



Economic crisis and the unemployment effect on household food expenditure: The case of Spain



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ABSTRACT

This paper examines the unemployment effect on food expenditure (UEFE) for Spanish households and quantifies its magnitude in boom and crisis periods. The results show that the UEFE was negative in both contexts but was reinforced during the economic crisis. Applying propensity score matching and difference-in-differences techniques to a sample of Spanish households for 2006 and 2013 (representative of a boom period and a crisis period, respectively), we found that the UEFE amounted to 2.9% in the boom period and to 4.5% in the crisis period. Quantile difference-in-differences estimates confirmed that the economic crisis enhanced the UEFE for Spanish households, with this effect decreasing continuously up to quantile 0.9. The UEFE was exacerbated mainly in those economically disadvantaged households.

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1. Introduction

Unemployment is a key macroeconomic variable that has decisive implications for the economic, social and health status of households and individuals, in particular during economic downturns when the unemployment rate increases drastically. The negative impact of unemployment on household resources may, in fact, undermine consumption of goods and services (Aguiar and Hurst, 2005; Griffith et al., 2013) and may also affect investment and savings decisions (Arent, 2012). Food consumption in particular is a key driver for health, social insertion, productivity growth and family and social stability (Ásgeirsdóttir et al., 2014). Thus, the impact of unemployment status on household food consumption—hereinafter, the unemployment effect on food expenditure (UEFE)—may have ramifications for public policies and healthcare expenditure, among other issues. An assessment of the UEFE in both non-crisis and crisis periods is therefore necessary in order to rigorously evaluate the repercussions of an economic crisis beyond its more immediate impact on main indicators such as gross domestic product (GDP), unemployment, public debt, income

distribution and deflation. In addition, such an assessment may help clarify whether an economic crisis undermines the right to food security, recognized by the International Covenant on Economic, Social and Cultural Rights of the United Nations.¹

Our research was aimed at examining the UEFE in Spain, particularly in relation to two main questions. First, what is the magnitude of the UEFE in Spanish households? Second, how does the UEFE differ in downturns with respect to boom periods? Both these questions are undoubtedly relevant from both the individual and social perspectives of a country, like Spain, that was severely affected by the economic crisis that started in 2008. In fact, Spain has experienced in recent years a severe economic downturn, reflected in a drastic fall in GDP and increased public debt, not to mention the high unemployment rate, which more than tripled between the last quarter of 2006 and the first quarter of 2013. As for average expenditure per family, this fell by 3.7% overall in 2013 compared to 2012;² all spending categories except education experienced a drop, including food consumption.

Previous empirical research for other countries confirms a drop in food expenditure by unemployed households. For instance, Aguiar and Hurst (2005) found that food expenditure fell by about 9% in US households in which the breadwinner became

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¹ See <http://www.ohchr.org/Documents/ProfessionalInterest/cescr.pdf>.

² See <http://www.ine.es/prensa/np848.pdf>.

unemployed; Carroll et al. (2003) reported that food expenditure sensitivity to unemployment depended on the household's precautionary savings; and Stephens (2004) and Benito (2006), in examining how variations in subjective job-loss probabilities affected household consumption decisions, found that there was no impact on consumption by employed workers.

Another strand of the literature has examined how food expenditure distribution changes when people become unemployed. Browning and Crossley (2009) demonstrated that this distribution did, in fact, change and Griffith et al. (2013), moreover, confirmed this change for UK households during the recent economic recession; more specifically, households bought fewer and cheaper calories and thus reduced the nutritional quality of the foods they purchased. Other researchers have corroborated this finding of obesogenic and poorer quality diets in response to unemployment (Drewnowski, 2010; Monsivais et al., 2011, 2012; Liu et al., 2013). Analysing official reports and previous empirical studies, Antentas and Vivas (2014) found that the economic crisis in Spain has changed food consumption patterns, leading families to spend less money overall on food, most especially families that spend a high proportion of their income on food. Dharmasena et al. (2016) found high levels of unemployment and poverty to be direct causes of high levels of food insecurity and that low income caused high levels of food insecurity as a consequence of increased poverty. Finally, Huang et al. (2015) also reported that unemployment was positively linked to food insecurity during the 2007–2009 economic recession in the USA.

Finally, health researchers have also addressed the implications of unemployment for human health by assessing risk factors such as obesity (Darmon and Drewnowski, 2008), excessive alcohol consumption (Dee, 2001; Mossakowski, 2008), smoking habits (Fagan et al., 2007), medical care (World Bank, 2009), reduced physical activity in leisure time (Grayson, 1993) and mental health (Urbanos-Garrido and Lopez-Valcarcel, 2015). Contradictory studies have, however, reported improved health (reduced obesity, increased physical activity and improved diet) in times of higher unemployment (Ruhm, 2000) and negative effects on physical health in times of economic crisis (Gertham and Ruhm, 2006).

This paper adds to the literature by reporting new evidence for the UEFE in Spain, firstly, by examining at which extent the link between unemployment and household food expenditure is maintained or enhanced in crisis periods compared to boom periods, and secondly, by examining whether the magnitude of the UEFE varies by food expenditure distributions and across food categories. Spain represents an ideal research arena, given that the Spanish economic recession (confirmed by the Bank of Spain in January 2009) led to a dramatic rise in unemployment rates: 8.4% in early 2007, 22.6% in the last quarter of 2011 and a peak of 26.9% in the first quarter of 2013. Furthermore, the fact that job losses mostly hit low-skilled workers may have specific implications for the consumption of certain food categories, given the relatively low precautionary savings and educational levels of this group of workers. Finally, to the best of our knowledge, the literature regarding the UEFE in Spain is very scarce. Two exceptions are Campos and Reggio (2014), who found that the consumption of employed workers fell by around 0.7% for each percentage point rise in unemployment, and Luengo-Prado and Sevilla (2013), who showed that food expenditure in Spain fell on retirement, a stylized fact that can be explained by a rise in home cooking. Our paper is an attempt to fill this research gap.

For our research, we used microdata for household food expenditure available from the *Encuesta de Presupuestos Familiares* (National Household Budget Survey, NHBS), taking 2006 as a year representative of the boom period and 2013 as a year representative of the crisis period. The NHBS, which accounts for about 87% of Spanish aggregate consumption, provides detailed information on

food expenditure in different categories and on unemployment, socioeconomic and demographic characteristics at the household level. We restricted the analysis to households where the active breadwinner (employed or unemployed) was aged over 16 years.³ The size of the UEFE was empirically checked using matching methods, whereas the causal impact of the economic crisis on the magnitude of the UEFE was tested using a difference-in-differences (DiD) regression approach.

Our results suggest that the UEFE in Spain was negative in both crisis and boom periods. However, its magnitude was greater in the crisis period, especially for socioeconomically disadvantaged households where expenditure on food was lower. Before the outbreak of the economic crisis, food consumption in households whose main breadwinner was unemployed was 2.9% lower than in households whose main breadwinner was employed; during the economic crisis this gap widened to 4.5%. The DiD estimates confirmed the significant and intensified negative UEFE for all food categories except fats and sugars. Furthermore, the quantile DiD estimates indicated that the economic crisis enhanced this significant negative UEFE in 2013 up to quantile 0.9. In sum, our findings would suggest that the impact of an economic crisis on unemployment is not only quantitative in nature (i.e., unemployment grows), but also qualitative, as reflected in the more intensified UEFE. This qualitative impact of an economic crisis tends to be overlooked in favour of an exclusive focus on quantitative impacts. Our research can be viewed as an attempt to explore what these 'qualitative effects' could be.

From a policymaker perspective, our results offer several insights of significance. First, they indicate that food policies to mitigate food insecurity should be better designed to target more needy families. Second, the different magnitudes of the UEFE during boom and crisis periods would suggest that food policies should be adjusted to economic cycle phases, not only in absolute terms but also in marginal terms, as unemployed households need to be targeted more specifically in crisis periods. One possibility could be to subsidize healthy foods – so as to lower food expenditure for low-income and unemployed groups – and gradually increase subsidies as a crisis period unfolds so as to counteract the greater UEFE.

The remainder of the article is laid out as follows. Section 2 describes the theoretical framework behind the matching and DiD approaches to explaining the UEFE in crisis periods. Section 3 describes the data used for the empirical study. Section 4 presents and comments the results. Finally, Section 5 concludes the paper.

2. Methods

Inspired by previous studies of the causal impacts of unemployment status on certain health variables (see, e.g., Böckerman and Ilmakunnas, 2009; Urbanos-Garrido and Lopez-Valcarcel, 2015), we used matching techniques and DiD methods to measure the relationship between unemployment and household food consumption and to test how an economic crisis could change this relationship. These empirical methods are described in the next subsections.

2.1. Propensity score matching

Propensity score matching, as introduced by Rosenbaum and Rubin (1983), relies on matching rather than regression in order to reduce treatment-selection bias in estimating causal treatment effects when using observational data.

³ Not considered in our sample were households in which the breadwinner was retired or inactive, since such households are not affected by unemployment.

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