

Abstract

This paper reassesses the causal relationship between per capita energy use and gross domestic product, while controlling for capital and labour (productivity) inputs in a panel of 30 OECD countries over the past 40 years. The paper uses panel unit root and cointegration testing and specifies an appropriate vector error correction model to analyse the nexus between income and energy use. In doing so we contribute to an old debate using modern tools that shed a new light. There is some evidence that over the short-run bidirectional causality exists. Our results also show a strong unidirectional causality running from capital formation and GDP to energy usage. In the long run the reverse causality, found in recent work, is lost. We then show that we can reproduce these earlier results in our data if we reproduce a slightly misspecified model for the Engle-Granger two-step procedure used in these earlier papers. Our findings thus imply that results are very sensitive to model misspecification and careful testing of specifications is required. Our results have some strong policy implications. They suggest that policies aimed at reducing energy usage or promoting energy efficiency are not likely to have a detrimental effect on economic growth, except over the very short run.