Manuel Frondel and Christoph M. Schmidt ON THE RESTRICTIVENESS OF SEPARABILITY: THE SIGNIFICANCE OF ENERGY IN GERMAN MANUFACTURING

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Any researcher would certainly agree with HAMERMESH's (1993:34) intuition about separability that the ease of substitution between any two production factors should be unaffected by a third factor that is separable from the others. This paper emphasizes that such a notion of separability needs to be more restrictive than the classical separability concept is. We thus coin the notion of strict separability that implies the classical concept. By applying both separability concepts in a translog approach to German manufacturing data (1978-1990), we focus on the empirical question of whether the omission of energy affects the conclusions about the ease of substitution among non-energy factors. We find ample empirical evidence to doubt the assumption that energy is separable from all other production factors even in the relatively mild form of classical separability. Under separability aspects, therefore, energy appears to be an indispensable production factor.