

Changes in Environmentally Sensitive Productivity and Technological Modernization in China's Iron and Steel Industry in the 1990s.

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Abstract. Technological modernization is widely believed to contribute positively both to economic development and to environmental and resource conservation, through productivity improvements and strengthening of business competitiveness. However, this may not always be true, particularly in the short term, as it requires substantial investments and may impose financial burdens on firms undertaking such investments. This study empirically examines the effects of technological modernization in China's iron and steel industry in the 1990s on conventional economic productivity (CEP) and environmentally sensitive productivities (ESPs). We employ a directional distance function that can handle multiple inputs and outputs to compute relative production efficiencies. We apply these models to the data covering 27 iron and steel firms in China between 1990 and 1999—a period when the Chinese iron and steel industry modernized rapidly. We find that ESPs have continuously improved, even in the period when the CEP declined.