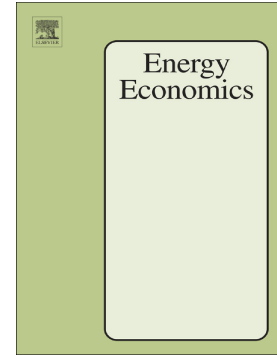


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Does the level of energy intensity matter in the effect of energy consumption on the growth of transition economies? Evidence from dynamic panel threshold analysis

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Does the level of energy intensity matter in the effect of energy consumption on the growth of transition economies? Evidence from dynamic panel threshold analysis

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Abstract

This study investigates whether the effect of energy consumption on economic growth differs by the level of energy intensity. We employ an advanced dynamic panel threshold regression model to test for the “threshold” level of energy intensity that has an asymmetrical energy consumption effect on economic growth; we consider 12 Commonwealth of Independent States countries over the period 1991–2013. The estimated panel threshold regression model suggests 0.44% as the threshold level of energy intensity. Energy consumption above this level significantly retards economic growth, whereas energy consumption below the level is found to have a statistically significant positive effect on economic growth. Thus, when the threshold level of energy intensity (one of the important indicators of energy efficiency) is exceeded, energy consumption significantly hinders growth. If policy makers pay more attention to energy intensity while formulating new energy policies, substantial gains can be achieved in low energy intensity environments.

Keywords: Dynamic Panel Threshold Analysis; Energy Consumption; Economic Growth; Energy Intensity.

Jel Codes: C24; Q43; O11.

1. Introduction

The transition of a centrally planned economy into a market economy requires a long and socially costly process involving comprehensive and continuous development and change for the whole economic system. The main component of a successful transformation is a set of corporate and structural regulations. Because these corporate and structural regulations would include sustainable economic and behavioral principles, the transition process must be gradual. For a real-world example, the reason why the Soviet system lost its power was the loss of its economic influence (Havrylyshyn, 2001). Thus, a resource allocation mechanism based on centralist planning is inadequate for the efficient and effective use of economic resources. Studies on the determinants of economic growth during a transition process have emphasized that increasing the efficiency of production factors can be more determining than pumping additional investments into the economy (Havrylyshyn and Wolf, 1999).

When the Union of Soviet Socialist Republics (USSR) dissolved in the early 1990s, the Commonwealth of Independent States (CIS) countries transitioning from centralist planning into free

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