


Chapter 17

Big Data's Impact on Financial Analysis and Inclusion: Beyond the Balance Sheet

Gali Niha Reddy

 <https://orcid.org/0009-0005-9250-9908>

Department of Data Science, University of Maryland, Baltimore County, USA

ABSTRACT

This chapter studies the significant role of big data in financial technology and its impact on financial inclusion. Big data is revolutionizing global financial services through improved data analytics and computational capabilities, enabling companies to efficiently and trustable data. Big data will enable financial institutions and new entrants to improve financial services, replacing traditional methods of business vitality measurement, which often use historical data and financial statements. This chapter compares traditional financial analysis with big data-enhanced analysis, highlighting the potential for more detailed and real-time understanding of financial performance and tendencies using emerging technology.

INTRODUCTION

In the digital age, financial technology, unprecedented increase and undergoing deeper changes governed by the integration of large data. It is now developing in real-time, forecasting and incorporating systems of analysis operated by huge data streams that depend on a historical scalp financial records and stable balance sheets at a time. Large data characterized by its volume, velocity and variety is

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not just increasing financial services - it basically reshapes them. This chapter has been discovered how big data is revolutionizing in the world of financial analysis and advancing the cause of financial inclusion, determining the stage for a more intelligent and accessible global financial ecosystem(Hausenblas & Nadeau, 2013).

Traditionally, financial analysis depends on periodic reports, such as income statements, balance sheets and cash flow statements. These tools, however, represent a precursor to financial health, and are often limited by their dependence on structured, internally generated data. This approach can ignore external factors, emerging trends, and behavioral signs that can provide an infectious insight of the company or the economic state of the person(Trivedi et al., 2024). On the contrary, large data-enabled financial analysis draws from many data sources-to make a more wide, real-time outlook of image-financial activity and risk of satellite-browsing behavior and satellite image, use of mobile phones, social media activity, mobile phones and satellite. This analytical leap allows organizations to expect trends, personalize services, and make faster, more informed decisions(Aiello & Pagani, 2014).

The role of large data in FinTech is not limited to the maximum of internal efficiency or profit. It has significant effects for financial inclusion, especially in the underwhelmed or marginalized regions. Globally, more than 1.4 billion adults remain unbanked access of Traditional Banking Services (Elgendy & Elragal, 2014). Big Data Analytics is helping to overcome this distance by enabling alternative credit scoring models based on behavioral data. For example, digital lender can evaluate individuals' credit worth using smartphone usage patterns, social network behavior, utility payments, or mobile with activity, where traditional documentation provides a sophisticated financial profile where the traditional documentation falls short. This is the first time opening the door to millions of people to access credit, insurance, savings account and payment systems, thus promoting more economic partnership(Garg & Sharma, 2014).

Another basic shift brought by big data is a motion and scale at which financial decisions can now be made. Models of traditional risk assessment and fraud investigations were usually reactive and rule -based, often unable to continue developing threats. Today, large data-based algorithms and machine learning models can detect inconsistencies, predict fraudulent transactions, and adjust the risk parameters dynamically in real-time. Financial institutions now have the dexterity of working on market activities, consumer behavior changes or systemic disturbances, reducing exposure and increasing elasticity(Goddard, 2017).

Moreover, large data increases transparency and liability in financial systems. Regulatory technologies, benefits of large data, to automate compliance verification, find money laundering activities, and monitor financial markets for signs of manipulation. This has enabled regulators and organizations more effectively operating consumer protection and financial stability. Importantly, the democratization of

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