



Energy-Saving Technical Change

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John Hassler^{2,4}, Per Krusell^{1,2,3,4,5} and Conny Olovsson⁴

¹CAERP, ²CEPR, ³CFM, ⁴Institute for International Economic Studies (IIES), ⁵NBER

We estimate an aggregate production function with constant elasticity of substitution between energy and a capital/labor composite using U.S. data. The implied measure of energy saving technical change appears to respond strongly to the oil price shocks in the 1970s and has a negative medium-run correlation with capital/labor-saving technical change. Our findings are suggestive of a model of directed technical change, with low short-run substitutability between energy and capital/labor but significant substitutability over longer periods through technical change. We construct such a model, calibrate it based on the historical data, and use it to discuss possibilities for the future.