

Analysis of Energy Intensity in Japan

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ABSTRACT

This study discusses the causes of the increase in Japan's energy intensity since the early 1990's. The significant reduction in Japan's energy intensity ceased in the early 1980's and has even slightly increased since the early 1990's, indicating that Japan seemingly has reached the limits of its ability to improve energy use. However, further analysis at prefecture level and sector level provides additional insight on energy intensity trends. At prefecture level, the Fisher decomposition shows that there is a high variability in energy intensity trends between prefectures and that some prefectures have been successful in reducing energy intensity since 1990. The result also indicates that the non-uniform energy intensity trends between prefectures are attributed to a high variability in energy efficiency. At sector level, we estimate the income elasticity of energy consumption in each sector and find that a structural change in energy consumption behaviors occurred in all sectors at different time points. More importantly, the structural changes occurred in 1981 in the industrial sector and in 1988 in the commercial sector are presumably responsible for the deterioration of Japan's energy intensity since the early 1990's.