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Impact of Double Taxation Avoidance Agreements on Foreign Direct Investment in Nepal

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Abstract

Developing countries like Nepal enter the Double Taxation Avoidance (DTA) Treaties agreements to increase inflow of Foreign Direct Investment. Since DTA avoid simultaneous tax payments by a taxpayer for same income or assets in multiple jurisdictions and be instrumental in promoting cross-border investments and capital transfer among DTA signing countries. However, empirical studies have shown mixed results. This study attempts to assess the impact of Double Taxation Avoidance (DTA) Treaties on inflow of Foreign Direct Investments (FDIs) in Nepal. This study uses a comprehensive panel database containing annual flow of FDI from 89 countries for the period of 1990-2016 as well as other factors that might affect FDI flow into the country. We used pooled OLS and fixed effect methods. The study finds that singing DTA agreement have had small but positive impact on the inflow of FDI. Specifically, Nepal receives, on average, between 91.90 to 216.54 million more FDI per country per year from countries with DTA agreement compared to countries without such agreement.

Keywords: *Double taxation agreements, Foreign direct investment,*

Introduction

Countries sign Double Taxation Avoidance Agreement (DTA) to promote bilateral economic activities by eliminating double taxation across jurisdiction. Often developing countries uses DTA as an important policy tool to increase inflow of Foreign Direct Investment (FDI). Given the importance given to signing DTA, this study examines the impact of DTA on the inflow of Foreign Direct Investments (FDIs) in Nepal.

DTA is a bilateral or multilateral tax treaty that primarily intends to avoid the situation whereby taxes are collected for same income or assets simultaneously in two different jurisdictions. Hence, DTA removes concerns of investors' who are operating across countries for having to pay the taxes twice—in host countries where the income is generated and in home country where the investor is registered. This facilitates cross-border investments and capital transfer among DTA signing countries.

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DTA negotiated between two countries aims to avoiding simultaneous tax payments by a taxpayer in multiple jurisdictions. This sends the credible signal to investor about stability, fairness, and acquire international recognition, hence provides incentives for investors to make cross-border investment. Developing countries attached great importance to such foreign direct investment (FDI) as they provide much needed capital to the receiving countries, necessary for economic development and growth. Additionally, FDI has a positive spill-over effect in the economy through job creation and transfer of technology.

Nepal has entered DTA agreements with 11 countries, namely India, Mauritius, Sri Lanka, China, South Korea, Thailand, Norway, Qatar, Austria, Pakistan, and Bangladesh. The Government seek to expand bilateral tax treaties with countries currently investing or interested to invest in the country and is under treaty negotiations with other countries. Nepal has received FDI-regularly and intermittently from 89 countries during the period 1990-2015 (Department of Industries, 2018). India and China are the largest sources of FDI and contribute to more than two-third of the total FDI inflows into the country. Other major FDI source country for Nepal are Republic of Korea, United States, United Kingdom and Mauritius. FDI has substantially increased in recent years from DTA signing countries India, China and South Korea. However, investment flow from other DTA countries have either remained unchanged or, in some cases, even declined. On the other hand, FDI from non-DTA countries has also on rise. This is a perplexing scenario which leads us to question efficacy of DTA on attracting FDI.

However, the scope of this paper excludes discussion on the legal aspect of the DTA and the controversy surrounding the 'right' model of DTA agreements for developing countries (Lang et al. 2010). Today, most tax treaties are modelled after either the United Nations Model Double Taxation Convention between Developed and Developing Countries (United Nations Model Convention) or the Organisation for Economic Co-operation and Development Model Tax Convention on Income and on Capital (OECD Model). The OECD model was originally intended for treaties between developed countries whereas the UN model was explicitly designed for treaties between developed and developing countries. However, increasingly most clauses of recent bilateral tax treaties follow the OECD model (OECD 2019). Hearson (2021) observes that increasing adoption of OECD model of DTA by developing countries benefits multinational countries based on developed countries at the expense of developing countries.

The report also does not include the issue arising from sophisticated nature of modern DTA agreements that leads an intricate web of bilateral agreements among many countries which is used to evade tax, also popularly known as treaty shopping. These issues are relevant for effectiveness of DTA from developing countries perspective. For example, Petkova1 et al. (2019), Hong (2018) Arel-Bundock (2017) and Weyzig (2013) takes network approach to assess influence of treaty shopping behaviour on FDI. Petkova1 et al. (2019) find that only relevant DTA can increase the investment inflow by as much as 18 percent.

The remainder of the paper is structured as follows: Section 2 introduces the concept of DTA in more detail and presents a brief country-context for Nepal. Section 3 contains the detail status of FDI and other economic relations that Nepal share with DTA signing countries In the section 4, related literature are reviewed and study methodology and data is described. Section 5 presents the findings followed by final section that concludes the study and explains its policy significance.

About Double Taxation Avoidance (DTA)

League of Nations' international treaty model developed in the 1920s and 1930s marks the beginning of multilateral tax agreements in the modern times (Picciotto, 1992). The initiation comes from multinational companies who were worried about the issue of double taxation levied on income from cross-border businesses.

There are over 2600 double tax treaties in effect among the countries around the world among which approximately 500 are signed between developed economies, 800 among developing countries and rest are singed between developed and developing countries (Braun & Zagler 2014).

The international double taxation occurs when two countries impose taxes on a taxpayer in the same period for same income or capital transactions. The situation of double taxation arises when there is the 'conflict' between two countries over taxation rights. The source country i.e., where the income was earned, has right to levied because it is earned within its borders. On the other hand, the residence country where the income earner resides is entitled to tax income because it is earned by one of its residents. Hence, the double taxation treaties stipulate who would prevail in case such conflict arises.

DTA also creates enabling environment to attract FDIs by sending the credible signal to investor about stability, fairness, and acquire international recognition. Additionally, a spill-over effect of DTA would be transfer of technology, employment generation, capital formation in receiving country via FDI inflow.

Avi-Yonah (2007) observes that "treaties allocate to the source country the primary right to tax 'active' income, the profits from activities in which the recipient of the income plays an active role, such as a branch or subsidiary; in contrast, they grant the residence country the primary right to tax 'passive' income, which the recipient earns without being actively involved, such as royalties for the use of its intellectual property".

There are both conventional and critical perspective over why developing countries should sign bilateral tax treaties. According to conventional thought, bilateral tax treaties like DTA alleviate double taxation, thus facilitates the reallocation of capital from developed countries into developing countries.

While some argue that recent changes in the norms and terms of bilateral tax treaties favours developing countries, many believe developing countries are at disadvantage as they have to bear the burden of double tax relief that DTA imposes (Dagen, 2000; Reurink & Garcia-Bernardo, 2020; Neumayer & Spess, 2005). This is because there

is asymmetric relation between the developed and developing countries. While capital flows predominately from developed to developing economies, income flows in reverse direction.

Nevertheless, DTA signing trends globally has changed noticeably in recent year. While during 1960s and 1970s, developed or high-income countries used to be primarily signatories of DTA agreements, developing countries were largely absent from DTA domain. The agreement with developing countries were taken as not necessary or economically beneficial as trade between global north and south was very limited.

However, the trend has change since 1990s with the expansion of globalization wave reaches developing countries in Asia, Africa, and Latin America. The adoption of liberal economic policy worldwide in late-1980s and 1990s has increased the cross-border trade and investment including in developing countries. This has necessitated inclusion of low-income and developing countries the network of DTA agreement.

The critical perspective, however, suggest that tax treaties are not necessary to avoid double tax because the residence countries can do so unilaterally. It also refers to the evidence that finds no relation between DTA and inflow of foreign investment (Baker 2014). Similarly, others have argued that 'given the purpose and the context for the development, such agreements represent an important threat to sustaining financing for development and social infrastructures over time' (LDADD, 2013).

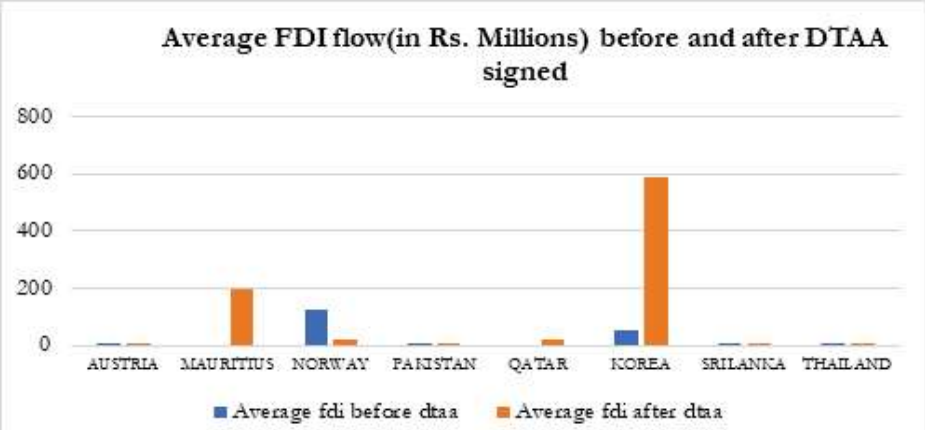
Nepal: Double Taxation Avoidance (DTA) and Foreign Direct Investment (FDI)

Nepal has signed DTA with 11 countries (ICTD Tax Treaties Portal via Hearson et al. 2021). The first country to sign DTA with Nepal was India in 1987. After Nepal adopted the liberalized economic policies during early 1990s, the country entered DTA with other countries mostly in Europe and Asia. Apart from India, other South Asian countries like Pakistan and Sri Lanka has already singed DTA and the similar agreement with Bangladesh is in pipeline. Beside the bilateral DTA signed by individual countries, the region also has a multilateral DTA agreement ratified by all the members of SAARC. Nepal has signed bilateral DTA with four (Bangladesh, India, Pakistan, and Sri Lanka) out of seven other members of SAARC. Likewise, in the period 1990-2016, Nepal has received FDI from 89 countries, including from DTA signing countries, on regular and intermittent basis. However, there has not been any formal study that examines the relation between DTAA and FDI in Nepal.

Nepal has received FDI from 89 countries and territories since 1990s. However, frequency of FDI flow from these countries varies considerably. Only three countries, India, China, and the United States, have provided FDI for entire 27-years period. Similarly, Japan, United Kingdom, Republic of Korea, Germany, France, and Switzerland have FDI flow for at least 20 years. Nepal has received FDI at an average annual rate of nearly NRs. 290 million during 1990-2016 period. In the past 10 years, however, the average FDI flow has increased to nearly 420 million per annum.

India is the largest FDI partner for Nepal. It has invested over Rs. 80.51 billion which constitute 42 percent of the total FDI into Nepal in past 27 years. Similarly, China, including Hong Kong, has invested nearly Rs. 53.79 billion and is second largest FDI source country for Nepal. They are followed by Republic of Korea (4.7%), British Virgin Island (4.1%) and the United States (3.7%). Barring India and China, majority of the top source countries have not signed DTA with Nepal. To see how FDI flow changes after signing a DTA, we investigated the total FDI flow from eight countries before and after the DTA was signed. We have excluded India and China from this analysis for two reasons. First, with India, DTA was signed before the study period began i.e., on 1990. Secondly, both India and China are providing huge volume of FDI continuously over the period. As we can observe from the figure 2, only two countries—Mauritius and Republic of Korea—has shown significant rise in FDI.

Figure 1: Average FDI Flow before and after Signing DTA

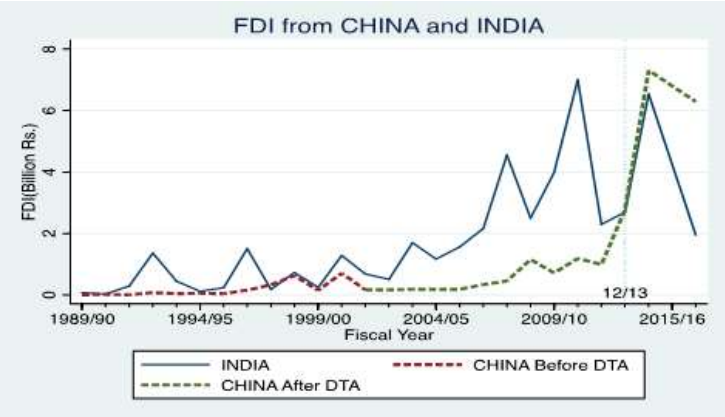


Source: Author estimation based on Department of Industry data

On the other hand, countries like Austria, Pakistan, Qatar, Sri Lanka has shown no or very little increase in FDI after signing DTA. Furthermore, Norway and Thailand have decreased their total FDI into the country following the signing the DTA. This pattern suggests a very interesting and important relation between DTA and FDI that, the actual effect is related to other factors and economic relations between two countries. We therefore need to make careful assessment of country specific factors to determine the DTA impact of FDI from each country.

India and China are Nepal's biggest FDI partners. Nepal has singed DTA with both countries. Nepal has first signed DTA with India on January 18, 1987, and later a revised treaty was signed in 2011. DTA between Nepal and China was singed on May 14, 2001, and come into effect on July 17, 2002. Nepal has received FDI from these two countries in every year since 1990. The United States in only the third country to have done so.

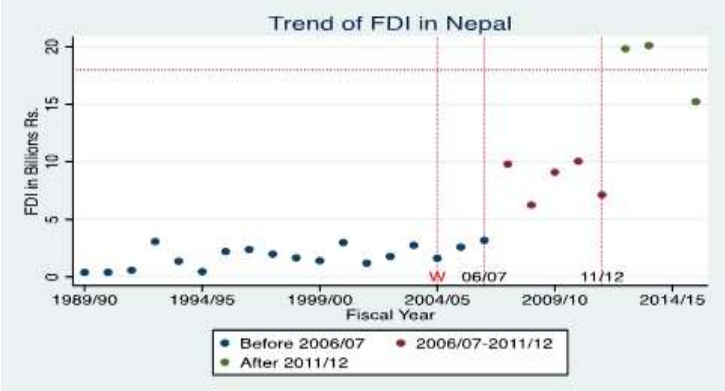
Figure 2 Total FDI from India and China



Source: Author estimation based on Department of Industry data

The other trend observable is that India's FDI flow has shown greater volatility than that of China. Similarly, India has increased its FDI flow immediately after the peace accord in 2005-06 whereas China seems to have waited till the constituent promulgation during 2012-13. We have introduced Chindia variable in our study to tackle China and India factor in our analysis. In addition to DTA, other factors like political situation and other economic events in the country influence FDI inflow. We consider following three factors, a) signing of WTO in 2004-05, b) Conclusion of the Peace Process in 2006-07 and (c) Constituent Assemble Election in 2011-12. We have plotted the total FDI trend from 1989-90 to 2015-16 period and marked the above-mentioned events in a single graph below. Although, over the period of 27 years, FDI inflow has shown upward trend overall, as we can observe, the rate of growth various varies drastically on different time period.

Figure 3 Total in Nepal from 1990 to 2016



Source: Author estimation based on Department of Industry data

The period before 2006-07 is characterized by very low and volatile growth. Although overall FDI growth was positive the rate of change was less than 5 percent. The rate of growth took sharp change after the conclusion of peace process and signing of peace accord. Similarly, promulgation of constitutions in 2012-13 have skyrocketed the FDI growth to an unprecedented level. Hence, these two major political events that has positively impacted the economic development in the country by facilitating much needed FDI into the country.

Review of Literature

A small body of researchers have tried to answer this question with several variations. The results they got so far has been mixed. The studies show almost no relations between DTA and FDI Coupé, Orlova, and Skiba's (2009) and Baker (2014) show the increased number of DTAA signed has not actually resulted in increase in FDI flow while measuring as percentage of GDP. Similarly, the evidence presented in Sauvant & Sachs (2009) collection of papers also showed minimum or no effect of DTA over investment flow. Mutava (2019) reviews tax treaty practices and policy framework in Africa and finds that lack of negotiation capacity and treaty policy framework as major reason for lack of intended outcome of DTA. Further Narotzky et al. (2021) shows that aggressive treaty framework used by multinational is harmful for African countries. A recent meta-study by Brada (2021) 'finds robust evidence that effect of international investment agreements is so small as to be considered zero.'

However, studies like Barthel et al. (2010); Blonigen and Davies (2008, 2004); Coupé et al. (2009); Davies (2004);; Neumayer (2005) found positive impacts of bilateral treaties on investment flows. For example, Swedish firms 0.7% more likely to establish a new affiliate if there is a treaty (Davies, Norbäck & Tekin-Koru, 2009). Similarly, Egger and Merlo (2012) find limited but positive impact of tax treaties on investment i.e., initially tax treaties increase the investment but does not impact the subsequent increase in volume of investment. Similarly, Murthy and Bhasin (2013) examining the impact of bilateral tax treaties on foreign direct investment finds treaties impacting positively to increase the amount of FDI in India. Their study also found that India received more FDI from a particular country as the treaty with the country aged.

Research Methodology

This analysis combines an econometrics analysis of the effect of double taxation avoidance treaty on Nepal's Foreign Direct Investment inflow, according to the principles outlined below. Of course, the inflow of FDI is affected by many factors other than DTA. Our method will carefully control for the exogenous factors affecting FDI and measure independently the impact of DTA. Before we discussed the methodology, next section briefly summarizes the data sources and research question.

Investing in foreign countries is the function of both pull and push factors. Pull factors are the indices of investment attractiveness of destination country whereas push

factors are the investing capacity and laws of the source countries. We have listed most of the factors affecting FDI in a country using various literatures to present in the main theoretical framework of our model which is expressed as follows:

As Nepal is less affected by global economic vibes and receives tiny portion of international investment flow, we assume that push factors not so predominant predictors. We have considered following different specifications.

Data and Sources

The paper uses secondary data published by the different agencies of Government of Nepal. The dependent variable FDI is the commitment of investment of respective countries for the particular year. We took FDI data from Department of Industry, a nodal government department directly concerned with FDI inflow. DTA act as key explanatory variable that we created using the information from Inland Revenue Department, Nepal. As an indicator variable DTA takes the value of one for a country for the periods post DTA treaty with Nepal becomes effective. The value is zero for the countries that have not signed DTA with Nepal.

The Database contains annual flow of FDI from 89 countries for the period of 1990-2016. There are 667 observations in the dataset. It is important to note that FDI flow is highly irregular from the partner countries. That is, very few countries have had FDI flow to Nepal for whole 27 years' period under study. In fact, only three countries out of 89 have FDI are received annually since 1990. There are 9 countries with FDI for at least 20 periods, 6 countries with FDI for at least 15 periods, 11 countries with 10 periods and 15 countries with FDI for at least 5 periods. More than half of the countries (46) have FDI flow for only one period.

This creates several missing values in our dependent variable and an unbalanced panel. To tackle the issue of missing FDI data, we generated zero value for the years FDI was not received from a particular country.

Ministry of Finance sourced dataset include the information for the other independent and control variables control variables. The paper also uses World Development Indicators (2016) for real GDP per capita at constant 2011 national prices and total population and human capital indices; Penn World Table 7.1 for openness indices; total area, and trade ratio; United Nations Conference on Trade and Development stat (2016) for inward and outward foreign direct investment.

Econometrics Models and Specifications

Pooled OLS Model

Econometric analysis of relationship between FDI and DTA in this study begins with the pooled model by simply pooling all the observations together. We have estimated coefficients using two variants of pooled model. In the first variant, the observation is

used as we have obtained them from the record of Department of Industry (DoI). In this formulation, we have ignored the panel nature of data. The specification is as follows:

Two more specifications with control variables 'Chindia' and 'Saarc' have been built in this model. The first specification introduces control variable 'Chindia' for controlling China and India factor in predicting the FDI inflow in Nepal. China and India are not only the neighboring countries of Nepal, but they have also been major source of foreign investment, foreign trade, tourist visit and foreign trade in Nepal. India and China channel more than 80 percent of total FDI inflow in Nepal in average if we consider the data from the last five years. Also, the trend and size of FDI from these two countries are quite different than from the other countries. Therefore, to control for China and India bias in the regression model, we used Chindia dummy which takes the value of one if the observation is for China or India and zero otherwise. The third specification is built by adding the 'SAARC' control where the value of variables is one if the countries are member the of SAARC and zero in other cases. In the second variation we have created a balance panel assuming FDI inflow zero for the missing values.

Fixed Effect Model

Fixed effect method estimates the relationship between response and predictors controlling the time invariant characteristics of panel variable. This method each country gets one intercept where the average characteristics of individual source countries are dumped in thereby controlling the effect of idiosyncrasies of countries in the regression model.

where, C_is are the dummies for countries. α_is are the fixed effect capturing all behavioral differences between countries. Theses coefficients control country-specific time-invariant characteristics. The *i* stands for countries. Each country gets one estimate for α whereas other coefficients ($\beta_1 - \beta_{12}$) are same.

Results and Discussions

Pooled OLS Model:

Table 1 presents the results from pooled OLS estimation using unbalance panel data. We have used three specifications and all of them show significant relationship between FDI and DTA. The estimated coefficient of DTA ranges between 0.58 to 1.3 and all coefficients are positive. The positive value indicates higher FDI inflow from DTA signing countries in comparison to from non-DTA countries. The result suggests that FDI inflow from DTA countries are 58 to 130 percent higher compared to the non-DTA countries.

Table 1: Results of Data Analysis

Dependent Variable: Log FDI	**Specifications**		
	(1)	**(2)**	**(3)**
DTA	1.30***	0.55***	0.58***
Control Variables:			
Log GNI per capita	2.66***	2.66***	2.68***
Population growth	0.84***	0.77***	0.78***
Inflation	-0.00	-0.00	-0.00
Openness	0.02*	0.021	0.02
Log Minimum-wage	-2.00**	-2.00**	-2.02**
Distance	0.00	0.00***	0.00***
Civil war	-0.60***	-0.59**	-0.59**
WTO	-0.12	-0.05	-0.06
Bilateral Investment Treaties	0.62***	0.35*	0.37**
Diplomacy	0.62***	0.49***	0.51***
FDI2GDP	38.23***	39.74***	39.76***
Global Financial Crisis	-0.143	-0.071	-0.07
Chindia		Yes	Yes
SAARC			Yes
Adjusted R Square	0.1778	0.2746	0.2742
No. of observations	658		658
*** p<0.01, ** p<0.05, * p<0.1			658

Source: Author's Calculation

Other factors explaining inflow of FDI are Gross National Income per capita, population growth, minimum wage, bilateral investment treaties, diplomatic presence, and stock of FDI. GNI per capita has significant impact in predicting FDI. GNI together with population growth represents the prospect of demand growth in domestic market. Hence, both the factors show positive and statistically significant results in all specifications. For example, the results show one percent increase in GNI per capital leads to 2.66 to 2.68 percentage growth in FDI inflow depending on the specifications. Similarly, one percent population growth contributes 0.78 to 0.84 percent growth to FDI inflow. BIT is another influential variable that impacts FDI. Other things remaining constant, inward FDI is higher from countries signing the bilateral investment treaties.

Similarly, the period of civil war attracts less FDI than during peace time. The result is statistically significant for all the specification. Global financial crisis does not have statistically significant impact on FDI to Nepal.

There are other variables like diplomacy and FDI2GDP which have positive and significant impact on FDI inflow. Diplomacy refers to the establishment of resident embassy or consular unit. FDI2GDP is the share of FDI in total GDP. The positive coefficient suggests higher the share of FDI in GDP, more likely flow of new FDI to the country. The different specifications control for Chindia and SAARC countries as depicted in the table.

Table 2: Results of Data Analysis

Dependent Variable: FDI	Specifications		
	(1)	(2)	(3)
DTA	216.54***	96.88***	91.90***
Control Variables:			
GNI per capita	0.01***	0.01***	0.01***
Population growth	60.43**	56.28***	56.02**
Inflation	-0.48	-0.78	-0.80
Openness	-0.09	-0.24	-0.25
Minimum-wage	-0.04**	-0.03**	-0.03**
Distance	0.00	0.00*	0.00***
Civil war	19.13	21.17	21.26
WTO	30.87	30.16	30.23
Bilateral Investment Treaties	154.96***	94.84***	95.00**
Diplomacy	38.04***	21.26*	19.57*
FDI2GDP	1242.57	1414.73	1413.29
Global Financial Crisis	37.59*	40.47*	40.40*
Chindia		Yes	Yes
SAARC			Yes
Adjusted R Square	0.1194	0.2348	0.2350
No. of observations	2341	2341	2341
*** p<0.01, ** p<0.05, * p<0.1			

Source: Author's Calculation

Table 2 presents the result drawn from using balance panel. Second variant of pooled OLS model shows almost the same result as previous variant with unbalanced panel where the data are put as received from the original source. The findings show that FDI inflow from DTA countries is 91.90 to 216.54 million higher in comparison to non-DTA countries. The results are statistically significant for all three specifications. Other variables such as GNI per capita, population growth, minimum wage, bilateral investment treaties, diplomatic presence, and global financial crisis also have statistically significant impact on attracting FDI in Nepal.

Fixed Effect Model:

Pooled OLS Model doesn't consider the panel nature of data. Therefore, the variation in FDI inflow due to country specific characteristics can't dealt with properly. The study conducted Hausman test and found that fixed effect estimator is appropriate. The equation for fixed effect model is provided below.

The results from fixed effect models are presented in table 3. This model confirms the result produced by Pooled OLS model indicating positive and significant effect of DTA signing countries on FDI inflow in Nepal.

Table 3: Results of Data Analysis

Dependent Variable:	**FDI**
DTA	96.93***
Control Variables:	
GNI per capita	0.01***
Population growth	56.02**
Inflation	-0.89
Openness	-0.28
Minimum-wage	-0.03**
Distance	
Civil war	21.27
WTO	30.71
Bilateral Investment Treaties	
Diplomacy	
FDI2GDP	1559.47*
Global Financial Crisis	41.21*
R Square:	
within	0.0450
between	0.2549
overall	0.0710
No. of observations	2341
*** p<0.01, ** p<0.05, * p<0.1	

Source: Author's Calculation

The table shows that GNI per capita population growth, minimum wage, stock of FDI and Global Financial Crisis have significant statistical evidence to impact FDI in Nepal. The positive coefficient of Global Financial Crisis suggesting higher FDI flow than that

of normal period may seem less convincing at first glance. However, no visible effect of GFC could make Nepal more attractive to FDI during GFC period.

Conclusion

The study investigates the impact of double taxation avoidance treaties on inward foreign direct investment into Nepal and finds that signing DTA has been beneficial for Nepal in terms of attracting FDI. This study finds that Nepal receives Rs. 91.9 million up to 216.54 million per country per year more FDI from the countries with DTA agreement compared to non-DTA countries.

However, the real question is whether the benefits outweigh the costs. DTA has both tax treaties have (tax) costs and (tax/non-tax) benefits. In general, the evidence suggests that increased FDI a major benefit of the tax treaties. However, the result may not apply to all the countries all the time. Hence, caution should be placed on assessing the cost-benefits of signing DTA. Nepal is receiving benefits of DTA with few countries, while losing significant revenue from the others. Based on these findings, we propose few policy recommendations.

Nepal should review DTA agreement signed with Thailand, Norway Qatar, Austria, Pakistan, and Sri Lanka. Although detailed case study for individual countries were out of scope of this study, these countries shows almost no or minimum impact over FDI. Similarly, the economic relations were also very minimal. For example, with Thailand and Qatar, the focus of trade is airlines services. Since the DTA provides tax rebate on the ticket sales for the airlines from these countries, Nepal is losing much of the revenue without getting compensating benefits. Similarly, FDI with Norway has gone down after signing DTA whereas that with Pakistan, Austria, and Sri Lanka, both FDI and trade as well as other economic relation is negligible.

The variation of FDI flow within DTA signed countries are wide. It is, therefore, advisable that IRD monitors the real use of DTA agreements by businesses from respective countries. A periodic data collection on the revenue loss and other tax benefits should be done so that IRD can keep track of usage of DTA.

The government should also invest in other policy measures to attract FDI and promote investor confidence. DTAs are important policy tool but not the only available to attract FDI. This study has shown that bilateral investment treaties are important explainer of inflow of FDI in the country. However, special attention should be paid to make sure DTA and other bilateral treaties like BIT should be in harmony in their terms and conditions. In sum, Nepal should revisit the bilateral tax treaty objectives and policies. It needs to reassess the existing DTAs, revoke and renegotiate, and pursue new treaties if necessary.

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Annex - A

Variables	Description
Market Size	GDP per capita at market price, remittance per head
Growth Prospects	Economic growth rate, population growth rate
Stability	Inflation rate, Exchange rate
Optimism	NEPSE index
Openness	Openness index. (Total trade/GDP market price)
Labour Cost and Productivity	Minimum wages, Human Capital Index, SLC appeared population, adult literacy rate
Political Risk	Political Stability Index
Infrastructure	Actual Capital Expenditure of Government of Nepal, Road Kilometre per capita, telephone line per capita, per capita electricity generation etc.
Agglomeration Effect	Total FDI of previous Year
Environment Sensitivity Index	Environment Protection Index; Treaty Ratification
Economic Capacity of source country	Real GDP and Outward FDI of source country
Openness index of source country	Openness index. (Total trade/GDP market price)
Other relations with source country	Bilateral investment treaty, Diplomatic presence, Distance, Direct flight,
Control Variables	WTO, Civil War, Region of Source Countries, Income group of source countries, SAARC membership of source countries, Great Financial Crisis (GFC)

Annex - B

Description of Variables Used in the Model

Civilwar: civilwar takes the value one for the year of insurgency in Nepal and zero otherwise. It has negative impact on fdi inflow bit: Nepal has signed Investment Protection and Promotion Agreement (BIPPA) with five countries namely France, Germany, UK, Mauritius, Finland and India so far. bit in a dummy variable which takes the value one for the above five countries and zero for the rest of the countries.

Diplomacy: diplomacy is an indicator variable for having diplomatic presence of Nepal in the investing countries.

Distance: Distance between Kathmandu and capital city of respective countries in kilometre. Distance generally affects fdi in negative way.

DTA: This is the main independent variable which takes the value 1 for the period after the dta has been signed and 0 in other cases. The value is always zero for the countries Nepal is not signatory of DTAA with. It could be always one for the country if DTAA has been signed before 2046/47 BS. For, instant the case of India.

FDI: This variable is the amount in million rupees of foreign direct investment committed at time of registering the business in Department of Industry. It does however not include subsequent foreign investment in the existing business.

Fdi2gdp: Fdi2gdp is the percentage of total FDI inflow to GDP at market price in the preceding year. This variable is the indication of overall environment for FDI and corrects auto regression to some extent.

GFC: This variables for the year representing Great Financial Crisis from 2008 to 2010.

GNIPC: Gross National Income per capita derived from PWT9 table is an indicator of internal market. gnipc is the indication of average money at the hand of the people and expected to have positive relationship with FDI.

Inflation: This variable represents the number published every year by NRB, central bank of Nepal. The direction of influence of inflation on FDI is not always unidirectional. Inflation is expected to affect FDI positively because investors receive extra profit by increased price of the goods. However, the relationship is not positive for export-oriented industries. Relationship is negative also because high inflation is the sign of instability in the economy, state not considered conducive for foreign investment.

Minwage: The practice of setting minimum wage in Nepal goes through tripartite negotiation. Labour Act, 1992 has provisioned a Minimum Remuneration Fixation Committee constituting equal number of representatives from workers, employers, and the government. *minwage* represents the wages fixed by the committee in different time.

Openness: Openness is percentage of total trade import plus export divided by total GDP in market price. This index of any economy is an indication of the extent to which the

economy is integrated to world market. More openness generally means better condition for *fdi* inflow. However, openness brings competition with world market resulting in disadvantage for business set up for serving domestic market.

Population growth: population growth rate of Nepal as published from census data. Population growth is one of the factors considered by investor for putting their money in any venture in the foreign country. Population growth is important mostly for the business that produce the goods or serviced consumed in domestic market by large section of population.

RGDP: This is Real GDP per capita of source countries. Theoretically it should have positive association with FDI outflow from that country.