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Data analytics in auditing: Opportunities and challenges

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Abstract   In this article, I provide background regarding a hot topic in the public accounting profession: the rise of big data and the related field of data analytics (DA). The tax and advisory practices of public accounting firms have embraced the use of DA, and firms have made significant investments in growing these practice areas. Although DA holds great promise for the auditing practice as well, the use of widespread DA on audit engagements has lagged behind other practice areas. This is due to the fact that auditing presents unique challenges in the adoption of DA that are not relevant for other practice areas. Despite the impression that DA is not being embraced as readily in auditing, public accounting firms are continuing to make significant investments in developing audit-related DA, and it is only a matter of time before we start to see the transformational impact of these efforts. The purpose of this article is (1) to explain how DA applies to financial statement audits and why it could represent a game changer in how audits are conducted, and (2) to provide a context for researchers in terms of problems to be addressed related to DA.

1. Data analytics: A game changer for public accounting

The term *big data* and the related approaches to analyzing data, often referred to as *data analytics* (hereafter, DA) or *predictive analytics*, have been discussed at length in the popular press and academic journals—to the point of oversaturation in recent years. University programs have been

developed to address DA competencies, seemingly overnight (Briggs, 2013). Indeed, at the American Accounting Association (AAA) annual meeting in August 2014, a panel session co-sponsored by PricewaterhouseCoopers and the University of Illinois was held to discuss how the accounting curricula must adapt to incorporate more data analysis courses (PwC, 2015). The message of the panel was that in order for students to be competitive in both audit and tax, they must learn to become data scientists. Big data is seen as the wave of the future in business, and any organization that falls behind in its development of DA capabilities is expected to lag

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