Energy Consumption in Greek Households During the Economic Recession

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ABSTRACT

Greece has been hit particularly hard and insistently long by the economic recession since 2008, a development which inevitably affected the households' behaviour regarding energy consumption and space heating in particular. The results of a field study conducted over two consecutive heating periods are presented and evaluated in the current paper. It is of great interest to analyze and identify dissimilarities of the consumers' behaviour between different winter periods, that is the time period 2011-13, but also between Northern and Southern urban regions, belonging two different climate zones. Consumers' behavior is assessed with respect to the prevailing energy prices and the disposable household income. In that sense determining the degree of elasticity of residential energy consumption can be determined in a bottom-up approach and compared to the national average values for the same period. Reduced income and increased energy cost on the other hand may trigger different reactions, from environmental unfriendly solutions to intensive need for technology innovation.

Keywords: Consumer Behaviour, Disposable Income, Elasticity, Greece, Residential Energy Consumption

1. INTRODUCTION

Total poverty in Greece is higher than the OECD average, according to the OECD Employment Outlook, whilst based on Eurostat data, in 2014 it was the third highest in the EU; a bleak development considering the fact that it ranked 8th in 2009. The key driver of poverty is unemployment with more than 25% of jobless households in Greece living in poor conditions. The same OECD study concludes, that Greece should “focus on integrating environmental considerations into sectoral and economic policies with a view to achieving a low carbon and energy-efficient economy and to better exploit the associated employment and innovation opportunity” (OECD, 2010).

As Greece is facing a severe economic depression since 2008, having lost in those 7 years almost 28% of its GDP, the protection of the weakest against fuel poverty becomes an issue of major importance (IEA, 2013). A
special reduced tariff for electricity for vulnerable, low-income, households is an example of the measures taken by the Greek government in 2013 in that direction. However, energy consumption for heating has been reduced by approximately 60% between 2008 and 2012, based on the sales figure of the retail markets for oil, gas, biomass, wood and electricity (Slini et al., 2014). Alternative heating systems are being considered by consumers, in order to cut down heating expenses, systems which are not always the most effective or the most environmental friendly ones; the choice is based solely on cost considerations. The primary energy consumption in Greece, compared to European and world average, is presented in Figure 1, indicating that oil is the major source used, followed by coal and lignite, used for electricity, and natural gas.

It is noteworthy that according to data on housing conditions by the Hellenic Statistical Authority (2012) 26.8% of the total population lived in 2012 in a house that was poorly heated during the winter, while the corresponding percentage of poor population (having income less than or equal to the poverty limit) and non-poor population were 36.2% and 24.1%. The rates for 2007 were: 17.2%, 26.7% and 14.7% respectively. The majority of the population, 74.1%, in 2012 had central heating systems in their houses, with a small increase compared to 71.8% in 2007, but as our survey showed, many of those systems were not used any more. Between 2008 and 2012 19.5% of the population changed residence due to housing problems.

At the same time, the proportion of the population living in a residence that was not sufficiently cooled during the summer was 34.9% in 2012, a slightly lower than the respective rate for 2007 reaching the 31.2% (Figure 2). The reason for this increase is rather interesting: Many households, especially of the lower income groups installed room air-conditioners and use them both for heating and cooling, as this leads to lower operational costs the using the oil-fired central heating systems, the air-conditioners, however, heat only one room, rather than heat the entire dwelling.

Figure 1. Primary energy consumption in Greece compared to European and global average. Adopted from EEA-European Environment Agency (2011)
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