Solving the mystery of double entry bookkeeping
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Double-entry bookkeeping (DEB) has been shown to be reliable. The first documentation of its usage dates to 1494 and it has been used since then without any significant changes, despite more than half a millennium having passed. From time to time, scholars have marvelled at the utility of DEB and have tried to elucidate the reasoning behind its application, particularly the debit-credit mechanism. Yet despite these efforts, the efficacy of DEB remains an unsolved mystery. Using a mathematical approach, this paper presents evidence that DEB is an application of arithmetic. This mathematical approach is motivated by the mathematical content of Summa de Arithmetica, Geometrica, Proportioni et Proportionalita, in which DEB was included. Revealing the internal workings of DEB is an important first step towards developing transparent, accurate and comprehensive accounting practices that can meet the increasing demands of stakeholders.

Keywords: double-entry bookkeeping (DEB), summa, debit-credit mechanism, mathematics