Financial Factors Affecting on Foreign Direct Investment Flows into Nepal

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Abstract

Foreign direct investment in Nepal has played a vital role in bridging the gap between demand for capital and supply of capital in the country as it has been facing scarcity of capital supply. The main objective of this study is to examine the role of financial variables on foreign direct investment flows into Nepal. Regression analysis and elasticity coefficient are used to examine the role of financial sector in foreign direct investment flows. The result shows that the coefficient of broad money supply (0.81), NEPSE index (-0.71) and total transaction in financial market (0.38) are the significant variables affecting foreign capital flows into Nepal. However, NEPSE index negatively affects foreign capital flows into Nepal. Since the Government of Nepal has undertaken various measures to raise FDI flows into the country, the government should carefully develop the financial sector as it is one of the prominent factors affecting the foreign capital flows.

Keywords: Foreign direct investment, elasticity, spurious, broad money supply, financial

Introduction

Foreign direct investment (FDI) is a driver of economic growth for developed as well as developing countries, and it has played a significant role in globalization and market integration. Both developed and developing countries have taken various measures to raise the flows of FDI within the countries to channel the economic activities in the positive direction. However, Nepal has been unable to attract a considerable amount of FDI. Nepal has been trying to overcome the problem of low chunk of FDI flows into the country by introducing various measures like Technology Transfer Act 1992, Foreign Investment Policy 1992,

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The Foreign Investment and Technology Transfer Act, 2019 etc. Nepal is a developing country with a small market size, lacks modern technology, and faces deficiency of capital. It, therefore, needs large amount of capital to bridge the gap caused by poor technology and capital deficiency. Dunning's (1977) location theory summarized the important determinants of FDI: market size, availability of natural resources, efficiency, asset seeking, and trade situation of the country. These motivations for inflows of FDI are related to location advantage.

Strong financial sectors and volume of investment along with human capital are essential for economic growth and development of a country, but deficiency of capital puts a limit to the country's overall macroeconomic variables. A low level of national income reduces saving and investment, thereby limiting the economic growth of the country. The existing traditional technology is another factor that causes negative impact on economic growth of the nation. FDI overcomes these problems and raises the overall macroeconomic indicators (GDP, per capita income, employment level, export, and so on). FDI and foreign technology are the important resources bringing the modern managerial practices.

FDI flows have increased significantly in Nepal since 1990s, and it remained a prominent source to bridge the deficiency of capital investment in the country. However, the FDI inflows into Nepal have been extremely low compared to neighboring India and China. Recognizing the positive effects and importance of FDI flow, problem arises on investigating the potential factors affecting FDI flows into Nepalese economy. Financial variables are one of the prominent factors that affect the flows of FDI. The financial variables are total transaction in financial market [*TTFM*], broad money supply [M_2], and NEPSE index. This paper investigates the impact of financial variables on FDI flows into Nepal.

Review of Literature

Developing countries like Nepal have been trying to increase the flows of FDI by framing favourable FDI policies and reducing FDI barriers. These efforts made by the developing countries lead to the inflows of FDI that enhances sustainable economic growth in host country (Herzer, et al., 2008). Along these lines, the motivation behind this part is to review the theories of FDI that could give a system to an exact examination of the financial factors that effects on FDI flows into Nepal.

Dunning (1973) developed the eclectic approach of FDI flows based on conceptual framework of OLI advantages. 'O' refers to the possession benefits, that area incorporeal properties and exclusive to the firm a minimize the amount of time. It is helpful to foreign corporations either for higher financial gain or for reducing prices of productions.

'L' refers to location benefits to the foreign corporations. It should be advantageous for the business to make use of these advantages beyond its home nation with a minimum of problem inputs (location specific advantages). In the absence of location-specific benefits, local manufacturing and export would be the only way to reach the international market. Firms may have a variety of motivations for pursuing ownership, acquisition, and location advantages (Dunning, 1973).

'I' refers to internalizing these advantages to foreign firms. It should be additionally useful for the firm to use possession blessings itself and attribute instead of externalizing these possession blessings through licensing or similar contracts with freelance corporations (Dunning, 1973).

Financial environment is an important factor affecting FDI flows into developing countries. Tax rates, openness, investment incentives, volume of broad

money supply, volume of debt, and financial liberalization were found to be the financial factors, and they create positive environment for foreign investors to invest capital in developing countries (Abbas & Mosallamy, 2016; Beck & Chaves, 2012; Khan, Sultan, et al., 2017; Leitao & Faustino, 2011; Phung, 2016).

Nasser and Gomez (2009) examined the effect of financial market development on FDI flows in Latin American countries by using pooled data of 1978 to 2003. Univariate and multivariate pooled regression model was used to analyze the degree of financial market development and its impact on FDI flows into 15 emerging Latin American countries. Development of stock market, trading volume, private credit and the banking system were the major financial variables of this study. This study found that trading volume, private credit and stock market were major significant financial variables which positively affects the inflows of FDI into Latin American countries. The control variables such as inflation, openness, technology gap and infrastructure were also found to have significant effects on FDI flows in study area. Financially strong countries have received the large chunk of FDI and this bridges the gap between scarcity of capital supply in relation to demand for capital in emerging countries.

Sabir, et al. (2019) investigated the impact of financial quality on FDI flows into lower middle, upper middle- and high-income countries by employing panel data from 1996 to 2016. Generalized Method of Moment (GMM) was used to investigate the relationship between financial development and FDI flows. The GMM model confirmed that financial quality of the country positively as well as significantly influenced the FDI flows into all group of countries. The magnitude of effect of control variables—control of corruption, government effectiveness, political stability, regulatory quality, rule of law, and voice and accountability— on FDI flows were greater in developed countries than in developing countries. This study concluded that

financial development (institutional quality) was the important variable which significantly affects the FDI flows in developing countries than in developed countries.

Nasir, et al. (2019) analyzed the relationship between financial development, economic growth and FDI flows into emerging countries of east Asia by employing panel data of 1982 to 2014. This study employed quantitative technique for panel data analysis of Dynamic Ordinary Least Squares method and Fully Modified OLS approach. The result of this study was long run co-integration among the FDI flows, financial development and economic growth in five Asian countries.

Asbullah, et al. (2022) analyzed the determinants of FDI flows based on various literatures. This study employed descriptive analysis and found that tax rate, openness, infrastructure and inflation were the major variables that have effect on FDI flows into countries. Market size, trade openness and infrastructure were positive and significant determinants of FDI flows in developed and developing countries.

This study found that the present availability of empirical literature related to financial variables has failed to arrive at a broad consensus regarding several financial factors affecting FDI flows into Nepal. Thus, this study has used the various financial variables (broad money supply, NEPSE index, and total transaction in financial market) to analyze the relationship between financial factors and flows of FDI. Therefore, this study has tried to fill this gap by capturing the role of financial variables affecting inward inflows of FDI in Nepal.

Method and Data Analysis

This study has applied descriptive, explorative, and inferential research design. The objective—to identify the impact of financial factors on FDI flows into Nepal—was based on inferential research design, and to meet this objective ordinary least square (OLS) method and elasticity coefficient for each parameter was

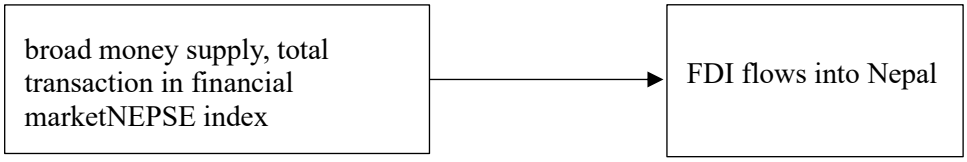
employed because the estimated model does not violate the assumptions of classical normal liner regression model. So, the estimators are unbiased, efficient, BLUE, asymptotically unbiased, consistent and asymptotically efficient. Estimators possess all the desirable finite and large sample properties. So, estimated relationship is not spurious in the sense of Granger & Newbold (1974).

Research framework

The financial variables were identified to examine the relationship between financial factors and FDI flows into Nepal. The variables related in terms of FDI inflows are dependent variables whereas, financial variables are independent. On the basis of location theory of FDI, the expected sign between FDI inflows financial variables is positive.

Figure 3.1.

Schematic Diagram of the Research Framework



Sources of data and data collection tools

The secondary information was collected from Nepal Rastra Bank (NRB) and Central Bureau of Statistics (CBS). NRB provides the data on actual flows of FDI in Nepal (during the period of 1995/96 -2021/22), broad money supply, and inflation rate.

Specification of model

Econometric models were used on the basis of location theory of FDI to investigate the key financial factors affecting FDI flows into Nepal over the period of 1995/96 to

2021/22. The FDI flows began in Nepal since the post-liberalization of the 1990s, but the systematic record of the FDI data was available only since 1995/96. For this reason, this study covered the period of 1995/96-2021/22.

Financial Variables = F (NEPSE index, broad money supply, total transaction in financial market (1)

The model was estimated, using a transformed FDI variable known as FDISTAR. The origin of FDI was changed by constant term "A" to convert the negative term of FDI (i.e., FDISTAR = FDI +A) into positive one. Since all the independent variables were in log scale, this FDISTAR variable was further transformed into a log scale to consistently estimate the coefficient of the regression model. To make the economic interpretation, however, elasticity was estimated in original variable, the FDI, based on estimated coefficient of transformed variable. The only dependent variable (FDI) was transformed into FDISTAR.

FDI =F (financial variables which influence the inward inflows of *FDI*)

$FDI = \alpha + \beta_1 NEPSE\ index + \beta_2 TTFM + \beta_4 M_2 + \mu_i$ (2)

Equation (2) was monotonically transformed into log value

Model 1

$\mathrm{Ln}FDISTAR = \alpha + \beta_1 \mathrm{Ln}NEPSE + \beta_2 \mathrm{Ln}TTFM + \beta_3 \mathrm{Ln}M2 + \mu_i$ (3)

Where,

Ln*FDISTAR* = inflows of *FDI* in Nepal (transformed into logged)

TTFM = total transaction in financial market

M_2 = broad money supply

Ln = natural log

Empirical Results and Discussion

The empirical analysis has been divided into various groups on the basis of the model developed in the methodology section.

Estimated relationship between FDI and financial variables

In this analysis, *FDI* is taken as a dependent variable, and broad money supply (M_2), *TTFM*, and *NEPSE* index are regarded as independent variables. Besides, logarithms of these variables have been taken by using Eviews 9 to fix the data distribution problem for ordinary least squares method (OLS). Firstly, models are estimated, using a transformed FDI variable known as *FDISTAR* that is further transformed in log scale to consistently estimate the coefficient of the regression model because all the independent variables are expressed in a log scale. To make the economic interpretation, however, elasticity is estimated from the original variable (FDI) based on the estimated coefficient of transformed variable.

Descriptive statistics

Because this study has employed descriptive research design, among others, descriptive statistics have been used to describe the characteristics and patterns of variables during the study period. Table 1 presents the summary statistics of the dependent (*FDI*) and the independent variables (*TTFM*, M_2, and *NEPSE* index) used for the study. It shows the number of observations, measures of central tendency, measure of dispersion (standard deviation), minimum and maximum values, skewness, kurtosis, and Jarque-Bera statistics. The descriptive statistics in Table 1 indicates that the data sets of ln*FDI*, ln*M*2, ln*NEPSE*, and ln*TTFM* are positively skewed. Similarly, the coefficients of kurtosis of dependent (*FDI* = 5.71) and independent variables (lnM_2=1.90, ln*NEPSE* = 2.12, and ln*TTFM* = 2.48) indicate the normal distribution of data sets.

Table 1

Descriptive Statistics of Financial Variables

Variables	No	Min.	Max.	Median	Mean	Std. Dev.	Skewness	Kurtosis	*J.B.*
FDI	26	-470	17912.80	961.40	4408.	4821.54	1.59	5.71	12.56
lnM_2	26	11.43	15.94	12.88	14.10	1.08	0.18	1.90	1.49
ln*NEPSE*	26	5.09	7.44	5.96	6.15	0.71	0.25	2.12	1.32
ln*TTFM*	26	4.17	10.36	6.37	6.57	1.69	0.51	2.48	1.27

Note. Calculation based on data of Nepal Rastra Bank, Quarterly Economic Bulletin (2023)

Descriptive statistics for all the variables—*FDI*, lnM_2, ln*NEPSE*, and ln*TTFM*—have positive mean and median values, indicating that average broad money supply is 14.10% with minimum value of 11.43% and maximum of 15.94%. The standard deviation of broad money supply (1.08) shows the variability of broad money supply in Nepal. Similarly, the mean value of *FDI* is 4408 with minimum value of -470 and maximum value of 17912; the variability of *FDI* is represented by value of standard deviation (4821.54). Furthermore, the mean value of ln*NEPSE* and ln*TTFM* are 6.15 and 6.57 with standard deviations of 0.71 and 1.69, respectively. Finally, Table 6.1 also presents the value of Jarque-Bera to show the nature of distribution of the variables included in the model.

Regression analysis

Regression analysis of dependent ln*FDISTAR* on the independent variables lnM_2, ln*NEPSE*, and ln*TTFM* is demonstrated in Model 1.

Model 1

Relationship Between FDI and Financial Factors

$$\ln FDISTAR = -0.27 + 0.81^{***}\ln M_2 + 0.38^{**}\ln TTFM - 0.71^{***}\ln NEPSE$$
$$T \quad (-0.16) \quad (4.55) \quad (2.72) \quad (-3.34)$$
$$\bar{R}^2 = 0.78, \quad F = 23.03, \quad DW = 1.74, \; N = 26$$

Note. Author's estimate of regression equation through monotonically transformed FDI (by change of origin) using the data from Nepal Rastra Bank, Economic Bulletin 2023.
* significant at 10%; ** significant at 5%; *** significant at 1%.

Model 1 shows the relationship between *FDISTAR* and its determinants, such as broad money supply, total transection in financial market, and NEPSE index. The coefficients of all explanatory variables—lnM_2, ln*TTFM*, and ln*NEPSE*—are statistically significant. The coefficient of determination ($\bar{R}^2$ = 0.78) implies 78% of ln*FDISTAR* inflow in Nepal explained by broad money supply, ln*NEPSE* index, and ln*TTFM*. The *F* statistics value (23.03) indicates that the entire model is statistically significant. *DW* statistic value (1.74) confirms no problem of autocorrelation in the analysis. In line with mode of location determinants, financial factors are found to be vital and significant for influencing the level of FDI inflows in Nepal. This result based on the location theory of FDI is consistent with the result of Moore, et al. (1987); Rezin and Sadka (2006); Leitao and Faustino (2011); Beck and Chaves (2012). To make consistent economic interpretation, however, elasticity in original FDI is estimated, based on coefficient of Model 1, as shown in Table 2.

Table 2

Estimated Elasticity Coefficient of Financial Variables

Variables	Coefficients of Ln*FDISTAR*	Elasticity for *FDI*
lnM_2	0.81	0.83
ln*TTFM*	0.38	0.39
ln*NEPSE*	-0.71	-0.74
C	-0.26	

Note. Author's estimation based on Model 6.1.

The elasticity coefficient of M_2 (0.83) implies a 1% increase in money supply leads to 0.83% increase in *FDI* inflows in Nepal. The result of this—that an increase in money supply enhances the economic condition of the nation (liquidity facility) and ultimately raises FDI flows—is consistent with Mottaleb and Kalirajan (2010), Hussain and Kimuli (2012), and Phung (2016).

The coefficient of ln*TTFM* (0.39) indicates that a 1% increase in total transection in financial markets leads to a 0.39% rise in *FDI* inflows, indicating a direct and statistically significant relationship between FDI flows and total transaction in financial market.

The negative and statistically significant elasticity coefficient of ln*NEPSE* (-0.74) appears to put the negative impact of financial market on *FDI* flows into Nepal. The reason may be that most of the manufacturing firms do not seem to be listed in capital market. Thus, this study finds an inverse relationship between *NEPSE* index and foreign capital flows in Nepal.

Diagnostic test result of the variables

Diagnostic test of Model 1 is presented here. To ensure that models are not unspecified, Table 3 presents the result of test for serial correlation and heteroscedasticity.

Table 3

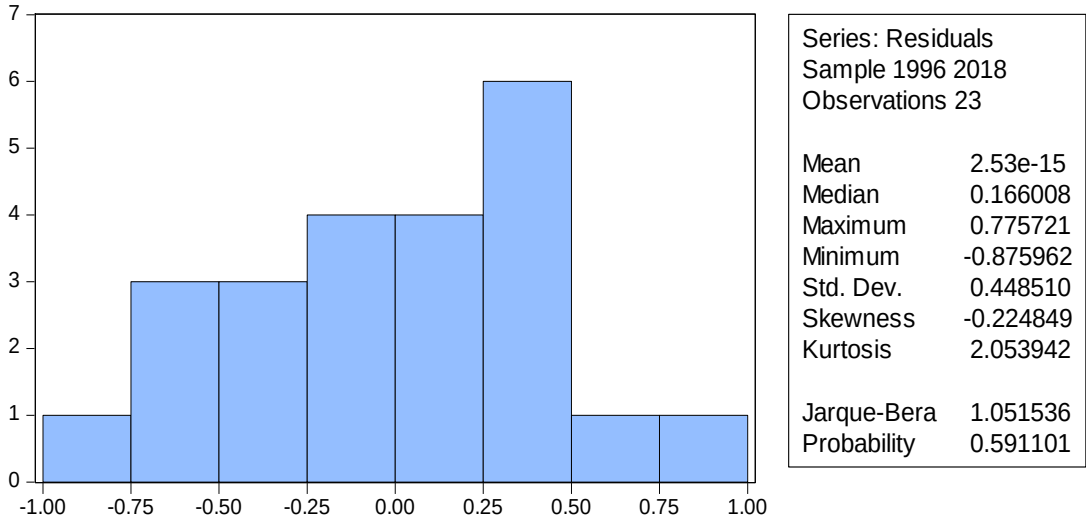
Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.36	Prob. *F* (2,17)	0.70
Obs*R^2	0.93	Prob. χ^2 (2)	0.62
Heteroscedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.33	Prob. *F* (3,19)	0.29
Obs*R^2	4.01	Prob. χ^2 (3)	0.26
Scaled explained SS	1.44	Prob. χ^2 (3)	0.69

Note. Calculation based on Model 1.

Table 3 depicts the result of test for serial correlation and heteroscedasticity of Model 6.1. This result indicates that the model is well specified, that the estimated regression model performs well, and that there is no serial correlation problem in the model because Breusch-Godfrey serial correlation LM test confirms no evidence of serial correlation in the model. Similarly, Breusch-Pagan-Godfrey of heteroscedasticity test also confirms no problem of heteroscedasticity.

Figure 1

Plot of Residual Terms (Normality test)



Besides, the residual terms in the model are normally distributed and their normality is tested in Figure 1. The Jarque-Bera test statistics (1.05) implies that there is evidence of normally distributed residual terms; hence, the regression model fulfills the normality assumption of OLS. All the above results, therefore, indicate that financial factors turn out to put the positive impact on FDI flows. The reason is obvious: all coefficients of financial variables are statistically significant, the model involves no problem of serial correlation, there is no problem of heteroscedasticity, and the model fulfills the requirement for normality.

Conclusion and Policy Implication

The major finding of this study was financial factors (NEPSE index, broad money supply and total transection in financial market) significantly affecting FDI flows into Nepal. However, this study's finding of a negative relationship between NEPSE index and FDI flows into Nepal contradicts those of the previous literatures. Therefore, financial development within the economy is one of the major components helping to flows of FDI in a developing country like Nepal. Policy makers need to make sincere efforts to making the financial variables more effective as well as well-developed to raise the FDI flows into Nepal.

Nepal still has received a minimum share in the global FDI. Therefore, more liberalization of investment regulations is needed. It also emphasizes the importance of efficient and appropriate financial sectors to raise the FDI flows into Nepal.

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