

STOCK MARKET INTERLINKAGES OF INDIAN AND OTHER GLOBAL INDICES

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ABSTRACT

The study investigates the correlation among the Indian stock market with that of other developed countries and has tried to explore the possibility of potential diversification benefits and how the movement of global indices affects the Indian stock market. In the present context, encompasses the aspect of interdependence or co-movements of stock index return across the national equity markets. Greater co-movements of prices in two different markets lag relationship across can be demonstrated as stronger inter linkages or integration between the two different stock markets. The leading indices of the selected stock markets are considered as proxies of the markets. Using the monthly Index data of 2009 authors examine the stock market indices of India (SENSEX), Hong Kong (HANGSENG) and US (DJIA). Correlation and t-test technique has been employed to study the relationships between the market pairs. The paper explores the significant correlation between SENSEX and DOWJONES, SENSEX and HANGSENG.

Keywords: SENSEX, DOWJONES and HANGSENG.

INTRODUCTION:

In an era of mounting Liberalization, Privatization and globalization (LPG) in the emerging economies, the transmission of movements in international financial markets and assets are important issues for cross border investments, especially in periods where markets are highly volatile. The determination of diversification strategies by an international investor also depends crucially on the nature and magnitude of the relationships (correlation) existing between different stock markets. Thus it becomes important for investors to understand the correlation between SENSEX and DOWJONES, SENSEX and HANGSENG and interdependence among the various markets to diversify their portfolio risks and to derive high return. This is a study of correlation between the major Indian

stock indices SENSEX and the US stock indices DOWJONES as well as Major Indian stock indices SENSEX and the Asian stock indices HANGSENG.

BSE SENSEX or Bombay Stock Exchange sensitivity index is a value weighted index composed of 30 stocks that started Jan. 1, 1986. The SENSEX is regarded as the pulse of the domestic stock market in India it consist of 30 largest and most activity traded stocks representative of various sectors on the BSE. These companies account for around 50% of the market capitalisation of the BSE. The base value of SENSEX is 100 on April 1, 1979 and the base year of BSE SENSEX is 1978-79.

The Dowjones industrial average (DJIA) also referred to as the industrial average, the Dowjones, the Dow 30 or simply the Dow, is a stock market index and are the several indices created by wall street journal editor and Dow jones and company co-founder charles Dow. The average is named after Dow and one of his business associates, Statistician Edwrd Jones. It is an index that shows how 30 large, publicly owned companies based in the United States have traded during a standard trading session in the stock market. It is the second oldest U.S. market index.

The Hangseng Index (HSE) is a free float adjusted market capitalization weighted stock market index in Hong kong. It is used to record and maintain daily changes of the largest companies of the Hong kong stock market and is the main indicator of the overall market performance in Hong kong These 45 constituent companies represent about 60% of capitalization of the Hong kong stock exchange

LITERATURE REVIEW:

Correlations of Stock market are the most popular topics in the finance for the research like Makridakis and Wheelwright, 1974; Joy et al., 1976; Hilliard, 1979; Maldonado and Saunders, 1981; Philippatos et al., 1983. The issue of ripple correlations among stock markets has become an important substance in the modern finance. The degree of

linkages, co-movements or interdependencies among the stock markets provides important implications on potential benefits of international portfolio diversification and on financial stability of a country (Ibrahim, 2005). The emerging markets are also found to be more closely integrated with markets in the rest of the world, although their integration progress has been far less than the industrial countries. This further implies that the potentialities of portfolio diversification benefits across the world stock markets in the long run tend to diminish. In addition, an escalating integration among the national stock markets further implies that international financial instabilities are easily transmitted to domestic financial markets, a phenomenon called as 'financial contagion' (Ibrahim, 2005).

OBJECTIVE OF THE STUDY:

- ❖ To explore the affect of changes in global indices on movement of SENSEX.
- ❖ To examine the correlation between different global stock indices.

HYPOTHESIS :

- 1) There is no significant relationship between movement of SENSEX and movement of DOWJONES.
- 2) There is no significant relationship between movement of SENSEX and movement of HANGSENG.

METHODOLOGY AND TESTING :

The data for the analysis were drawn from the yahoo finance database for the year 2009 (Monthly data). The study covers three Stock markets namely SENSEX(India), HANGSENG (Hong Kong) and DJIA(US market) and try to stipulate correlation between them. We compute the correlation of the stock markets using Karl Pearson's Coefficient Correlation formula Table 1 provide a data which help in finding out the correlation between SENSEX and DOWJONES; and Table 2 provide a data for finding out correlation between SENSEX of HANGSENG

Table - 1

$$r = \frac{\sum(x_1 - \bar{x}) \sum(y_1 - \bar{y})}{\sqrt{\sum(x_1 - \bar{x})^2} \sqrt{\sum(y_1 - \bar{y})^2}}$$

$$r = 0.93$$

$$t = \frac{r}{\sqrt{(1-r^2)/n-2}}$$

Where r = 0.93, n = 12, Calculated t = 6.66

The tabulated t value at 0.05 level of significance at 10 degree of freedom is 2.228.

Calculated > Tabulated

$$6.66 > 2.228$$

Interpretation - This means that the correlation coefficient is significant and hence the correlation between the two variables [SENSEX and DOW JONES] is significant.

Table - 2

$$r = \frac{\sum(x_1 - \bar{x}) \sum(y_1 - \bar{y})}{\sqrt{\sum(x_1 - \bar{x})^2} \sqrt{\sum(y_1 - \bar{y})^2}}$$

$$r = 0.99$$

$$t = \frac{r}{\sqrt{(1-r^2)/n-2}}$$

Where r = 0.99 n = 12

Calculated t = 22.19

The tabulated t value at 0.05 level of significance at 10 degree of freedom is 2.228.

Calculated > Tabulated

$$22.99 > 2.228$$

Interpretation - This means that the correlation coefficient is significant and hence the correlation between the two variables [SENSEX and HANGSENG] is significant.

A study of correlation between monthly return of Sensex and Dowjones, Sensex and Hangseng in 2009 shows a high degree of positive correlation. Market oriented economic reforms, have played a big role in integration of Indian market with the other global market.

A positive correlation indicates that two indices move in same direction. The study shows the correlation was as high as 0.93 between sensdex and Dowjones and 0.99 between sensdex and hangseng. The Indian and American market as well as Indian and Asian market shows a high degree of positive correlation in the year 2009. As we know that indian investors who keep an eye on other global indices (Americal and Asian) are better at market prediction. Our study also shows high degree of positive correlation and 'T' test result shows the correlation between the two variables are significant. Hence, it also reject the null hypothesis that there is no signification relationship between SENSEX and DOWJONES and SENSEX and HANGSENG.

CONCLUSION :

The study proves the positive correlation co-

efficient and significant correlation between Sensex and Dowjones, Sensex and Hangseng. So the investor must kept movement of Americian (Dowjones) and Asian (Hangseng) stock indices at the time of investment in Indian stock market. As their is a positive correlation between movement of Dowjones and Sensex and Movement of Hangseng and Sensex.

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