

CIFREM SEMINARS

COMPARING THE ACCURACY OF ABC AND TIME-DRIVEN ABC IN COMPLEX AND DYNAMIC ENVIRONMENTS: A SIMULATION ANALYSIS

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This paper compares the accuracy of traditional ABC and time-driven ABC in complex and dynamic environments through simulation analysis. First, when unit times in time-driven ABC are known, time-driven ABC coincides with the benchmark system and in this case we find that when error in the estimated percentage mix is low, growing unused capacity raises the inaccuracy of ABC. When error in the estimated percentage mix is high, unused capacity may counterbalance some of the impact of this error but not entirely; the offsetting effect is highest when diversity in the total actual productive time spent on activities is also high. Second, when unit time estimates contain measurement error, we compare the overall accuracy of traditional ABC versus time-driven ABC and detect that when diversity in the actual mix of productive work is low (high), time-driven ABC (traditional ABC) tends to be more accurate than traditional ABC (time-driven ABC), especially at higher (lower) levels of unused capacity. Finally, although the accuracy of traditional ABC compared to time-driven ABC increases in case of biased unit time estimates, a traditional ABC system subject to severe error in the estimated percentage mix is almost never more accurate than a time-driven ABC system.