EFFECTS OF ENERGY PRICES ON ECONOMIC GROWTH

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Overview
There is growing concern over greenhouse gas emissions in the United Kingdom (UK), and their possible impact on the cost of energy. The Department of Energy and Climate Change affirms that energy is a key factor in the UK’s economic growth (DECC, 2013). This paper applies the model of Garen et al. (2011) to examine whether increases in energy price with regard to electricity, gas, solid fuel and liquid fuel (motor fuel and oil) can reduce real gross domestic product (GDP). Time series analysis of biannual data from 1996 to 2013 is used to determine real GDP. Empirical results show that, for the UK, electricity and solid fuel price increases are each significant in having a negative effect on real GDP, thus supporting the hypothesis. However, there appears no negative impact from gas, motor fuel and oil price increases - possibly because of the government’s tax and subsidy policies. Section one of this paper deals with the introduction; section two, motivation; section three, methods and procedures; section four, empirical results; section five, discussion; and section six, conclusion.

Methods
Time series analysis (lagged dependent variable) is employed in this study. Before conducting time series tests on the variables, the Augmented Dickey-Fuller (ADF) unit root test is used to check for stationarity. For results to be consistent, there is a requirement of no serial correlation in the error terms (Green, 2008).

Results
From Model 1, which includes the gas price independent variable, the results show that increases in electricity and solid fuel prices are each found to significantly decrease real GDP. However, for gas and liquid fuel price increases, the results are not statistically significant. In Model 2, which does not include the gas price independent variable, the pattern of findings is similar to that of Model 1.

Conclusions
This paper explores the effects of energy prices on real GDP growth, following the model of Garen et al. (2011). The results indicate that electricity and solid fuel price increases each have a significant negative effect on real GDP, but this is not the case for gas and liquid fuel price increases. As a result, UK policy makers should be attentive to any increase in the price of electricity and solid fuel, as it can be detrimental to economic growth and sustainable development.

References


