

Evidence of energy efficiency improvements in Thailand's manufacturing and transport sectors using structural decomposition analysis

Topic: 514B Structural Decomposition Analysis

Author: Tharinya SUPASA

Co-Authors: Shih-mo LIN

The economy of Thailand has been growing rapidly since the 1980s. Consequent to the fast growth of the economy was a remarkable increase in energy consumption to the extent that domestic energy production was insufficient to cope with the energy demand. Therefore, Thailand's energy supply has relied on fossil fuel imports, which means greater insecurity for future economic development. The government has, thus, enforced energy conservation policies for designated manufacturing industries and large buildings since 1995. These policies aim to encourage these designated groups to use energy more efficiently and reduce their energy consumption. Therefore, the effectiveness of the energy efficiency policies is evaluated by implementing an input-output approach. The results reveal that there is evidence of energy efficiency improvement in the Thai economy during the 1995 to 2010 period. The energy intensity of the transport sector was higher than that of manufacturing in both of our selected years. In contrast, the manufacturing sector actually consumed more total energy. The structural decomposition analysis revealed that the factors stimulating increases in energy consumption were the gross domestic product and population growth. Conversely, energy efficiency improvements and economic structural changes were the factors offsetting the increases in energy consumption. To sum up, the implementation of energy conservation policies has achieved an effective outcome.