

ENERGY EFFICIENCY CHOICE IN THE PURCHASE OF RESIDENTIAL APPLIANCES

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ABSTRACT

This paper provides a quantitative analysis of the behavior of the market for the purchase of energy efficiency in residential appliances and heating and cooling equipment. We examine the historical efficiency choices over the period 1972-80 for eight consumer products: gas central space heaters, oil central space heaters, room air conditioners, central air conditioners, electric water heaters, gas water heaters, refrigerators, and freezers. We characterize the behavior of the market for these products by an aggregate market discount rate. Except for air conditioners, the observed discount rates are much higher than real interest rates or the discount rates commonly used in life-cycle cost analysis of consumer choice. They appear to be relatively constant, even though fuel prices escalated rapidly over the time period. We conclude from these results that the market for energy efficiency is not performing well. Several explanations of the under investment in efficiency are proposed: 1) lack of information about the costs and benefits of energy efficiency; 2) prevalence of third party purchasers; 3) unavailability of highly efficient equipment without other features; 4) long manufacturing lead times; and 5) other marketing strategies.

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