



Fast-food consumption and body weight. Evidence from the UK



L. Pieroni^{a,*}, L. Salmasi^b

^a Department of Political Science, University of Perugia, Via A. Pascoli 20, 06123 Perugia, Italy

^b Department of Medical and Surgery Specialities and Public Health, Division of Public Health, University of Perugia, Italy

ARTICLE INFO

Article history:

Received 16 January 2013

Received in revised form 12 February 2014

Accepted 17 February 2014

Keywords:

Body mass index
Overweight and obesity
Quantile regression
Fast-food
Take-away meals

ABSTRACT

This work examines the role of fast-food consumption on body weight in the United Kingdom, by means of two recent waves from the British Household Panel Survey. We use quantile regression to examine whether increases in consumption of this unhealthy food category affect differently individuals located at selected quantiles of the body mass index distribution. Our results support some findings in the literature, but also point to new conclusions. Quantile regression estimates suggest that fast-food consumption affects individuals with higher body mass index more heavily, especially women. Irrespective of gender, we also find a negative and significant correlation between the price of take-away meals and snacks and weight. Some policy implications are discussed on the basis of our main results.

© 2014 Elsevier Ltd. All rights reserved.

Introduction

Empirical studies of the causes and effects of overweight and obesity have proliferated in the last decade, because weight control has become an increasingly urgent public health priority for national governments and international organisations. These studies have used the body mass index (BMI), a widely available self-reporting measure of body weight, to estimate the importance of the socio-economic determinants of overweight, although the role of some variables (e.g., relative prices of food) remains debated (Rosin, 2008; Christian and Rashad, 2009).

This work examines the effects of fast-food consumption on body weight in the UK. We have chosen to analyse the UK because, among Western European countries, it records the highest levels of obesity and overweight and in the last few decades fast-food and take-away outlets have largely proliferated in this country, with likely negative consequences in terms of BMI and, in general, health status. The framework of our work is similar to that of Chou et al. (2004) and Rashad et al. (2006), who examined the consequences on overweight and obese people of changes in relative food prices and in the density of different types of restaurants. In this context, as shown by Proper (2005) and Mazzocchi et al. (2009), obesity is not largely influenced by information provided

about its negative consequences on health – through food product labelling or information campaigns – unless these measures are also associated with monetary incentives. For example, “fat-taxes” have proved to be effective in reducing unhealthy food consumption in the US. Chou et al. (2004) and Currie et al. (2010) showed that a greater availability of fast-food outlets in the region of residence increases the probability of being obese, by lowering the monetary and non-monetary costs of access to unhealthy food or by fostering addiction problems for individuals with lower self-control (Cawley et al., 2004). The problem is even more relevant if we consider that the price of unhealthy food is usually lower with respect to that of healthy products (Drewnowski et al., 2004; Drewnowski and Specter, 2004) and this mechanism may induce some population groups to substitute healthy foodstuffs with unhealthy ones (see Zheng and Zhen (2008) and Pieroni et al. (2013)).

Our research is also related to a number of empirical works testing weight gains as the result of several socio-economic determinants. We use these results to identify a large set of control variables that are usually associated with increased BMI. Specifically, we refer to the strand of the literature which assumes that labour market participation may partly explain the increase in weight. If people work longer hours, their leisure time drops, with a greater propensity to incur overweight (Philipson and Posner, 1999). Referring to the situation in the US, Lakdawalla and Philipson (2009) found a correlation between hours worked and body weight. The same result was also confirmed by Courtemanche (2009), who focused on the effects of female employment. Also other socio-economic determinants have been found to

* Corresponding author. Address: Department of Medical and Surgery Specialities and Public Health, Division of Public Health, University of Perugia, Via del Giochetto, 06123 Perugia, Italy.

E-mail addresses: lpieroni@unipg.it (L. Pieroni), luca.salmasi@progetti.unipg.it (L. Salmasi).

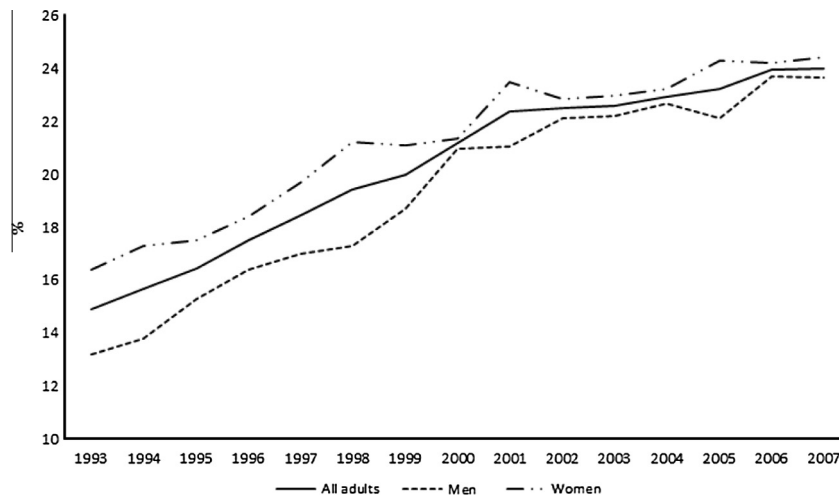


Fig. 1. Percentage of obesity in UK by gender, 1993–2007. Source: Health Survey for England 2007 – Latest trends. The NHS Information Centre, various years.

significantly affect body weight. For example, lack of physical activity, gender and education. Different roles played by men and women in the family and society may limit time for physical exercise with possibly different effects on body weight according to gender (Courtemanche, 2009). Recent studies have investigated the impact of education on adiposity and obesity and suggest evidence of a strong negative association between higher education and obesity (Propper, 2005; Sassi, 2010; Atella and Kopinska, forthcoming). In particular, Brunello et al. (2013) estimate that a reduction of about 3% is induced on women's BMI by variations in compulsory schooling.

Empirically, we follow the studies of Chou et al. (2004), Rashad et al. (2006) and Anderson and Matsa (2011), who examine whether a greater availability of fast-food restaurants affects body weight in the US.¹ Here, we merge information from the British Household Panel Survey (BHPS), the Office for National Statistics (ONS) and the Expenditure and Food Survey (EFS) to calculate two indicators of fast-food availability at regional level: the density of restaurants and fast-food outlets and the price of take-away meals and snacks; and estimate their effect on individual BMI, controlling for a large set of variables which the aforementioned literature suggested.

We contribute to this debate using quantile regression to examine whether increases in consumption of unhealthy food affect differently individuals located at selected quantiles of the body mass index distribution. From an econometric point of view, we keep our empirical work close in spirit to that of other papers in the literature on obesity, including works by Kan and Tsai (2004), García et al. (2009), Classen (2005), Atella et al. (2008), Auld and Powell (2009) and Garcia and Quintana-Domeque (2007).

Our results are in line with the findings in this literature, revealing sensitivity to BMI distribution. In some cases, quantile regression point estimates are larger than those obtained from ordinary least squares (OLS), suggesting that weight control policies, based on the “average” individual, should be re-examined in the future if the “distance” between overweight or obese and normal weight individuals increases further. Moreover, our findings are generally consistent with the differences in gender predicted by the literature.

The paper is structured as follows. Section 2 discusses the background of our analysis. Section 3 describes the data and methods used for empirical analysis. Section 4 specifies the empirical strategy applied to test whether restaurants and fast-food density and price of take-away meals and snacks significantly affect body

weight. Section 5 empirically justifies the use of quantile regression presenting non-parametric estimates of BMI conditional distributions and discusses OLS and quantile regression estimates. Section 6 concludes.

Basic facts

In the last few decades, obesity has become a substantial risk factor for a number of severe and chronic diseases, which constitute the main causes of death, including heart disease, strokes, and some types of cancer. It also contributes to other serious life-shortening conditions such as Type 2 diabetes. Data from the United States has shown that the prevalence of overweight and obesity began to increase around the mid-1980s and has continued to increase dramatically. A similar pattern is shown in Europe, and in particular in the UK, although it has reached a lower absolute level so far (Brunello et al., 2009). Fig. 1 indicates that in the UK obesity has constantly risen by 8–9% points over the last fifteen years, gender trends being similar.

The consequences of adult obesity in the UK were evaluated by the National Audit Office (NAO, 1998), which stressed that 6% of total deaths in the UK were associated with obesity and, according to a research conducted by a House of Commons Health Committee (2004), they increased to 6.8% in a few years. In addition, the number of Finished Consultant Episodes (FCEs), providing primary diagnoses of obesity, increased greatly from 1996 to 2006. Therefore, the burden on the National Health Service (NHS) associated with the excess of weight was estimated to have increased between 1998 and 2006 from 1.5% to 2.6% of total health expenditure. Estimates by the Department of Health (2006) forecast that the cost to the NHS, directly attributable to obesity, may rise to 5.3 billion sterling by 2025.

Fig. 2 shows the trend of food prices in the UK with respect to the aggregate price index: relative food prices have decreased constantly each year by 1%, making food (calorie) consumption potentially cheaper. This is in line with the results of Lakdawalla and Philipson (2009) and Costa and Steckel (1995), who, using historical data, showed a positive association between declines in unitary prices of calories and weight increases.

The consumption patterns of calorie intake in the UK has been quite stable in the last few years (Fig. 3).² These findings do not change when per-capita calories are considered separately for eating

¹ For a recent systematic review of the effect of fiscal policies on obesity, see Sassi (2010) and Thow et al. (2011).

² By using another source, Bleich et al. (2007) found equivalent results.

Download English Version:

<https://daneshyari.com/en/article/5070517>

Download Persian Version:

<https://daneshyari.com/article/5070517>

[Daneshyari.com](https://daneshyari.com)