

## **Volatility analysis of cryptocurrencies and fintech securities**

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### *Abstract:*

This paper examines if the volatility exhibits a symmetric or an asymmetric response to past shocks, particularly the relevance of structural breaks for disruptive financial instruments (FinTech, Bitcoin). For the comparison purpose we have also included an Incumbent index which is computed as a portfolio of 10 large financial services incumbents. In addition, it is of interest if the aforementioned indexes are correlated with standard financial instruments as measured by S&P500 index, for optimizing investment portfolios. Using a group approach (market-cap weighted indexes) and daily data from November 2016 to November 2018, the results suggest that markets react different to similar negative and positive returns (i.e. asymmetric effect) and Fintech index outperform the others. For the bivariate approach (Asymmetric Dynamic Conditional Correlation GARCH model), the S&P500 index has been considered and the results suggest a different pattern for Bitcoin than for Fintech and Incumbents. The assumption of constant conditional correlation is rejected by the ADCC model, where the parameters that govern the GARCH process of the Q sequence ( $\theta_1$  and  $\theta_2$ ) are significant. Therefore, one can highlight a contagion effect between Fintech, Incumbents and S&P500, i.e. a joint risk due to shifts of international capital could affect them similarly. This means that Fintech (or Incumbents) and Bitcoin could be considered simultaneously for portfolio diversification.

### **Keywords**

FinTech, Bitcoin, volatility, correlation.

### **JEL Classification**

G23, G24, O16