Impact of Foreign Capital Inflows on Tax Collection: A Case Study of Pakistan

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Abstract

This paper attempts to examine the impact of foreign direct investment, remittances, foreign aid and trade openness (FCI's) on tax revenue in Pakistan for the period 1975-2012. After data collection different econometric techniques like unit root test of ADF, Co integration and Error correction mechanism have been applied. The result shows that positive relationship exist between Remittances, Trade and tax revenue and negative relationship hold between FDI and total tax revenue in Pakistan during the study period.
Key words: Foreign Capital inflows; tax revenue; Pakistan

Introduction

During the past few decades, there has been a substantial increase of foreign capital inflows in developing countries. It is generally argued by many researchers that foreign capital inflows facilitate the development process in developing countries. Many developing countries have reaped many rewards from foreign capital inflows in terms of raising investment and economic growth. Large capital inflows in the forms of FDI, foreign aid, trade openness, ODA and remittances result in a buildup of foreign exchange reserves.

Taxes are main source of financing for government of Pakistan. The main categories of taxes include both direct and indirect taxes. Wealth tax, income tax, Properties, and corporate profits tax come under the category of Direct taxes. General sales taxes, excise tax, customs and import duties are the main components of indirect taxes. During Fiscal Year 2012-13 Federal Board of Revenue has collected 1,939 billion rupees with an additional amount of 57 billion rupees over the collection of last year. In 1990 to 2013 the share of direct taxes in total taxes has increased from 15% to 38 %. During Fiscal Year 2012-13 income tax component was major contributor in total direct taxes with the share of around 97%. Direct taxes contributed 739.7 billion rupees. During Fiscal Year 2012-13 the growth in the collection of sales tax has been 4.5% and customs 10.2%. During 1980 to 2008 foreign capital inflows are showing increasing trend in Pakistan. Remittances share in foreign inflows decreased from 16% in 1980 to 12% in 2008 and FDI share increased from 0.26% to 10%. In 2011, Pakistan ranks fifth largest aid recipient out of 139 countries where official development assistance received. According to World development report, Pakistan has become the fifth largest remittance recipient country in South Asia, witnessing a growth of 25.8% in 2011. Foreign capital inflows are growing at higher rate than growth in tax collection. At theoretical level there seems a relationship between Foreign Capital Inflows and tax collection. Thus, it requires an empirical investigation for the relationship between foreign capital inflows and tax revenue in Pakistan.

One of the most fundamental challenges for governments of Pakistan is to generate sufficient revenue to finance public expenditure. Large fiscal deficit have narrowed the vital investment in both human resources and basic infrastructure that are necessary part of any development strategy. Yet, tax collection remains a key challenge for most of MDG's. The relationship between Foreign Capital inflows and tax revenue is therefore an issue of great

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practical importance. Only few studies have investigated the impact of foreign inflows on government's fiscal behavior of Pakistan. Butt and Javid (2013) analyzed the effect of foreign aid on government spending and revenue. Mahmood and chaudary (2013) examined the relationship between FDI, GDP and tax revenue using time series data for the period 1972-2010. But the aggregate analysis of foreign capital inflows with tax revenue does not exist in case of Pakistan. This study attempts to fill this knowledge gap in existing literature. Findings of this paper would have important policy implications in pursuing effective economic policies and institutional setup to attract more FCI so that more revenue could be generated to meet the developmental challenges of the economy. Thus, the purpose of this study is to empirically examine the impact of foreign capital inflows on tax collection in Pakistan using time series data for the period 1975-2012.

The paper is organized as follows. Section 2 reviews some literature on the issue. Section 3 presents theoretical framework, section 4 gives data description and methodology, in Section 5 results are discussed and in section 5 conclusion is given.

Literature review

During the past few decades, there has been a substantial increase in foreign capital inflows in developing countries. It is generally argued by many researchers that foreign capital inflows facilitate the development process in developing countries. However, the growth enhancing effect of Foreign Capital Inflows varies from country to country. This section reviews some literature on revenue implication of foreign capital inflows.

The impact of foreign aid including both grants and loans on government expenditure, revenue and borrowing has been analyzed in Ethiopia. The study employed the data for the period of 1964 to 2005 and found that foreign loan leads to more increase in government investment rather than grants. Grants and loans reduce both domestic borrowing and domestic tax revenue in Ethiopia (Martins, 2007). Relationship between foreign aid and domestic tax revenue in 118 developing countries for the period 1980-2009 showed that there is negative relationship between net Official Development Assistance and domestic tax revenues. Foreign aid has different effect on each tax components i.e. sales, trade, property and income taxes. The paper further revealed that ODA have positive relationship with trade taxes while negative with income tax revenues. Whether foreign aid contributes in tax revenue or not depend on many factors like on institution quality, type of foreign aid i.e. loans, ODA, grants and structure of tax system of recipient economy. Paper further confirmed the hypothesis of negative relationship between ODA and tax revenue to GDP ratio (Dora, Crivelli, Gupta, & Muthoora, 2013).

Bhattarai (2007) discussed the revenue and expenditure behavior of the Nepalese government during the period 1975-2002. Co integration analysis showed that in long run aid increase government revenues and on all types of expenditures but it does not decrease domestic tax collection. Another paper examined the revenue implication of foreign aid in almost 100 countries and suggested that grants reduce domestic tax collection (Clements, Gupta, Pivovarsky & Tiongson, 2004).

Financial inflows like remittances are important source of revenue in developing countries. These revenue inflows have potential to contribute in the development of economies. In 2010, Ebeke's study analyzed the impact of remittances on government tax revenue in developing countries over the period 1980-2006. The empirical investigations conclude that remittances positively affect the level and stability of revenue in recipient countries. The fiscal impact of remittances has been examined in remittance receiving countries for the period 1990-2009. Panel data of Middle East, North Africa, and Central Asia was employed. Empirical results suggested that remittances indirectly affect government revenue through sales and trade taxes by influencing the private demand. Remittances

increase the demand for both domestic and imported goods but not investment in remittance receiving countries (Abdih, Barajas, Chami & Ebeke, 2012).

Cross-country growth regression analysis explored that foreign aid has beneficial impact on developing countries growth. The empirical evidence pointed out that in aid-growth relation time lags and magnitude of impact can differ cross countries (Moreira, 2005). The relationship between foreign capital inflows (aid, loan) and government's fiscal behavior has been analyzed in Pakistan using the time series data for the period 1976-1995. Three stage least square estimates suggest that FCI enhances revenue efforts of government through taxation. Foreign aid and loans leads to higher expenditures on social and non development activities rather than on investment (Iqbal, 1997). Ahmad (2000) examined the impact of foreign aid on government fiscal behavior in Pakistan during 1980-2000. All types of Foreign aid including grants and loans affect the fiscal side of government budget. By comparing the welfare effects of grants and loan the study found that loans have beneficial effect on investment and income. Butt and Javid (2013) analyzed the effect of foreign aid on fiscal behavior of government of Pakistan for the period 1960-2010. Evidence showed that aid reduces both domestic revenue and domestic borrowing because governments replace foreign aid (grants) for domestic revenue and borrowing.

Mahmood and Chaudary (2013) examined the impact of FDI and GDP on tax revenue in case of Pakistan. By using the data for the period 1972 to 2010 the long run and short run relationship between dependent and independent variables was found by employing Auto-regressive distributive lag (ARDL) and error correction model (ECM). Empirical analysis showed that FDI and GDP per capita have significant and positive effect on revenue collection.

Gupta (2007) found the determinants of tax revenue by using a panel dataset of developing countries. Evidence found that GDP per capita, trade openness, agriculture share in GDP and foreign aid significantly contribute in tax revenue in developing countries. Political stability, share of direct and indirect taxes and corruption also affect tax revenue. Findings further revealed that countries that depend on direct taxes (income, profit and property taxes) perform well than those depend on indirect taxes i.e. trade taxes. Nwosa, Saibu and Fakunle (2012) used annual time series data of Nigeria for thirty years and examined trade liberalization contribution in trade tax revenue. Empirical investigation showed that openness, debt, GDP and labor force positively contribute in trade taxes and exchange rate have negative relation with trade taxes. Study found that openness is the major determinant of trade taxes in Nigeria during the period of 1980 to 2009. An Empirical investigation of the relationship between trade openness and total tax revenue stated that share of trade to GDP have positive effect on total tax revenue (Immurana, Rahman & Iddrisu, 2013). Regression analysis on the impact of import liberalization on import revenue showed that the average tariff rate have negative contribution in import tax revenue in Ghana (Brafu-Insaidoo & obeng 2008). Javid & Arif analyzed revenue performance for Asian developing countries. Estimated analysis for the period 1984-2010 showed that the variables that have significant effect on revenue performance include per capita GDP, foreign debt and agriculture share in GDP but inflation and trade openness have insignificant effect on revenue generation.

In sum, on the basis of reviewed literature it is concluded that few studies have analyzed the impact of foreign aid and remittance on tax revenue in Pakistan. Most of studies have analyzed the impact of foreign inflows on tax revenue in an isolated way. But the little attention has paid on simultaneous relationship between different components of foreign capital inflows and tax collection. Thus, there is a knowledge gap in existing literature on the aggregate analysis of foreign capital inflows (FDI, Remittances, ODA and TOP) on tax
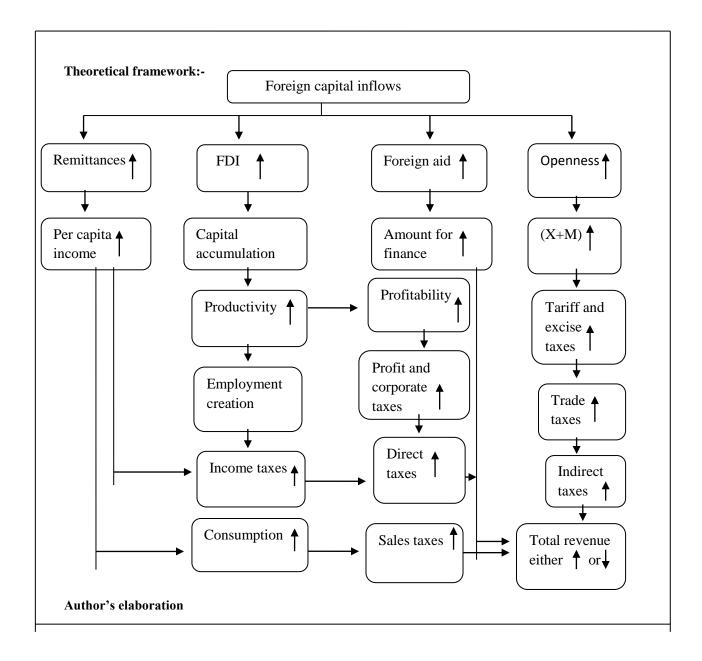
collection in Pakistan. Therefore, this paper attempts to analyze the impact of foreign capital inflows on tax collection in Pakistan for the period 1975-2012.

Theoretical framework

On the basis of theoretical and empirical reviewed literature it is important to develop theoretical framework to make the logical sense for the relationship to be analyzed. The relationships between foreign capital inflow and domestic tax revenue have been studied in many countries. Studies have found the mixed results depending on the countries specific characteristics. Foreign capital inflows composed of four components like Foreign aid, FDI, remittances, and trade openness. Total tax revenue includes the sum of both direct and indirect tax collection.

The fiscal impact of remittances has been examined in remittance receiving countries for the period 1990-2009. Empirical results for Panel dataset of Middle East, North Africa, and Central Asia confirmed that remittances indirectly affect government revenue through sales and trade taxes. Remittances influence the public demand which increase the demand for both domestic and imported goods but not investment in remittances receiving countries (Abdih et. al, 2012). Remittances increase household's per capita income which increases consumption of both domestic and imported goods which in turn increase indirect tax collection. Due to Increase in per capita income people move in higher income brackets which results in higher income taxes which affect direct income taxes.

FDI leads to capital accumulation by which productivity and growth increase in recipient countries. Increase in productivity increase profit and corporate taxes which in turn increase both direct and indirect taxes. In this way FDI both directly and indirectly affect tax revenue. FDI in telecom sector directly affect revenue. For example, Services provided by telecom sector are directly taxed in Pakistan.

Theoretical framework:-

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                          │  Foreign capital inflows │
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Author's elaboration

Empirical estimates on the fiscal effect of foreign aid (ODA) in India supported the fact that federal government substitute's foreign assistance for non-development expenditure and does not decrease domestic tax collection. Due to large amount of foreign financial inflows government feel relaxation and does not take reform to increase taxes domestically. Thus, Foreign aid directly affects domestic tax revenue because Government considers foreign inflows (aid/ODA, loan, grants) as an alternative source to finance its expenditure (Swaroop, Jha & Rajkumar, 2000).

Trade openness is mainly linked to tax revenue through its effect on international trade taxes. The imposition of tariff and excise duties on imports and exports affects the federal government revenue. Increase in trade of exports and imports results an increase in import and export levies which increase trade taxes. Trade openness affects direct taxes through inflation. Romer (1993) postulated the hypothesis that inflation is lower in more open economies. Mukhtar (2012) confirmed the existence of Romer hypothesis in case of Pakistan which showed that due to increase in trade openness prices decrease which in turn increase

the real value of money. Chaudhry and Munir (2010) empirically analyzed the determinant of low tax revenue by using time series data over the period 1973-2009 in Pakistan. Empirical investigation explored that most important determinant of tax effort are foreign aid, public debt and trade openness.

Data and Variable Description

For empirical analysis this study used annual time series data of pakistan for the period 1975-2012. There are four components of foreign capital inflows which include foreign direct investment, remittances, official development assistance. Total tax revenue is taken as dependent variable. Data on dependent and independent variables has been taken from SBP annual reports, FBR annual reports, WDI and from Pakistan bureau of statistics. All the variables are taken in million rupees for 38 years. Variables Description and their data source are given in table.

Variables	Description	Source
Tax Revenue	FBR total tax collection (Direct and indirect taxes) in Million Rs.	From FBR annual reports
FDI	Foreign Direct Investment in Million Rs.	From SBP annual reports
Remittances	Remittances in Million Rs.	From SBP annual reports
Foreign aid	Official development assistance in Million Rupees	World development indicators
Trade openness	Trade of export and import in Million Rupees	Pakistan Bureau of statistics

Methodology

To examine the impact of foreign capital inflows on tax collection data is collected from 1975 to 2012 from Handbook of Statistics on Pakistan Economy, FBR annual reports and WDI. The total five variables include one dependent variable and four independent variables. All the variables are in million rupees. GDP deflator is used to make all nominal series real. All the variables are converted to logarithmic form. As Cameron (1994) suggested that when data is transformed into logarithmic form then efficiency of results improves.

The model of this study contains five variables through which the relationship between foreign capital inflows and total tax revenue will be examined. Functional form of total revenue is written as:

$$Revenue_t = f (FDI_t, REMIT_t, ODA_t, TRAD_t)$$

Where;
Revenue   =   FBR direct and indirect tax collection
FDI   =   foreign direct investment
REMIT   =   remittance inflows
ODA   =   official development assistance
Trade   =   Exports plus Imports in million rupees

Table-1: Descriptive analysis

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  Variable │      Obs        Mean    Std. Dev.        Min         Max
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   revenue │       38    3468.988    1714.091    1019.292    9828.492
       fdi │       38    406.1518     536.586    8.092437    2069.721
     remit │       38    1502.905    1107.476     199.264    6358.679
     trade │       38    20250.71    17230.92    3116.819       65224
       oda │       38    711.5379    252.5186    376.9932    1483.335
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The data period ranges from 1975 to 2012 in million rupees including 38 observations. Descriptive analysis showed that revenue on average remained 3468 million rupees, FDI 406 million rupees, ODA 711 and remittances 1502 million during the study period. Maximum Revenues were 9828 million rupees and minimum were 1019 million rupees.

Estimation and interpretation

For the purpose of estimation it is necessary to test the unit root problem in each variable. Augmented Dickey fuller stationary test is applied on both dependent and independent variables. Initially Augmented Dickey Fuller test is applied to check the level of stationary of the series. The ADF results are reported in table 3.

Table-2: ADF unit root test

Variables	Level (t-stat) Probability	First Difference (t-stat) Probability	Decision	Order of integration
LREVENUE	(-0.45586) 0.8886	(-4.28845) 0.0017	Non stationary at level	I (1)
LFDI	(1.154148) -6.282987	(-6.82987) 0.0000	Non stationary at level	I (1)
LREMIT	(-1.510805) 0.5171	(-3.46397) 0.0150	Non stationary at level	I (1)
LTRADE	(-0.87838) -5.242045	(0.7839) 0.0001	Non stationary at level	I (1)
LODA	(0.721911) 0.8663	(-7.27263) 0.0000	Non stationary at level	I (1)

Augmented Dickey fuller test indicated the existence of unit root problem in the data. All variables are non-stationary at level. At first difference all the series have become stationary. All series are integrated of order one I (1).

Table-3: Unrestricted Cointegration Rank Test (Trace)

Null alternative	r=0 r≥1	r≤1 r≥2	r≤2 r≥3	r≤3 r=3
Trace statistics	87.39596	43.01771	18.50526	9.155246
Eigen value	0.718592	0.503591	0.234437	0.211970
Critical value	69.81889	47.85613	29.79707	15.49471
probability	0.0011	0.1321	0.5289	0.3512

Table-4: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Null alternative	r=0 r≥1	r≤1 r≥2	r≤2 r≥3	r≤3 r=3
Max-Eigen statistics	44.37824	24.51246	9.350012	8.337671
Eigen value	0.718592	0.503591	0.234437	0.211970
Critical value	33.87687	27.58434	21.13162	14.26460
probability	0.0020	0.1178	0.8032	0.3454

Next step is to test whether stationary time series are Cointegrated or not. For Cointegration analysis the relationship between dependent and independent variables have been examined using Johansen Cointegration test. Johansen and Joselius proposed Johansen Cointegration methodology. The Johansen maximum likelihood approach has some advantage over traditional causality procedure i.e. Engle–Granger procedure. It allows Cointegration analysis in multivariate framework, as a single time series cannot be Cointegrated.

Trace statistics and maximum Eigenvalue test indicate that there is one cointegrating equation for revenue, FDI, ODA, REMIT and trade. Long relationship exists between dependent and independent variables because the calculated value from these tests is greater than their respective critical values.

LREVENUE = -1.9665 + 0.0593 LREMIT -0.0367 LODA- 0.5071 LFDI +1.3850LTRADE
$$\quad\quad\quad\quad\quad (0.03962) \quad\quad (0.09369) \quad (0.08435) \quad\quad (0.15643)$$
$$\quad\quad\quad\quad\quad [1.49720] \quad\quad [-0.39245] \quad [-6.01274] \quad [8.85439]$$

Cointegration analysis shows that there is a positive relationship between revenue and remittances. As remittances increase by one million Rs. then revenue increase by 0.059323 million rupees. These findings are consistent with earlier findings (Ebeke, 2010; & Abdih et.al, 2012). They found that remittances positively affect the level and stability of government revenue. Remittances indirectly affect government revenue through sales and trade taxes by influencing the private demand. Revenue and FDI also have negative relationship one million increases in foreign direct investment results 0.507170 decrease in total revenue. FDI can negatively affect tax revenue in developing countries because to attract foreign investors' government rebate in tax which results lower taxes. Mahmood and Chaudary (2013) found that FDI and GDP per capita have significant and positive effect on total tax revenue. ODA also have negative insignificant effect on tax revenue. These finding are consistent with other studies because earlier findings mostly suggest that ODA have negative effect on government revenue. Foreign aid in the form of grants, loans reduces domestic borrowing and domestic tax revenue (Javid & Arif, 2013; Martin, 2007). Total trade of export and import of one million rupees results an increase of 1.385099 million rupees in total tax collection in Pakistan. Because increase in export and import results an increase in trade taxes.

As Johansen test of Cointegration indicated that Cointegration exists between variables. In next step error correction model is estimated. Error correction model directly estimates the speed at which the dependent variable returns toward equilibrium after a change in independent variable. The result of ECM indicate error correction term for revenue is negative -.52 which shows convergence toward equilibrium.

Conclusion

This paper attempts to investigate the impact of foreign capital inflows on tax revenue in Pakistan over the period of 1975-2012. Data has been taken from SBP reports, FBR annual reports, WDI and from Pakistan bureau of statistics. Augmented Dickey fuller stationary test was applied on both dependent and independent variables. ADF test indicated that all series are integrated I (1), which led Johansen Co integration approach for the long run relationship. Remittances and trade positively affect tax revenue while FDI have negative relationship with domestic tax revenue in Pakistan. Thus, this paper concludes that the long run and short run relationship exist between dependent and independent variables.

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