

The Jevons' Paradox in Transitional and Developing Countries: Questions to be Addressed

What is more important, that the Jevons' Paradox is present for a country or region or the size of the "rebound" for the overall economy, as well as for various sectors and industries? Perhaps for a developed country such as the United States the size of the rebound and in which sectors and industries is more important. However, I would argue that the size of the rebound is of little importance, instead it is more important to understand the factors which cause the Jevons' Paradox to exist - is GDP the main culprit, efficiency improvements, population increases, etc.? Whether the "rebound" is small or large matters not, but whether the Jevons' Paradox is in existence and what factors are driving it does matter; only once this is determined can appropriate policy be developed using a variety of modeling tools for scenario analyses to illustrate where improvements can be made. These statements are particularly true for transitional and developing (TAD) economies as they make structural changes to their economies while moving through the various stages of economic growth.

As nearly all, if not all, TAD economies rely heavily on the agricultural sector, perhaps this is the beginning point. For TAD countries boosting agricultural production is vital for economic growth. However, the agricultural sector is one, if not the most, energy intensive sectors due to the use of fertilizers, pesticides, herbicides, and irrigation pumps just to name a few. Agricultural production, energy and natural resources consumption, are linked as they are dependent upon consumer, political, and industrial decisions, as well as value and cultural choices. Understanding how the agricultural and energy sectors could reconcile with population and natural resources is important for developing policies to address the Jevons' Paradox. As the agricultural sector develops, the economies of TAD countries will expand and need more energy to feed the growth of the agricultural sector.

Furthermore, as development occurs an industrial sector and transportation network will emerge or expanded. Initially, the technology in these sectors will not be very energy efficient but over time new, more energy efficient technology will be adopted. However, the data from these countries shows that energy consumption continues to increase despite improvements in energy efficiency. Why does this occur? Will an increase in energy prices reduce energy consumption in TAD countries? Although economic theory tells us that an increase in prices will decrease consumption, the data suggest otherwise. If this is correct, that an increase in prices does not reduce consumption in TAD countries, why? Is there a price level that will reduce consumption, and, if so, what is that price? What other factors contribute to the Jevons' Paradox in TAD countries? We must also consider the subsidies programs that governments use. Some countries use supply-side subsidies, some use demand-side subsidies, and others use a combination of both. How do these subsidy programs impact the Jevons' Paradox?

These are just some of the questions that I think should be answered empirically in order to further the research on the Jevons' Paradox. What other questions or research areas with the Jevons' Paradox for TAD countries need to be addressed?