題目	加密貨幣的外溢和槓桿效果分析
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摘要	本研究利用 GARCH-M-ARMA 模型和 EGARCH-M-ARMA 模型，探討加密貨幣與美元指數、歐元指數、日圓指數、全球離岸人民幣指數及黃金價格等變數之關係。分析外溢效果、報酬率波動性外溢效果、風險與報酬率間的關連性及槓桿效果。結果發現加密貨幣及貨幣指數具有波動叢聚性、風險、與槓桿效果。另結果顯示美元、歐元、人民幣及日圓指數分別對 BTC 和 Litecoin 出現報酬率外溢效果。貨幣指數前期報酬波動性對當期加密貨幣報酬波動性均呈現顯著的外溢效果，且 BTC 與美元指數皆出現顯著負的雙向外溢效果。
關鍵字	加密貨幣、外溢效果、槓桿效果、GARCH-M-ARMA 模型、EGARCH-M-ARMA 模型
Title	The Spillover and Leverage Effects of Cryptocurrency
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Abstract	This paper used the GARCH-M-ARMA and EGARCH-M- ARMA models to examine the existence of the spillover effects of return and return volatility as well as leverage effect between cryptocurrency and fiat currency. Both the cryptocurrency and the fiat currency have fluctuated on clustering phenomenon, risk, and the leverage effect. This paper found that the Dollar Index, Euro Index, RMB index, and Yen Index had a spillover effect on the Bitcoin and the Litecoin. The previous return volatilities of fiat currencies have impacts on the current return volatilities of cryptocurrencies. Also, the results of Bitcoin and Dollar index showed significantly two-way negative spillover effect.
Keyword	Cryptocrrency, Spillover Effect, Leverage Effect, GARCH-M-ARMA, EGARCH-M- ARMA