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# The risk analysis of Bitcoin and major currencies: value at risk approach

38

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## Abstract

**Purpose** – This study aims to compare investors of major conventional currencies and Bitcoin (BTC) investors by using the value at risk (VaR) method common risk measure.

**Design/methodology/approach** – The paper used a risk analysis named as VaR. The analysis has various computations that Historical Simulation and Monte Carlo Simulation methods were used for this paper.

**Findings** – Findings of the analysis are assessed in two different aspects of singular currency risk and portfolios built. First, BTC is found to be significantly risky with respect to the major currencies; and it is six times riskier than the singular most risky currency. Second, in terms of inclusion of BTC into a portfolio, which equally weights all currencies, it elevates overall portfolio risk by 98 per cent.

**Practical implications** – In spite of the remarkable risk level, it could be considered that investors are desirous of making an investment on BTC could mitigate their overall exposed risk relatively by building a portfolio.

**Originality/value** – The paper questions the risk level of Bitcoin, which is a digital currency. BTC, a matter of debate in the contemporary period, is seen as a digital currency free from control or supervision of a regulatory board. With the comparison of major currencies and BTC shows that how could be risky of a financial instrument without regulations. However, there is some advice for investors who would like to invest digital currencies despite the risk level in this study.

**Keywords** Value at risk, Bitcoin, Major currencies, Money market

**Paper type** Research paper

## Introduction

As a result of the unprecedented pace of technological advancements accompanied by the further globalization of the world, money transfers and trades are executed heavily on the internet in our contemporary world. Fast-paced penetration of the internet usage emerged digital money transfer system. In such unreliable system free from supervision of any authority, various digital currencies are used e.g. Bitcoin (BTC). Development of digital currencies as a new exchange method has long been foreseen. Nobel Prize economist Milton Friedman addressed in 1999 that expansion of internet usage and advancements in technology would eventuate in the invention of digital money allowing trade and out of reach of government control (Wegdel and Andersson, 2014, p. 8).

The BTC system, the contemporary argument, relies on an article of “Peer to Peer Electronic Cash System” published by Satoshi Nakamoto in 2008 (Nakamoto, 2008). Satoshi Nakamoto, deemed to be the Founder of the BTC system, does not stand for a real person. Furthermore, it is claimed that this name is associated with large-sized technology companies in a way that while “Sa” part of this name refers Samsung, “Toshi” refers

