Simpson’s Reversal Paradox and Cost Allocation

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Allocation of indirect costs among products sometimes yields a paradoxical result that the unit cost for each product may increase under one method of allocation and decrease for each product under another method. The Stalcup Paper Company case illustrates such behavior of costs and at the same time provides an accounting example of Simpson’s Reversal Paradox (Simpson [1951] and Blyth [1972]) discussed in the statistics literature. As with other paradoxes, this one also disappears upon closer scrutiny. This paper examines the properties of allocated costs in order to arrive at an intuitive understanding of the results. The relationship of the cost allocation problem to Simpson’s Paradox and the implications of the analysis for cost control are briefly discussed. Necessary and sufficient conditions for occurrence of the paradox are also given in Appendix A.