

Status of Stock Market Concentration and Turnover at Nepal Stock Exchange

Rajesh Gurung, PhD

Lecturer, Nepal Commerce Campus

Faculty of Management,

Tribhuvan University, Nepal

Abstract

This paper examines the status of stock market concentration and turnover in Nepal Stock Exchange (NEPSE) during the period from Mid-July 2003-04 to Mid-July 2019-20. Despite the NEPSE's high concentration and low degree of liquidity, the research reveals that stock market concentration and turnover are gradually improving, with the banking sector playing a key role in market concentration. It also finds a negative association between market concentration and stock turnover, meaning that a decrease in stock concentration is accompanied by an increase in turnover (or liquidity) across the study period. This has important policy implications, particularly in terms of reducing the market concentration and improving liquidity. Encouraging family-owned business to go public and attracting international capital flows so as to reduce investment risk and increase confidence of market participants in the capital market of Nepal.

Keywords: Stock market concentration and stock market turnover

Cite this paper

Gurung, R. (2022). Status of Stock Market Concentration and Turnover at Nepal Stock Exchange. *Pravaha*, 28(1), 71-76.

Introduction

The stock market has been acknowledged globally as an important player in capital mobilization to accelerate the pace of the economic growth. In particular, it has played its part in consolidating the scattered savings and mobilizing them into the productive sectors to promote economic growth and then enhance the way in which people live in the society. It has been argued, especially in an emerging market, the evolution of stock market has become more crucial. For instance, Levine & Zervos (1998) advocated that a well-established stock market not only can mobilize capital and diversity risks between market agents but also it is able to provide different types of financial services than banking sector to stimulate economic growth. Moreover, Agrawal (1997) contends that the bank dominated economies prior mid 1980s were suffered with lack of liquidity, absence of foreign institutional investors, investors' lacking in confidence in equity market in many of the developing countries. Pegano, et al. (1996), Demirguc-Kunt & Levine (2001), and Singh (1997) support for a strong stock market for the sustainable development of economy, especially in developing countries. Despite the many facets of stock market development, a highly developed market is defined as one with a large market capitalization, high degree of liquidity, lower concentration, that linking towards real economic activities. Stock market concentration is associated with the degree to which a market is dominated by a small number of companies. High market concentration is argued to lead to decrease competition and increase the power of dominant companies, while low market concentration implies a more competitive market with many market players.

The degree of market concentration is closely linked to the stock market liquidity; where the large quantities of stock are traded easily amongst many buyers and sellers without affecting the stock prices significantly at minimal transaction costs. Moreover, highly liquid market is also considered to improve efficiency of resources and supports for long-term economic growth. Levine (1996) argues that the relatively liquid

stock countries tend to grow significantly faster than non-liquid market countries. The studies (for example; Holmstrom and Tirole, 1993; Neusser and Kugler, 1998; Bencivenga et. al., 1996) argue that liquidity lowers the cost of the foreign capital essential for development, increases investor incentive to acquire information on firms and improve corporate governance, thereby facilitating growth. High market concentration can lead to lower liquidity, as the dominant firms may not be as interested in buying or selling their shares, which can lead to a lack of trading activity. Additionally, if there are fewer firms in the market, there will be fewer potential buyers and sellers, which can also lead to lower liquidity. EI_Wassal (2013) contends that the concentration adversely affects market development as it hampers market breadth by the concentration of capitalization within a handful of large companies, limiting the range of attractive investment opportunities and thus adversely affecting liquidity in the stock market in question. Moreover, highly concentrated market could weaken the link between stock prices for non-leading companies and/or their performance and growth prospects. That is to say, the prices of stocks in non-leading companies are affected by market movements of stock prices of leading companies more than their own performance and prospects, and distort the signaling function of stock markets. Market concentration also might encourage speculative activities as investment alternatives are limited and diversification possibilities are limited as well.

In Nepal, the capital market is primarily composed of intermediaries such as banks and financial institutions in addition to the developing market-based securities market. The Nepal Stock Exchange (NEPSE) is the country's only organized stock exchanges, and it plays a critical role in capital formation and mobilization in the economy of Nepal. However, the secondary capital market in the country features active trading of the common stocks, while the bond market is relatively inactive. Furthermore, in comparison to the number of firms incorporated, the country's stock exchange represents a very small number of companies listed on exchanges. Despite the limited number of companies listed on the stock exchange in comparison to the number of companies incorporated in the country, the security market has seen notable progress with the introduction of digitalization. This includes an increase in market capitalization, turnover, and a decrease market concentration. The purpose of this paper is to analyze the status of the stock market concentration and turnover in the stock market of Nepal. The subsequent section discusses the research methods, results and discussion, conclusion, and implication.

Research Methods

The non-stationary time series is argued to provide misleading inferences in the relationship between the variables because it produces the effect of shock in the series permanently. It appears when the mean and variance of time series used in the model changes over time and said to have existed a unit root. Therefore, stationary form of time series is an essential precondition while developing the relationship amongst variables of interest. The following Augmented Dickey-Fuller (ADF) test proposed by Dickey and Fuller (1979) has been applied to pursue the unit root tests of market concentration and value of stocks traded ratio.

$$\Delta Y_t = \alpha_1 + \beta_1 t + \beta_2 Y_{t-1} + \sum_{i=1}^m \delta_i \Delta Y_{t-i} + \varepsilon_t$$

Where the symbol Δ is a difference operator and Y_t is a time series. The α , β , and δ represent the parameters of respective variables applied in the study. The ε_t is the white noise error term and m is the maximum length of the series. The null hypothesis of time series (Y_t) has got unit root (i.e., $H_0: \beta_2 = 0$) is tested against the alternative hypothesis of time series (Y_t) is stationary (i.e., $H_1: \beta_2 < 0$). The null hypothesis is rejected in the favor of alternative hypothesis if beta coefficient is significant.

Results and Discussion

This section includes the status of market concentration and turnover, stationary test, and correlational relationship between the variables.

Status of Market Concentration and Turnover

Table 1.1 provides a size to total market capitalization ($MCAP_{TOTAL}$), value of stocks traded (VST_{TOTAL}), market capitalization of top ten companies ($MCAP_{TOP10}$), stock market concentration (MCON, %), and value of stocks traded or turnover (VST, %) at Nepal Stock Exchange, at four-year succession period, during the years from Mid-July 2003/04 to Mid-July 2019/20. The market concentration represents the percentage of the market value of top ten companies reported by NEPSE to the total market capitalization. In addition, it also reports the relative value of market concentration (% Chg MCON) in comparison to previous years. Similarly, stock market liquidity has been measured dividing the value of stocks traded by total market capitalization of their respective years. The relative value for liquidity (% Chg VST) compared to previous years is also reported in the final column of the Table 1.1.

Table 1.1

Size and Change in Market Concentration and Liquidity

NPR in billion in constant price (Base 2000/01)

Fiscal Year	$MCAP_{TOTAL}$	VST_{TOTAL}	$MCAP_{TOP10}$	MCON, %	VST, %	% Chg MCON	% Chg VST
2003/04	62.39	3.23	41.16	65.97	5.18	2.62	216.81
2007/08	551.60	34.37	286.56	51.95	6.23	-21.90	38.85
2011/12	554.63	15.47	23.41	42.22	2.79	-3.26	35.38
2015/16	2846.69	246.93	1198.11	42.09	8.67	-9.11	31.37
2019/20	2700.05	225.97	941.38	34.87	8.37	-2.74	19.19
Average*	1190.43	89.18	486.26	47.01	5.93	-2.92	9.39

Source: NEPSE Annual Reports and Researcher's Calculation

*Average includes data from 2003/04 to 2019/20

During the period 2003/04, the market concentration reached its peak at 66 percent. Since then, it has gradually decreased in each successive four-year period, with the lowest figure being 35 percent. The overall average concentration accounted 47 percent. Despite the gradual decline in market concentration over the last 17-years, Nepalese stock market is still dominated by a few large companies. Studies such as K. C. (2010) argue that this ratio is only 20 percent in established stock markets, however it fluctuates up to 90 percent in case of undeveloped countries. With respect to the liquidity (VST, %), the results show a rising-falling pattern of liquidity as it has inclined to 6.23 percent in 2007/08 from 5.18 percent in 2003/04. The turnover ratio is declined to lowest 2.79 percent in 2011/12 and it went up to the highest figure of 8.67 percent in 2015/16. The turnover ratio has been revealed 8.37 percent in fiscal year 2019/20 and the overall average has stood to be 5.93 percent. This shows the turnover in the Nepalese stock market is lower than market of neighboring countries such as India, Pakistan, and Bangladesh. The World Bank (2020) reports the turnover ratios lower than the ratios reported for India (74.95), Pakistan (29.59 %), and Bangladesh (16.62%). Low stock market turnover is thought to be an impediment to a country's stock market development. This is because in an effective stock market, the presence of a large number of buyers and sellers eager to deal in significant quantities of stocks, together with market information flowing freely to those investors, results in proper stock market pricing.

While comparing the changes in comparison to preceding year, for each four-year succession period, the percentage changes in the market concentration (% Chg MCON) have shown negative except for the fiscal-year 2003/04, in which it has been revealed 2.62 percent, and the overall average percentage decrease of 2.92 percent. This shows that the concentration of the big companies on the market has gradually been declined over the past 17-years. But the percentage change in the value of stocks traded (% Chg VST), which are positive in each of the four-year succession periods, has the largest value of 216.81 percent between the fiscal-year 2003/04 and previous year, and the overall average change for entire study period stands at 9.39 percent. This showed clearly a downward market concentration and upward value of stocks traded over the 17-years.

Data Stationarity

Table 1.2 reports the results of Dickey-Fuller Test of null hypothesis that a time series has a unit root against the alternative hypothesis that it is non-stationary.

Table 1.2
Unit Root Tests

Variables	ADF Test		Order of Integration
	Level	First Difference	
MCON	-2.505 (0.135)	- 7.146 (0.000)	I (1)
VST	-1.386 (0.562)	-4.017 (0.009)	I (1)

The results of the Augmented Dickey-Fuller for the period from mid-July 2003 to mid-July 2020 are presented in Table 1.2. The null hypothesis of a time series having a unit root is tested against the alternative hypothesis that it is non-stationary. As to the annual time series, as suggested by Wooldridge (2009) the maximum lag length has been set to 2. The reported values are test statistics and symbol ' * ' represents the results at a 1 percent level of significance. The results suggest that the both the market concentration and value of stocks traded are significant at first difference, therefore the time series are integrated of order 1, I (1). Figures 1.1 and Figure 1.2 show the time series trend at the level and first differenced time series.

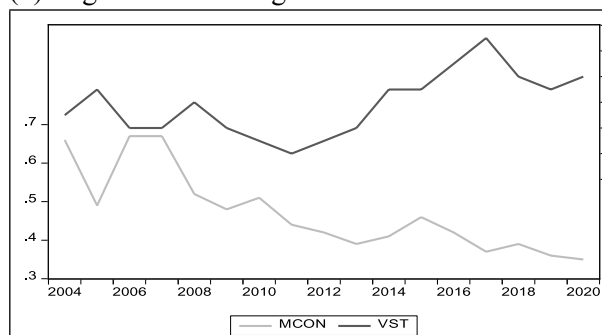


Figure 1.1: Trend at Level Series

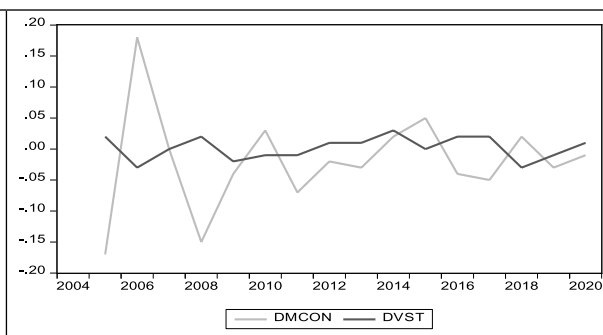


Figure 1.2: Trend at First Differenced Series

Measuring Relationship

After identifying the nature of time series stationarity, the correlation coefficient between the stock market liquidity and the stock market concentration at first differenced time series is calculated and it is witnessed a negative by 0.574. This is significant at 2 percent level of significance. This result suggests that there is an inverse relationship between concentration and turnover indicating that as stock concentration decreases, simultaneously rise in the liquidity or stock turnover at the Nepal Stock Exchange during the study period. The theory of portfolio diversification states that by holding a diversified portfolio of investments, an investor can reduce their overall portfolio risk. This is because different types of investments tend to have varying levels of risk and return, and by holding a mix of investments, an investor's portfolio is less likely to be impacted by the performance of any one investment. Therefore, by diversifying a portfolio, an investor can achieve a desired level of return while limiting their exposure to risk. However, if the concentration is too high, it may increase the portfolio risk and contradict this contemporary theory of portfolio diversification. It is theoretically challenging for investors to make investment decisions based on liquidity and stock concentration, particularly when it comes to picking small market capitalized stocks that have a negative correlation to one another in a portfolio. This is because small market capitalized stocks tend to be less liquid and more volatile than larger stocks, making it difficult for investors to accurately assess their risk profile and potential for return. Moreover, if a portfolio is highly concentrated in a small number of stocks, it increases the risk of the portfolio being significantly affected by the performance of those individual

stocks. This can make it difficult for investors to achieve their desired level of return while limiting their exposure to risk. As a result, this can reduce the attractiveness of the stock market to investors and other participants, as it increases the risk of investment.

Having a dominance of a few sectors in the stock market concentration is also a cause of concern in the Nepal's stock market. This is because when a large portion of the stock market is concentrated in a small number of sectors, the performance of those sectors can have a significant impact on the overall performance of the stock market.

Table 1.3

Statistics of the Largest Ten Companies by Market Capitalization

Sectors	Times	Percentage
Commercial Banks	122	71.76
Hydro Power	19	11.18
Insurance	10	5.88
Manufacturing & Processing	5	2.94
Others	14	8.24
Total	170	100.00

Source: Annual Reports, NEPSE, and Researcher's Calculation

In particular, covering the period of past 17-years, a large capitalized companies at NEPSE consist from five distinct sectors (Table 1.3). Of 170 observations, the commercial banking sector is represented by 122 (or 72%), which implies that the commercial banking sector has the largest stock market concentration. The eleven times out of 100 in hydropower sectors, and rest includes the insurance, manufacturing & processing, and other sectors. It's worth noting that in each of the three fiscal years from 2005/06 to 2007/08, eight commercial banks and two hydropower companies were among the top ten market-capitalized companies at NEPSE. Since the concentration limits the opportunities for diversification, reduce the competition, and increase the systemic risk; it is important for regulatory measures to be in place in order to maintain balance and promote fair competition within the different sectors of economy.

Conclusion

The results analysis is based on the status of stock market concentration and stock market turnover at Nepal Stock Exchange during the period from Mid-July 2003-04 to Mid-July 2019-20. In comparison to other developed and neighboring markets, the Nepal Stock Exchange has lower stock turnover and higher market concentration, indicating that Nepal's stock market is still in its early stages of development. The market capitalization indicates that the banking and hydropower sectors are highly dominant in the stock market of Nepal. The high level of market concentration in the stock market of Nepal has raised concern about reduced competition and increased market power of dominant firms. This high dominance by a few sectors can also lead to a lack of diversity in investment opportunities and increase the risk of the stock market. The research has shown that the market concentration has a negative relationship with stock turnover, indicating that as concentration decreases, turnover (or liquidity) increases over the study period. This has important policy implications, particularly in terms of reducing the market concentration and improving liquidity. Encouraging family-owned business to go public and attracting international capital flows so as to reduce investment risk and increase confidence of market participants in the capital market of Nepal.

References

- Agrawal, R. N. (1997). Inflow of Foreign Portfolio Investment in Developing Countries: A Study of Determinants and Macro-Economic Impact. *The Indian Economic Review*, 217-229.
- Bae, K. H., Bailey, W., & Kang, J. (2021). Why is Stock Market Concentration Bad for the Economy? *Journal of Financial Economics*, 436-459.

- Bencivenga, V. R., Smith, B. D., & Starr, R. M. (1996). Equity Markets, Transaction Costs, and Capital Accumulation: An Illustration. *The World Bank Economic Review*, 241-265.
- Demirguc-Kunt, A., & Levine, R. (2001). *Financial Structures and Economic Growth: A Cross-Country Comparison of Banks, Markets, and Development*. MA: MIT Press.
- Dickey, D. A., & Fuller, W. A. (1979). Distribution of the Estimators for Autoregressive Time Series with a Unit Root. *Journal of the American Statistical Association*, 74 (366a), 427-431.
- EI_Wassal, K. A. (2013). The Development of Stock Markets: In Search of a Theory. *International Journal of Economics and Financial Issues*, 606-624.
- Grullon, G., Larkin, Y., & Michaely, R. (2019). Are US Industries Becoming More Concentrated? *Rev. Financ.*, 697-743.
- Holmstrom, B., & Tirole, J. (1993). Market Liquidity and Performance Monitoring. *Journal of Political Economy*, 678-709.
- K. C., B. (2010). Stock Market Development in Nepal: Issues and Challenges for Reform. *SEBON Journal*, 77-94.
- Levine, R. (1996). Stock Markets: A Spur to Economic Growth. *Finance and Development*, 7-10.
- Levine, R., & Zervos, S. (1998). Stock Markets, Banks, and Economic Growth. *American Economic Review*, 537-558.
- Levine, R., & Zervos, S. (1998). Stock Markets, Banks, and Economic Growth. *The American Economic Review*, 537-558.
- Neusser, K., & Kugler, M. (1998). Manufacturing Growth and Financial Development: Evidence from OECD Countries. *The Review of Economics and Statistics*, 638-646.
- Pegano, M. (1993). Financial Markets and Growth: An Overview. *European Economic Review*, 613-622.
- Pegano, M., & Roell, A. (1996). Transparency and Liquidity: A Comparison of Auction and Dealer Markets with Informed Trading. *Journal of Finance*, 579-611.
- Singh, A. (1997). Financial Liberalization, Stock Markets, and Economic Development. *Economic Journal*, 771-782.
- Wooldridge, J. M. (2009). *Introductory Econometrics: A Modern Approach (4th ed.)*. Natorp Boulevard: South-western Cengage Learning.
- World Bank (2020). Business and Economic Data for 200 Countries. The Global Economy.com.