

## A study of spillovers in Banking Indices of India and the US using VAR-M-GARCH Approach

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### Abstract

This paper estimates the spillovers of return and volatility between NASDAQ, BKX, Sensex and Bankex. The study includes lognormal daily returns of four banking indices for a period of 10 years (December 2009 to April 2019). We used unit root test to check the stationarity of the indices. We employed VAR model & MGARCH-BEKK model to study the spillovers of return and volatility amongst the banking indices. The VAR model is used to estimate the return spillover whereas for estimation of volatility spillover MGARCH-BEKK model is used. The result revealed that the risk is more in Bankex. We also found that the volatility in Sensex is more sensitive to past market information. Amongst four indices, BKX shows the greatest degree of volatility clustering and thus shows a higher possibility of a relationship between its present volatility movement and its previous volatility movement.

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**JEL Code :** C32, G15, G17, G14

**Keywords :** Lag return; VAR; Granger Causality; Spillover; ARCH-LM; MGARCH Model; Banking; India

### I. Introduction

STOCK PRICE MOVEMENTS are prone to the information and events related to the stock(s) both directly and indirectly which can be foreseen. The reaction level in stock prices to the information/event depend on how much favourable the information/event are. The event for the business is related to the stock, but with some unforeseen events and information, those are exogenous to the business largely. The stock market gets a shock and the price movement may show a shockwave for some time after the occurrence of the event or after the announcement of the information. Many a times, these shocks

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*Submitted February 2020; Accepted July 2020*

Sensex. The results revealed that independent causality exists amongst both the country's own banking indices that is between Sensex and Bankex and between NASDAQ and BKK.

Using M-GARCH-BEKK model, we examined the volatility spillover effects amongst the banking indices. We estimated the interaction between conditional variance and co-variance and the volatility transmissions. The model found that any change in Bankex, BKK and NASDAQ has maximum effect on the volatility of Sensex in the next period and Sensex is more sensitive to the past market information as it has highest ARCH effect. The model also revealed that any change in the volatility in BKK and NASDAQ has a maximum effect on the volatility of itself in the next period where as any change in the volatility in Bankex a maximum effect has in BKK in the next period.

This research could be a good piece of information for the policy makers as it reveals the existence of volatility transmission from US banking indices to Indian banking indices. The study also found absence of volatility transmission from the main index of both the countries to their sub-index. This may help the fundamental analyst in return prediction and risk calculation.

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