

Structure Decomposition Analysis of China's Energy Intensity Change from 1987 to 2007

Topic: Analyzing the role of energy

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China has relied on energy to stimulate its booming economy. Its share of world energy consumed rose to 14.2% in 2005 from 7.9% in 1978. Somewhat surprisingly, its rate of economic growth rate was about half that of its rate of energy consumption through 2000. This trend appears to have changed since 2001 as energy consumption rose about 1.3 times more rapidly than did GDP through 2005. Through heavy governmental influence, energy intensity subsequently reduced through 2007, but just marginally. This paper uses the structure decomposition approach to understand key drivers behind China's energy intensity from 1987 to 2007. Using recently released Chinese economic input-output data; we decompose energy intensity into five determinants: energy efficiency, changes in production structure, changes in input use, changes in consumption volume, and changes in consumption structure. In the analysis, we compare results from both multiplicative and additive approaches. This paper provides insights into how changes in China's economic structure, technology, urbanization and lifestyle changes affect energy intensity.