

BIG DATA ANALYTICS AND INVESTMENT DECISIONS– LESSONS FOR SMART CITY PROJECTS IN SULTANATE OF OMAN

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INTRODUCTION

In a background of multiple data sources getting updated second by second and the widespread availability of internet with higher download speed coupled with falling storage costs, the use of big data in financial markets play a highly critical tool for its quality outputs. In the context of an increased pressure of economic diversification, Sultanate of Oman diversifying its growth strategies to the sectors of technology, innovation, education, investments etc, to reduce its reliance on oil and the upcoming importance of smart city concept in Oman could go together to contribute to the significance of this article.

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Even though large number of foreign Direct Investments flows into, the country also has to look for continuous developmental efforts to invite better participation from domestic investors. Muscat Securities Market (MSM), the single securities market of Sultanate of Oman has been emerged much recently in the year 1998. Government has advanced its regulations to provide all the necessary support in this regard. The Muscat Securities Market and Capital Market Authority jointly conduct a number of awareness and educational programs to boost the investor knowledge and confidence among the public. Large number of financial data regarding most companies in Oman is made available to all the investors through its highly advanced electronic system.

Government's another area of focus is on Smart cities. The recent workshop conducted by Information Technology Authority (ITA) of Oman on smart city in March 2015 expressed its forthcoming focus on smart city concept. Also, the Government's e transformation plan team of Information Technology Authority (ITA) had organized a one day workshop in knowledge oasis jointly with information technology research and advisory company Gartner. In this context, a study on big data analytics for investment decisions by the smart city citizens could be quite futuristic and could receive interest of researchers [1], which joins both of the recent areas of significance, in Oman's scenario.

Various security markets around the world are using big data analytics to monitor unfair practices on the trading floor. For example, Securities Exchange Commission (USA), has used big data analytics to estimate risk metrics for funds, leading to various enforcement actions planned for 2016. [2]

In case of financial markets, large quantity of digital data is being continuously created through the rise of digital devices and interfaces [4]. The examples of data sets include: indexing and benchmarking, referencing data for different securities (e.g. ratings and classifications), pricing (including real-time, snapshot and end of day), issuer details and operational data (e.g. logs on order activity, system and network performance). Further, missing out a single piece of information may adversely affect the investors decision to a larger extent.

The data to be used for investment decisions are quite complicated and a voluminous, further exposing the advantages of assembling them at single space. Though big data analytics can simplify decision making, the process of collecting, organizing, and interpreting them is not an easy task as it requires costly physical infrastructure as well as trained manpower. Nevertheless, research and application of Big Data in financial markets are being explored by governments, as evidenced by initiatives in developed countries like USA and UK; by academics, such as the bigdata @csail initiative from MIT [5]; and by companies such as Intel [6].

Big data analytics provides a solution to the above mentioned concerns especially in the planning stage of smart cities who can develop a common single time infrastructure to collect, organize and process all the relevant data and facilitate decision making. Since smart cities are keen on providing all the infrastructure and smart solutions etc using every benefit of great ICT developments, a platform for guiding investors cannot be ignored especially in era when financial markets are looking for investments from domestic participants. It ensures that investors earn maximum Return on Investments (ROI).

Such common infrastructure will be cost effective solution for the inhabitants of smart cities as small and marginal investors neither have the required skill set and resources to build or develop a similar personal setup. The same infrastructure can also be used for doing algorithmic trading or trading on behalf of the customers since many investors having the resources do not have the time to trade in financial markets. Furthermore, the same infrastructure can be used for solving other problems of the residents thereby leading to economies of scale.

Small investors cannot compete with big investors in terms of resources, capabilities and skill set required for making informed decisions. In the same line, the paper conceptually explores the role of big data analytics in investment decision making process and discusses how investors of smart cities can take its help for better decisions. The paper explores how small investors of smart cities can pool and store resources to analyze big data of financial markets and take collective advantage for smart investment decisions.

These inclusive models will help in boosting investor confidence as well as higher demand for stocks. This demand will not only boost the financial markets but also to be more stable. High dependence on foreign players is quite unreliable and can lead to severe concerns in the long run when hot money start flowing out of the country. Further, the infrastructure can be used in many areas, including regulation and compliance, customer data, risk management etc. Further, it is equally applicable on the sub-sectors of the financial industry including asset management, banking (commercial and retailing), capital markets and insurance.

Oman is undoubtedly towards a golden age of smart investing through data driven technologies. As data sources are becoming larger and richer there lies enormous potential to revisit old issues with new and better data and to answer new questions raised directly by these new contexts.

CONCLUSION

Therefore, even as technology continues to have a dramatic effect on investment decision making process that commands greater policy and public attention, it can improve our ability to

understand various market inefficiencies and to address policy concerns in a manner that is informed by rigorous analysis. There are, however, substantial challenges to overcome. The data being collected by various financial intermediaries are heterogeneous and scattered and pose substantial practical, technical, and methodological challenges to effectively use them for empirical research. However, if these challenges can be met, we expect these data sources to enable researchers to make substantial headway in the coming years into answering important questions about predicting stock markets in a more effective and efficient manner. An emerging economy like Oman can seriously look into the big data analytics infrastructure for its forthcoming smart city projects.

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