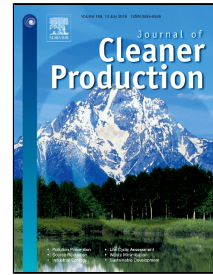


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The Effect of Remanufacturing and Direct Reuse on Resource Productivity of China's Automotive Production Author names and affiliations.



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15

16 Abstract

17 Remanufacturing and direct reuse are considered important measures for promoting the circular  
18 economy and improving resource efficiency. Automotive production is a typical resource- and  
19 energy-intensive industrial sector, and is a prime market for remanufacturing and direct reuse.  
20 Assessing the effect of remanufacturing and direct reuse on the automotive production industry from  
21 the perspective of resource efficiency will provide an important reference for improving  
22 understandings of remanufacturing and guiding relevant policies in a broader context. A literature  
23 review reveals few studies focusing on the resource efficiency of remanufacturing and direct reuse,  
24 and the relative lack of a generally accepted indicator to assess the resource efficiency of industrial  
25 processes. This paper promotes a new indicator, *resource productivity of industrial process*, and  
26 constructs a material flow model to calculate the resource productivity of China's automotive  
27 industry. Results suggest that the indicator and its analytical model are effective tools to assess  
28 resource efficiency. Results also suggest that compared to a case where remanufacturing and direct  
29 reuse are not employed, adding these processes in China's automotive supply chain would increase  
30 *resource productivity of industrial process* by 7.1% in a high efficiency scenario. Based on these

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