lot to say on this question; in fact, some fairly simple changes in demand and supply explain why waistlines in America and elsewhere in the world have been expanding so quickly.

Actually, Americans put weight on throughout all of the twentieth century, largely as a result of two key factors. First, wages in sedentary occupations (those relying on brains rather than brawn) rose relative to those in active occupations. People responded by leaving jobs in manufacturing and agriculture and starting work in service and management jobs. This occupational switch reduced their calorie expenditures on the job and helped push up average

[1] In terms of the metric system, BMI = K/M^2, where K is weight in kilograms, and M is height in meters. Using the English measurement system, BMI = $(704.5)(W/H^2)$, where W is weight in pounds, and H is height in inches. BMIs in the range of 20–25 are considered healthy. Below 20 is thin, 25–30 is overweight, and 30 and above is obese—the range in which significant adverse health effects (ranging from diabetes to heart disease) begin to show up.

weights. The second force at work was the decline in the relative price of food during the twentieth century; as predicted by the **law of demand,** this price decline induced people to eat more, pushing up their caloric intake and their body weights. Between about 1900 and 1960, the weight of the average male rose 16 pounds, with similar but slightly smaller gains for the average female.

As it turns out, these weight gains during the first part of the twentieth century were probably a good thing from a health standpoint: many Americans at the beginning of the century were actually malnourished, and the added poundage led to better health outcomes for them. The excess weight we added during the last 35 years or so is an entirely different matter, however. By the 1960s, average BMI in the United States was already at the high end of the healthy range of 20–25, so those extra pounds since then have pushed us further into the unhealthy categories of overweight and even obese.

How can we explain this recent surge in poundage? There are three key components. First, levels of physical activity have declined, although not nearly as much as many popular commentators would have us believe. The big move from active to sedentary employments took place before 1970, so it cannot explain the last 30 years of weight gains. Still, caloric energy expenditures by both men and women in the United States have been falling. Americans are spending less time at work and less time on household chores, and more time watching TV, looking at computer monitors, and talking on the phone. Overall, per capita caloric energy expenditures have dropped a bit more than 25 percent since the 1960s. This is only a small part of the story, however; indeed, it can explain only a couple of the pounds Americans have added over the last 30 years. The rest comes from higher caloric intake.

By far the most important reason for this higher caloric intake appears to be a change in the way food is prepared: Due to major changes in food processing technology, the "time cost" involved in preparing meals has fallen dramatically. Consequently, the **full cost** (money plus time cost) of food has dropped, leading to the consumption of significantly more calories. The result has been expanding waistlines.

In the 1960s, food was prepared in the home by family members and eaten there. Since then, there have been a series of

technological innovations in food processing:

- vacuum packing,
- flash freezing,
- improved preservatives and flavorings, and, of course,
- the microwave.

As a result, much food preparation now is done outside the home by manufacturers who specialize in that activity and then ship the packaged, prepared food to the consumer to be eaten at home. The result is that over the last 35 years, the amount of time spent on food preparation and cleanup in the home has fallen in half. In addition, outside the home convenient, tasty prepackaged foods are now merely a few steps away in a vending machine, rather than being 10 to 20 minutes away in the nearest store. On both counts, the full cost of consuming food has declined, and people are consuming more calories. Moreover, they are doing it not by eating more calories at each meal, but rather by eating more "meals" (actually snacks) during the day: caloric intake during the traditional meals of breakfast, lunch, and dinner has remained nearly constant at about 1800 per day for men and 1400 per day for women. But both sexes have nearly doubled their intake of calories from snacks. Overall, caloric intake has risen 15 percent for men and 10 percent for women.

A few questions remain. First, are the additional calories that Americans are consuming each day—the equivalent of a Coke or a few cookies—really enough to account for the poundage we have been accumulating? The answer is "yes." An extra 150 calories per day for men of average weight and activity levels will eventually lead to 11 pounds of excess waistline baggage. For women, the same 150 calories per day would eventually amount to an extra 13 pounds. (The weight gain from these extra calories eventually levels off, because as people get heavier they burn more calories just doing the things they usually do.)

The second question is, what started the revolution in food processing that made these extra calories cheaper? Although the answer to this is not completely settled, the most likely source may be found in the workforce decisions of women. Beginning about 35 years ago, women began entering the workforce in unprecedented numbers; indeed, the **labor force**

participation rate of women doubled over this period. Moreover, they have been moving into occupations and professions—such as medicine, law, and the upper ranks of business—in which annual earnings are much higher than in the traditional fields of female employment, such as teaching and nursing. On both counts, the **opportunity cost** of women's time has been rising, thus increasing the demand for laborsaving conveniences, such as prepared foods. The food industry has responded just as economics would predict.

A third question being asked by some people is this: Are Americans really better off due to the lower cost of food? Ordinarily, economists would argue that a technological improvement that lowers the costs of a good definitely will improve the lot of consumers. But in the present case, with more people becoming obese, the adverse health effects of the extra calories are becoming significant. The incidence of diabetes is rising, as is the number of people who are disabled due to obesity-related injuries or other health problems.

Indeed, some analysts have noted that people who were heavy to begin with are the ones most likely to have put on the most extra pounds. As the poundage has piled up across the country, so too have the sales of diet books, as well as the rates of expensive bariatric surgery (in which part of the stomach is stapled shut to reduce caloric intake and absorption). All in all, some analysts have suggested, maybe the lower cost of food has made people *worse* off, by inducing them to do something that they would rather not do—put on weight. This might be particularly the case for people who are said to have little self-control as to the amount they eat. While there may be something to this argument, we can consider a counter-argument expressed in the following analogy: People who live in cold-weather climates, such as Montana, the Dakotas, and Minnesota, routinely complain about the weather in the winter. People in such climes also spend far more than the average person on clothes to offset the adverse effects of the cold weather. Surely we would not want to argue that such people are worse off for having chosen to live where they do rather than in warmer locales. Similarly, in the case of people who are said to lack control over the amount they eat, just who is it that should decide—and enforce—their caloric intake?

There is one final point to our story, one that illustrates amply the fact that even the best of intentions sometimes result in unintended consequences. Over the same period that Americans have been packing on the pounds, the taxes on cigarettes have risen sharply, even while the number of places where it is lawful to smoke has shrunk significantly. On both counts, the full cost of smoking (price per pack, plus the hassle) has been rising, with the consequence that smoking has been on the decline in the United States. It is well known that people have a tendency to eat more when they stop smoking, and this very fact seems to be showing up in the national statistics on excess poundage. Where the full cost of smoking has risen the greatest, so too has the incidence of obesity. In effect, people are being induced to substitute eating for smoking. Despite the adverse health effects of the resulting weight gains, the *net* health trade-offs here are likely positive, given the highly lethal effects of smoking. Still, this development reminds us that although people's behavior can easily be understood by examining the incentives they face, some of those incentives are difficult to forecast in advance.

DISCUSSION QUESTIONS

1. The technological changes in food preparation seem to have had the greatest effect on the time costs of a "meal," rather than affecting the time cost of consuming extra calories during any given meal. What does economics predict about the number of meals consumed each day compared to the number of calories consumed per meal?
2. The change in food preparation technologies over the last 30–40 years caused the biggest reduction in time costs for married women. What does economics predict should have happened to the weight of married women relative to other people?
3. During the twentieth century the cost of the automobile fell drastically, leading to a dramatic rise in the number of miles driven. But all of this driving also led to more automobile accidents, which now kill more than 40,000 people each year and

maim hundreds of thousands more. Is it possible that the fall in the price of the automobile actually made Americans worse off? How much would your answer depend on whether those fatalities were among the people driving the cars as opposed to innocent bystanders, such as pedestrians and children? (Hint: Take a look at the chapters in Part Six, "Property Rights and the Environment.")